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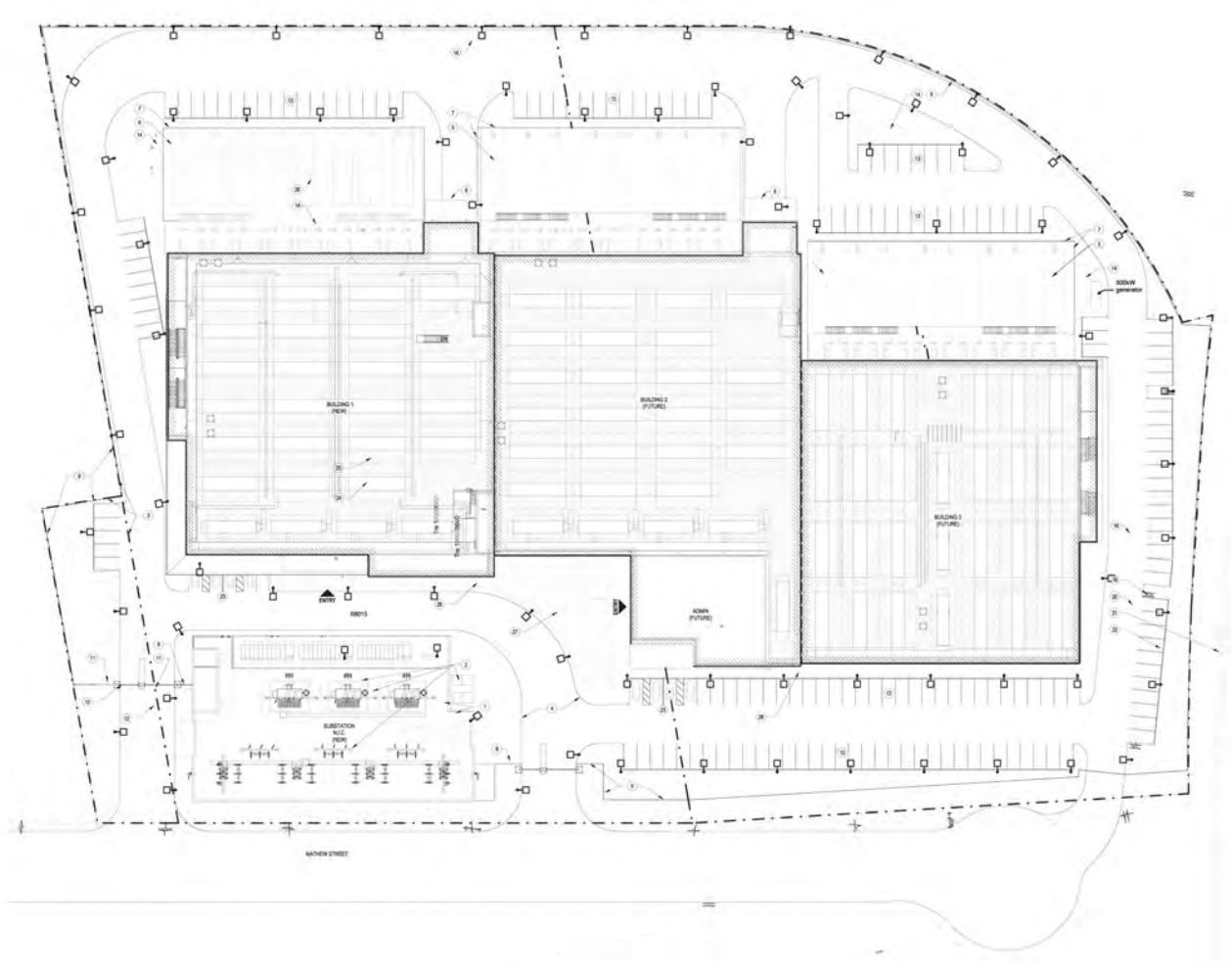
MCLAREN DATA CENTER PROJECT

Initial Study and
Proposed Mitigated Negative Declaration



CALIFORNIA
ENERGY COMMISSION
Edmund G. Brown, Jr, Governor

June 2018
CEC-700-2018-002-SD

DOCKET NUMBER 17-SPPE-01

Initial Study and

Proposed Mitigated Negative Declaration

McLaren Data Center Project

(17-SPPE-01)

Lead Agency

California Energy Commission

June 2018

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Appendix A: City of Santa Clara - Proposed Mitigated Negative Declaration and Initial Study

Section 1

Proposed Mitigated Negative Declaration and SPPE Recommendation

CALIFORNIA ENERGY COMMISSION
1516 NINTH STREET
SACRAMENTO, CA 95814-5512
www.energy.ca.gov

Proposed Mitigated Negative Declaration and SPPE Recommendation McLaren Data Center Project 17-SPPE-01

1. Mitigated Negative Declaration

1.1 Project Information

Project: McLaren Data Center Project
Santa Clara, California

Applicant: Vantage Data Centers
Represented by DayZen, LLC
2501 Capitol Avenue, Suite 201
Sacramento, CA 95816

Vantage Data Centers proposes to construct the McLaren Data Center Project (Proposed Project), which would include data center buildings and a backup energy generating facility with a generation capacity up to 91.7 megawatts (MW). The California Energy Commission (Energy Commission) is responsible for reviewing, and ultimately approving or denying, all thermal electric power plants, 50 MW and greater, proposed for construction in California. The Energy Commission has a regulatory process, referred to as the Small Power Plant Exemption (SPPE) process, which allows applicants with projects between 50 and 100 MW to obtain an exemption from the Energy Commission's jurisdiction and proceed with local approval rather than requiring an Energy Commission license. The Energy Commission can grant an exemption if it finds that the proposed project would not create a substantial adverse impact on the environment or energy resources.

1.2 Introduction

Pursuant to the California Environmental Quality Act (CEQA), the Energy Commission prepared an Initial Study (IS) for the Proposed Project to determine if any significant adverse effects on the environment would result from project implementation. The IS utilizes the environmental checklist outlined in Appendix G of the CEQA *Guidelines*. If the IS for the project indicates that a significant adverse impact could occur, the Energy Commission would be required to prepare an Environmental Impact Report.

According to Article 6 (Negative Declaration Process) and Section 15070 (Decision to Prepare a Negative Declaration or Mitigated Negative Declaration) of the CEQA *Guidelines*, a public agency shall prepare or have prepared a proposed negative declaration or mitigated negative declaration for a project subject to CEQA when:

(a) The initial study shows that there is no substantial evidence, in light of the whole record before the agency, that the project may have a significant effect on the environment, or

(b) The initial study identifies potentially significant effects, but:

(1) Revisions in the project plans or proposals made by, or agreed to by, the applicant before a proposed mitigated negative declaration and initial study are released for public review would avoid the effects or mitigate the effects to a point where clearly no significant effects would occur, and

(2) There is no substantial evidence, in light of the whole record before the agency, that the project as revised may have a significant effect on the environment.

1.3 Project Description

The McLaren Data Center project consists of two primary components: the McLaren Data Center (MDC) and the McLaren Backup Generating Facility (MBGF). The MDC consists of three four-story, 175,000-180,000-gross square feet (gsf) data center buildings (a total of approximately 541,000 gsf) and a paved surface parking lot on an approximately 8.97-acre site.

The MBGF consists of 47 diesel-fired backup generators, each with a peak output capacity of 2.75 MW and with a continuous steady state output capacity of 1.93 MW, for a total generation capacity of up to 91.7 MW to support the need for the MDC to provide uninterruptible power supply for its tenants' servers. Three additional 600kW generators would provide continuous power to the pumps associated with the fire sprinkler system and other emergency operations for each building. Additional project elements include switchgear and distribution cabling to interconnect the three generation yards to their respective buildings. The project also includes an approximately 14,250-sf Silicon Valley Power (SVP) substation along Mathew Street.

The MBGF's 47 backup generators will be located in generation yards at three separate locations. Each generation yard will be adjacent to the building it serves. Sixteen (16) of the backup generators will be dedicated to support MDC Building A; Sixteen (16) will be dedicated to support MDC Building B; and Fifteen (15) will be dedicated to support MDC Building C. Each of the three life safety generators will be located within the generation yard supporting each respective building.

Each backup generator is a fully independent package system with dedicated fuel tanks located on a skid below the generator. The generators will be supported in a stacked configuration. Each generation yard will be electrically interconnected to the building it serves through a combination of underground and above-ground conduit/cabling to a location within the building that houses electrical distribution equipment.

1.4 Environmental Determination

The IS was prepared to identify the potential environmental effects resulting from proposed project implementation, and to evaluate the level of significance of these effects. The IS is based on information from the applicant's initial and revised SPPE applications and associated submittals, site visits, data requests and responses, an existing certified IS and Mitigated Negative Declaration from the city of Santa Clara, and additional staff research.

Based on the analysis in the IS, it has been determined that all McLaren Data Center project-related environmental impacts could be reduced to a less than significant level with the incorporation of feasible mitigation measures. Therefore, adoption of a Mitigated Negative Declaration (MND) will satisfy the requirements of CEQA. The mitigation measures included in this MND are designed to reduce or eliminate the potentially significant environmental impacts described in the IS. Where a measure described in this document has been previously incorporated into the project, either as a specific project design feature or as a mitigation measure implemented as part of the city of Santa Clara's prior IS/MND for the McLaren Data Center, this is noted in the technical sections. Mitigation measures are structured in accordance with the criteria in Section 15370 of the *CEQA Guidelines*.

1.5 Mitigation Measures

Implementation of the following new or revised mitigation measures would avoid potentially significant impacts identified in the Initial Study or reduce them to less than significant levels.

Cultural

Mitigation Measures MM CR-1.1 through MM CR-1.3 were adopted as part of the city of Santa Clara's IS/MND. Staff evaluated these mitigation measures in the context of the potential impacts and has concluded that modifications to these measures and one additional measure are necessary. Implementation of modified mitigation measures **MM CR-1.1** through **MM CR-1.3 and new mitigation measure MM CR-1.4** would reduce the impacts to unknown cultural resources to less than significant.

Staff's recommended modifications to the city's adopted mitigation measures are shown in **bold/underline** and ~~strikethough~~ text. These mitigation measures should be printed out on all construction documents and implemented during construction to avoid significant impacts on subsurface historic or prehistoric resources.

MM CR-1.1: A **Secretary of the Interior-**qualified archaeologist **and a Native American cultural resources monitor** shall be on site to monitor grading of native soil once all pavement is removed from the project site. The project applicant shall submit the name and qualifications of the selected archaeologist **and Native American Monitor** to the 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:**

1. **Traditional ties to the area being monitored.**
2. **Knowledge of local historic and prehistoric Native American village sites.**
3. **Knowledge and understanding of Health and Safety Code, Section 7050.5 and Public Resources Code, Section 5097.9 et seq.**
4. **Ability to effectively communicate the requirements of Health and Safety Code, Section 7050.5 and Public Resources Code, Section 5097.9 et seq.**
5. **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.**
6. **Ability to travel to project sites within traditional tribal territory.**

7. **Knowledge and understanding of Title 14, California Code of Regulations, Section 15064.5.**

8. **Ability to advocate for the preservation in place of Native American cultural features through knowledge and understanding CEQA mitigation provisions.**

9. **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.**

10. **Knowledge and understanding of archaeological practices, including the phases of archaeological investigation.**

After ~~monitoring the~~ **removal of pavement and prior to** grading ~~phase~~, the archaeologist shall **conduct a pedestrian survey over the exposed soils to determine if any surface archaeological manifestations are present. The archaeologist will monitor full-time all grading and ground disturbing activities in native soils associated with construction of the proposed project. If the archaeologist and Native American monitor believe that a reduction in monitoring activities is prudent,** ~~make recommendations for further monitoring if it is determined that the site has cultural resources. Recommendations for further monitoring shall be implemented during any remaining ground-disturbing activities. If the archaeologist determines that no resources are likely to be found on site, no additional monitoring shall be required. A~~ **then a** letter report **detailing the rationale for making such a reduction and** summarizing the **monitoring** results ~~of the initial monitoring during site grading and any recommendations for further monitoring~~ shall be provided to the Director of Community Development ~~prior to onset of building construction~~. **Department of Recreation 523 forms shall be submitted along with the report for any cultural resources encountered over 50 years old.**

MM CR-1.2: In the event that prehistoric or historic resources are encountered during on-site construction activities, all activity within a 50-foot radius of the find shall be stopped, the Director of Community Development shall be notified, and a **Secretary of the Interior-**qualified archaeologist ~~or paleontologist~~ 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** ~~and~~ make ~~appropriate~~ **a** recommendation~~s~~. **regarding eligibility for the California Register of Historical Resources, data recovery, curation, or other appropriate mitigation. Ground disturbance within the 50-foot radius can resume once these steps are taken and the Director of Community Development has concurred with the recommendations. Within 30 days of the completion of construction or cultural resources monitoring, whichever comes first, a** ~~Recommendations could include collection, recordation, and analysis of any significant cultural materials. A~~ report of findings documenting any ~~data recovery during monitoring~~ **cultural resource finds, recommendations, data recovery efforts, and other pertinent information gleaned during cultural resources monitoring** shall then be submitted to the Director of Community Development. **Once finalized, this report shall be submitted to the Northwest Information Center at Sonoma State University.**

MM CR-1.3: In the event that human remains are discovered during on-site construction activities, all activity within a 50-foot radius of the find shall be stopped. The Santa Clara County Coroner shall be notified and shall make a determination as to whether the remains are of Native American origin or whether an investigation into the cause of death is required. If the remains are determined to be Native American, the Coroner shall notify the Native American Heritage Commission**. All actions taken under this mitigation measure shall comply with Health and Human Safety Code § 7050.5(b).**

MM CR-1.4: Prior to and for the duration of ground disturbance, the project owner shall provide Worker Environmental Awareness Program training to all existing and any new employees. This training should include: a discussion of applicable laws and penalties under the laws; samples or visual aids of artifacts that could be encountered in the project vicinity, including what those artifacts may look like partially buried, or wholly buried and freshly exposed; and instructions to halt work in the vicinity of any potential cultural resources discovery, and notify the city-approved archaeologist and Native American cultural resources monitor.

Tribal Cultural

Staff also recommends the following new mitigation measures to address potential Tribal Cultural impacts. These mitigation measures should be printed out on all construction documents and implemented during construction to avoid significant impacts on subsurface tribal cultural resources.

MM TCR-1.1: A Secretary of the Interior-qualified archaeologist and a Native American cultural resources monitor shall be on site to monitor grading of native soil once all pavement is removed from the project site. The project applicant shall submit the name and qualifications of the selected archaeologist and Native American monitor to the 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:

- Traditional 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 15064.5.
- Ability to advocate for the preservation in place of Native American cultural features through knowledge and understanding 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 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. The archaeologist shall monitor full-time all grading and ground disturbing activities in native soils associated with 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 a summary of monitoring results shall be provided to the 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.

MM TCR-1.2: In the event that prehistoric or historic resources are encountered during on-site construction activities, all activity within a 50-foot radius of the find shall be stopped, the Director of Community Development shall be notified, and a Secretary of the Interior-qualified archaeologist shall examine the find, and record the site, including field notes, measurements, and photography for a Department of Parks and Recreation 523 Primary Record form. The archaeologist, in consultation with the Native American monitor, shall make a recommendation regarding eligibility for the California Register of Historical Resources, a determination if the resource is also a tribal cultural resource, data recovery, curation, or other appropriate mitigation. Ground disturbance within the 50-foot radius can resume once these steps are taken and the Director of Community Development has concurred with the recommendations. Within 30 days of the completion of construction or cultural resources monitoring, whichever comes first, a report of findings documenting any cultural resource finds, recommendations, data recovery efforts, and other pertinent information gleaned during cultural resources monitoring shall be submitted to the Director of Community Development. Once finalized, this report shall be submitted to the Northwest Information Center at Sonoma State University.

MM TCR-1.3: In the event that human remains are discovered during on-site construction activities, all activity within a 50-foot radius of the find shall be stopped. The Santa Clara County Coroner shall be notified and shall make a determination as to whether the remains are of Native American origin or whether an investigation into the cause of death is required. If the remains are determined to be Native American, the Coroner shall notify the Native American Heritage Commission. All actions taken under this mitigation measure shall comply with Health and Human Safety Code § 7050.5(b).

MM TCR-1.4: Prior to and for the duration of ground disturbance, the project owner shall provide Worker Environmental Awareness Program training to all existing and any new employees. This training should include: a discussion of applicable laws and penalties under the laws; samples or visual aids of artifacts that could be encountered in the project vicinity, including what those artifacts may look like partially buried, or wholly buried and freshly exposed; and instructions to halt work in the vicinity of any potential cultural resources discovery.

2. Small Power Plant Exemption Recommendation

Based on the above, Staff recommends that the McLaren Data Center Project be exempted from Energy Commission jurisdiction and that further permitting be handled at the local permitting level.

Section 2

Environmental Determination

2. Environmental Determination

2.1 Environmental Factors Potentially Affected

The environmental factors checked below would be potentially affected by this project, involving at least one impact that is a "Potentially Significant Impact" and requiring implementation of mitigation as indicated by the checklist on the following pages.

☐ Aesthetics	☐ Agriculture & Forestry Resources	☐ Air Quality
☐ Biological Resources	☒ Cultural Resources	☐ Geology/Soils
☐ Greenhouse Gas Emissions	☐ Hazards & Hazardous Materials	☐ Hydrology/Water Quality
☐ Land Use/Planning	☐ Mineral Resources	☐ Noise
☐ Population/Housing	☐ Public Services	☐ Recreation
☐ Transportation/Traffic	☒ Tribal Cultural Resources	☐ Utilities/Service Systems
☒ Mandatory Findings of Significance		

2.2 Environmental Determination

On the basis of this initial evaluation:

☐ I find that the Proposed Project COULD NOT have a significant effect on the environment, and a **NEGATIVE DECLARATION** will be prepared.

☒ I find that although the Proposed Project could have a significant effect on the environment, there will not be a significant effect in this case because revisions in the project have been made by or agreed to by the project proponent. A **MITIGATED NEGATIVE DECLARATION** will be prepared.

☐ I find that the Proposed Project MAY have a significant effect on the environment, and an **ENVIRONMENTAL IMPACT REPORT** is required.

☐ I find that the Proposed Project may have a "potentially significant impact" or "potentially significant unless mitigated" impact on the environment, but at least one effect (1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and (2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An **ENVIRONMENTAL IMPACT REPORT** is required, but it must analyze only the effects that remain to be addressed.

☐ I find that although the Proposed Project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier EIR pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier EIR, including revisions or mitigation measures that are imposed upon the Proposed Project, nothing further is required.



June 22, 2018

Leonidas Payne, Project Manager
Siting, Transmission and Environmental Protection Division
California Energy Commission

Date

Section 3

Introduction to the Initial Study

3. Introduction to the Initial Study

3.1 Energy Commission Jurisdiction and the Small Power Plant Exemption (SPPE) Process

The California Energy Commission (Energy Commission) is responsible for reviewing, and ultimately approving or denying, all thermal electric power plants, 50 MW and greater, proposed for construction in California. The Energy Commission has a regulatory process, referred to as the Small Power Plant Exemption (SPPE) process, which allows applicants with projects between 50 and 100 MW to obtain an exemption from the Energy Commission's jurisdiction and proceed with local approval rather than requiring an Energy Commission license. The Energy Commission can grant an exemption if it finds that the proposed project would not create a substantial adverse impact on the environment or energy resources.

3.2 CEQA Lead Agency

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

3.3 Purpose of the Analysis

The purpose of this document is to provide objective information regarding the environmental consequences of the proposed project to the Commissioners who will be reviewing and considering applicant Vantage Data Centers' request for a SPPE, which would exempt the project from Energy Commission's power plant licensing requirements.

3.4 CEQA Analysis Format

The environmental analysis of a SPPE typically takes the form of an Initial Study (IS), which is prepared to conform to the requirements of the California Environmental Quality Act (CEQA), the CEQA Guidelines (California Code of Regulations 15000 et. seq.), and the regulations and policies of the Energy Commission. The IS is based on information from the applicant's revised SPPE application and associated submittals, site visits, data requests and responses, an existing certified mitigated negative declaration and initial study from the city of Santa Clara and additional staff research.

The McLaren Data Center project consists of two primary components−the McLaren Data Center (MDC) and the McLaren Backup Generating Facility (MBGF)−which together represent the whole of the action. For a more complete Project Description, please see Chapter 4.

This IS evaluating the potential environmental impacts that might reasonably be anticipated to result from the construction and operation of the project. Staff's analysis is broken down into issue areas derived from CEQA Appendix G:

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

In addition, Energy Commission CEQA analysis documents include an analysis of Energy Resources and Environmental Justice.

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

Section 4

Project Description

4. Project Description

Vantage Data Centers proposes to construct the McLaren Data Center Project (Proposed Project), which would include data center buildings and a backup energy generating facility with a generation capacity up to 91.7 megawatts (MW).

4.1 Project Title

McLaren Data Center

4.2 Lead Agency Name and Address

California Energy Commission
1516 Ninth Street
Sacramento, California 95814

4.3 Lead Agency Contact Person and Phone Number

Leonidas Payne, Project Manager
Siting, Transmission, and Environmental Protection Division
California Energy Commission
(916) 651-0966

4.4 Project Location

Figure 4-1 is a map of the project vicinity and Figure 4-2 illustrates the project location.

4.5 Project Overview

The McLaren Data Center project consists of two primary components: the McLaren Data Center (MDC) and the McLaren Backup Generating Facility (MBGF). The MDC consists of three four-story, 175,000-180,000-gross square feet (gsf) data center buildings (a total of approximately 541,000 gsf) and a paved surface parking lot on an approximately 8.97-acre site.

The MBGF consists of 47 diesel-fired backup generators, each with a peak output capacity of 2.75 MW and with a continuous steady state output capacity of 1.93 MW, for a total generation capacity of up to 91.7 MW to support the need for the MDC to provide uninterruptible power supply for its tenants' servers. Three additional 600kW generators would provide continuous power to the pumps associated with the fire sprinkler system and other emergency operations for each building. Additional project elements include switchgear and distribution cabling to interconnect the three generation yards to their respective buildings. The project also includes an approximately 14,250-sf Silicon Valley Power (SVP) substation along Mathew Street.

The MBGF's 47 backup generators will be located in generation yards at three separate locations. Each generation yard will be adjacent to the building it serves. Figure 4-3 shows the general arrangement and site layout of the MBGF within the project site. Sixteen (16) of the backup generators will be dedicated to support MDC Building A; Sixteen (16) will be dedicated to support MDC Building B; and Fifteen (15) will be dedicated to support MDC Building C. Each of the three life safety generators will be located within the generation yard supporting each respective building.

Each backup generator is a fully independent package system with dedicated fuel tanks located on a skid below the generator. The generators will be supported in a stacked configuration. Each generation yard will be electrically interconnected to the building it serves through combination of underground and above-ground conduit/cabling to a location within the building that houses electrical distribution equipment.

Backup Electrical System Design

Overview

The design objective of the backup electrical system is to provide sufficient equipment and redundancy to ensure that the servers housed in the MDC buildings will never be without electricity to support critical loads. The critical loads include the load to support the building operation in addition to the electricity consumed by the servers themselves. The largest of these building loads is to provide cooling for the server rooms.

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

Each electrical system will consist of an Uninterruptible Power Supply (UPS) system that will be supported by batteries, electrical switchgear, an electrical inverter and portions of the MBGF backup generation.

UPS System and Batteries

The batteries will be configured in banks with matching standalone valve-regulated battery banks. Each battery bank will provide a minimum of 5 minutes of backup at 100% rated inverter load of 1000kW, @ 77°F/25°C, 1.67 end volts per cell, beginning of life.

When Main Power is lost, the battery option shall automatically back up the inverter so there is no interruption of AC power to the critical load. The system shall recover to the Normal Operating Mode and shall cause no disturbance to the critical load while simultaneously recharging the backup battery.

Electrical Generation Equipment

Each of the 47 generators will be a Tier-2 emergency diesel fired generator equipped with diesel particulate filters (DPF). The generators will be Caterpillar Model 3615-E. The maximum peak generating capacity of each model is 2.75 MW with a steady state continuous generating capacity of 1.93 MW.

Each individual generator will be provided with its own package system. Within that package, the prime mover and alternator will be made ready for the immediate call for the request for power controlled by the UPS. Each generator package will integrate a dedicated fuel tank with a capacity of 6,300 gallons. The generators will be configured in three generator yards. There will be two levels. Half of the generators in each yard will be placed on a concrete slab and the other half will be on a second level directly above the ground with the generators mounted on a steel support structure. The generators are approximately 8 feet 9 inches wide, 27 feet long and 11 feet high. Each generator will have a stack height of approximately 47 feet 9 inches. When placed on slab, they will be spaced approximately 10 feet apart horizontally, while the second level of generators will be mounted 26 feet 8 inches above the ground. Each generator yard

will be located adjacent to the MDC building it serves. The generator yards will be enclosed with 8 feet high chain link fencing to separate them from the balance of the property.

All four systems share the approximate 3MW of mechanical load for a total load of 9MW. Should any one system fail, the surviving systems will have enough capacity to completely share the 9MW of total load at the maximum capacity of the surviving generators. During a utility outage, all four generators will start and be connected to their dedicated loads. If none of the generator systems fail during the utility outage, the total maximum load of 9MW will still be shared between the four generators, and will only be running at about 66% of the full capacity of the generator.

Fuel System

The backup generators will use ultra-low sulfur diesel as fuel (< 15 parts per million sulfur by weight). Each generator package will include an integrated fuel tank with a capacity of 6,300 gallons, which is sufficient for operating at steady state continuous load for at least 24 hours.

Cooling System

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

Water Supply and Use

The MBGF will not require any consumption of water.

Waste Management

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

Hazardous Materials Management

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

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

Diesel fuel will be delivered on an as-needed basis in a compartmentalized tanker truck with maximum capacity of 8,500 gallons. The tanker truck parks at the gated entrances to the generator yard for re-fueling.

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

To further minimize the potential for diesel fuel to come into contact with stormwater, to the extent feasible, fueling operations will be scheduled at times when storm events are improbable.

Warning signs and/or wheel chocks will be used in the loading and/or unloading areas to prevent vehicles from departing before complete disconnection of flexible or fixed transfer lines. An emergency pump shut-off will be utilized if a pump hose breaks while fueling the tanks. Tanker truck loading and unloading procedures will be posted at the loading and unloading areas.

4.6 Existing Site Condition

The project site is 8.97 acres (390,900 square feet [sf]) and located at 651, 725, and 825 Mathew Street in Santa Clara, California (see Figure 4-4). The project site comprises three parcels used for industrial warehouse, manufacturing, and office purposes, as well as associated surface parking. The existing buildings on the site have a total footprint of approximately 147,600 sf. These buildings are currently being demolished as part of the city of Santa Clara's prior approval of demolition and construction activities at the project site.

The site is bounded by existing occupied buildings to the west, rail tracks to the east, a Home Depot location to the north and Mathew Street to the south. The project site is located approximately 0.3 mile west of the Norman Y. Mineta San Jose International Airport. The westernmost portion of the project site is the 0.26-acre parcel APN 224-40-011 (located at 825 Mathew Street). Vehicle ingress and egress for this parcel is provided by one gated driveway along Mathew Street. The central portion of the site is the 4.36-acre APN 224-40-002 (located at 725 Mathew Street). Vehicle ingress and egress to this parcel is provided by one gated driveway along Mathew Street. The easternmost portion of the project site is the 4.35-acre APN 224-40-001 (located at 651 Mathew Street). Vehicle ingress and egress to this parcel is provided by one gated driveway along Mathew Street. APNs 224-40-001 and 224-40-002 were developed as canneries in the late 1940s.

There are no trees and limited landscaping present on the project site. The limited landscaping includes several non-native volunteer shrubs, including Canary Island date palm, Mexican avocado, tree of heaven, and silk tree.

4.7 Project Construction

To create the McLaren Data Center (MDC), the applicant proposes to demolish any remaining industrial warehouse, manufacturing, and office facilities, as well as the associated surface parking, and construct three four-story, 175,000-180,000-gross square feet (gsf) data center buildings (a total of approximately 541,000 gsf) and a paved surface parking lot that would become a new Vantage Data Center campus. Building A is proposed for the west end of the site, Building B in the center, and Building C on the east end of the site. Vehicle ingress and egress would be provided by three new gated driveways along Mathew Street. The central entry would provide the main passenger vehicle and pedestrian access to the site, while the east and west entries would be intended for service vehicles related to loading and deliveries. Service vehicles would drive around the north portion of the MDC site and exit through the middle exit driveway. The landscaped central access drive would be flanked by Building A to the west, Building B in the center, and Building C to the east. There would be a 26-foot wide loop road around the project site for fire access and general circulation. Approximately 189 parking spots would be provided within the project site. In addition, ten Class I bicycle locker spaces and six Class II bicycle rack spaces would be provided on site.

The MDC would be constructed in three phases. Building A in the western portion of the site would be developed during Phase 1 (refer to Appendix C, Figures 3.0-1 and 3.0-2). The construction of the electrical substation would primarily occur during Phase 1. Building B in the central portion of the campus would be developed during Phase 2, and Building C in the eastern portion of the campus during Phase 3 (refer to Appendix C, Figures 3.0-3 and 3.0-4).

The first story of Building A would include the building lobby, multipurpose offices, storage rooms, meeting rooms, break rooms, restrooms, three data center modules, and support facilities including electrical rooms. Six data center modules along with their respective support facilities are located each on the second, third and fourth floor. Buildings B and C are nearly identical in configuration to Building A with six data center modules and support facilities located on each of the first, second, third and fourth floors of the proposed buildings. Each data module provides one megawatt (MW) of critical IT load capacity. The height of Buildings A and B to the top of the metal screen would remain approximately 106 feet above ground surface.

Construction of the MBGF will also take place in three phases. Each phase represents a generation yard which will be constructed to serve one of the three MDC Buildings. Each generator yard will be located adjacent to the MDC building it serves. Phase I will include 16 backup generators and a life safety generator; Phase II will include 16 backup generators and a life safety generator; and Phase III will include 15 generators and a life safety generator. Each generator yard will be on two levels. Half of the generators in each yard will be placed on a concrete slab and the other half will be on a second level directly above the ground with the generators mounted on a steel support structure. The generator yards will be enclosed with 8 feet high chain link fencing to separate them from the rest of the property.

The generators are approximately 8 feet 9 inches wide, 27 feet long and 11 feet high. Each generator will have a stack height of approximately 47 feet 9 inches. When placed on slab, they will be spaced approximately 10 feet apart horizontally, while the second level of generators will be mounted 26 feet 8 inches above the ground.

Since the site preparation activities for the prior approved MDC will include the ground preparation and grading of the entire MDC site, the only other construction activities associated with the MBGF to be analyzed would include the components of each generation yard. The components include construction of concrete slabs, fencing, installing underground and above-ground conduit for electrical cabling to interconnect to the MDC building switchgear, construction of the racking system to support the second level of generators, and placement and securing of the generators.

The generators themselves will be assembled offsite and delivered to site by truck. Each generator will be placed within the generation yard by a crane. Construction of each generation yard and placement of the generators is expected to take six months. Construction personnel are estimated to range from 10 to 15 workers per generation yard including one crane operator.

4.8 Facility Operation

The backup generators will be run for short periods for testing and maintenance purposes and otherwise will not operate unless there is a disturbance or interruption of the utility supply. BAAQMD's Authority to Construct and the California Air Resources Board's Airborne Toxic Control Measures (ATCM) limits each engine to no more than 50 hours annually for reliability purposes (i.e., testing and maintenance). Operation is further limited by permit restrictions on emissions, as discussed in the Air Quality section.

4.9 References

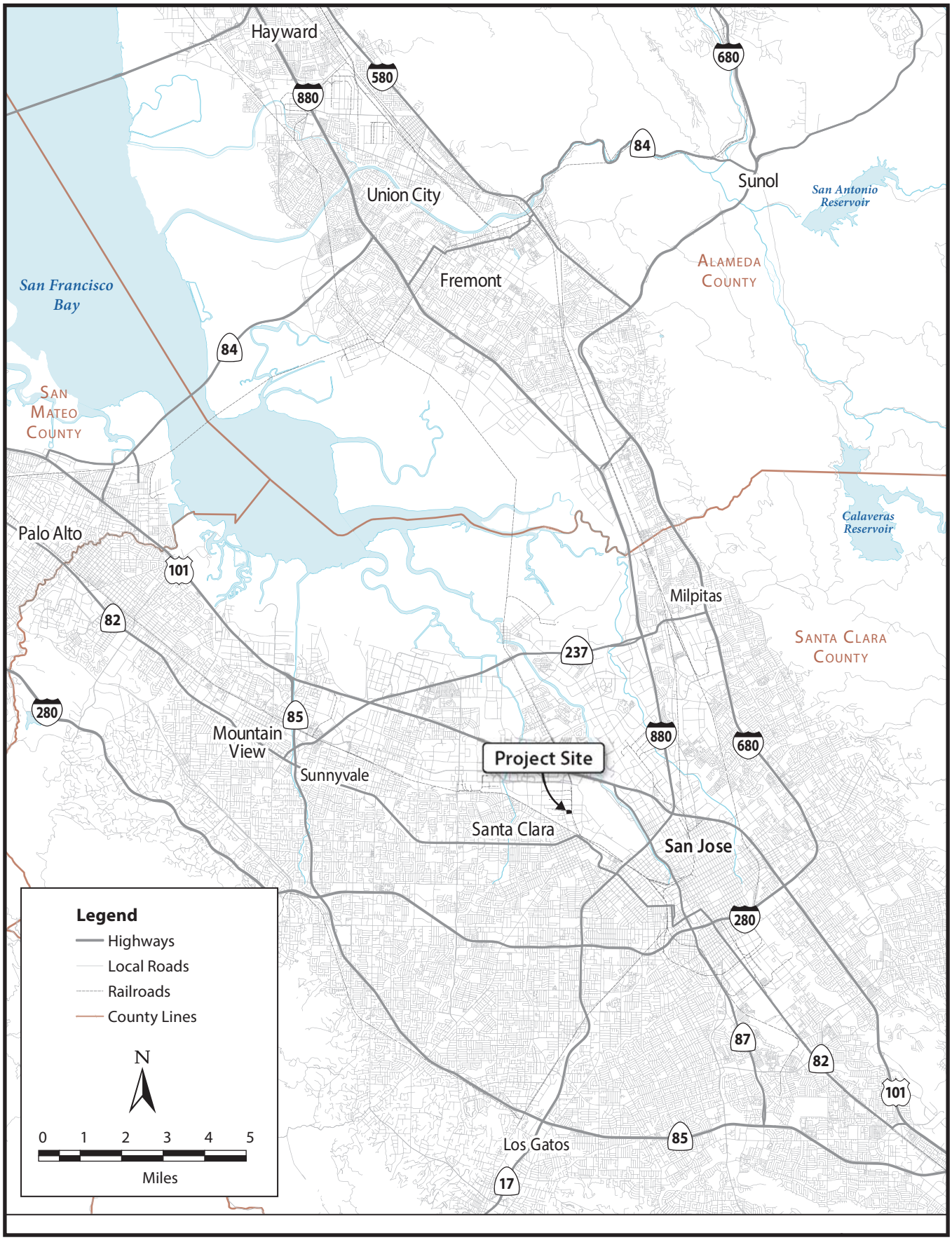
California Energy Commission 2018—Compilation of Data Clarification Questions and Responses for the McLaren Backup Generation Facility SPPE application review. June 2018. TN223744.

Vantage 2017—Vantage Data Centers, LLC. Application for Small Power Plant Exemption: McLaren Backup Generating Facility (17-SPPE-1). December 2017. TN22041-13.

Vantage 2018—Vantage Data Centers, LLC. Vantage Data Center's Revised SPPE Application for McLaren Backup Generating Facility (17-SPPE-1). May 21, 2018. TN223483.

PROJECT DESCRIPTION - FIGURE 4-1

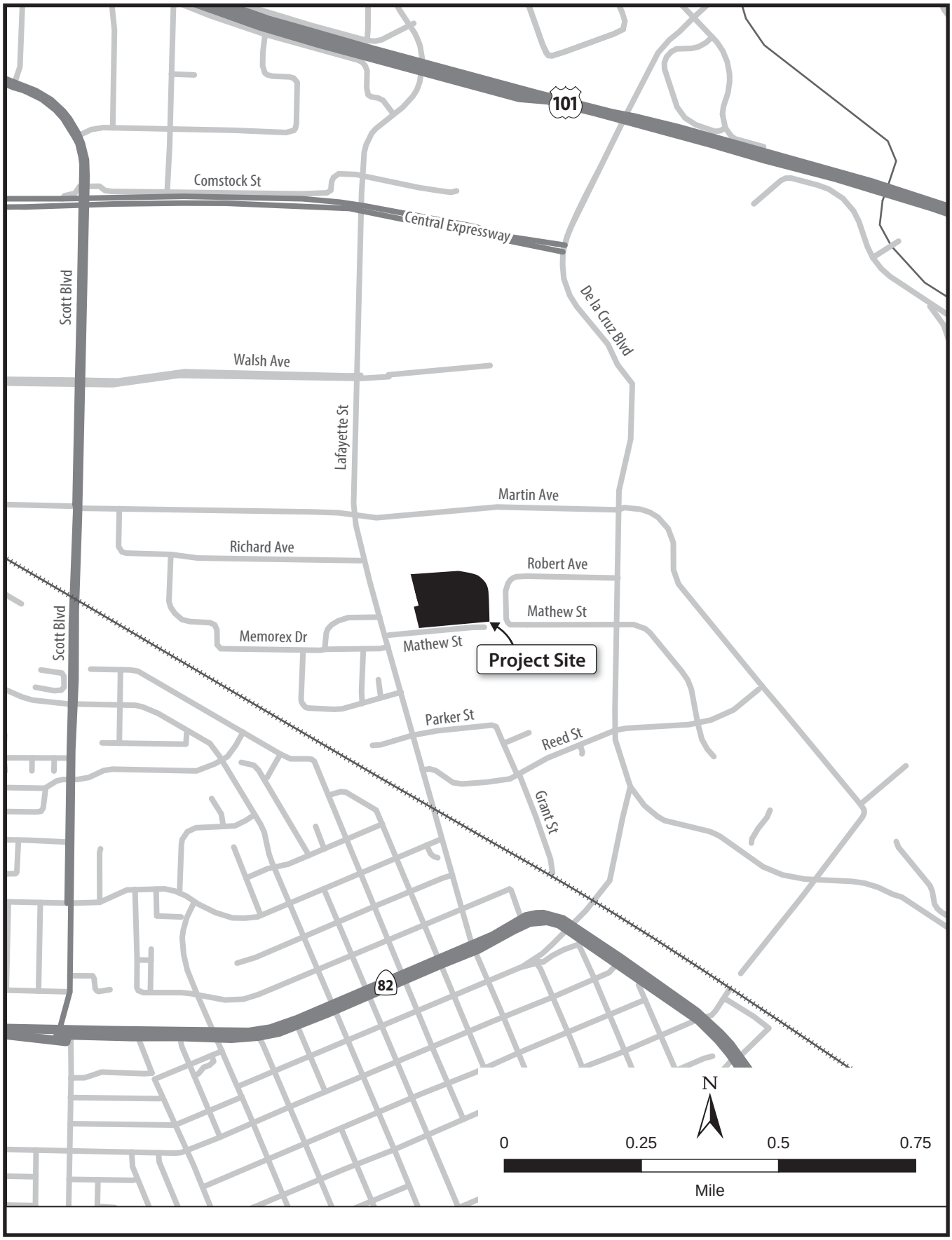
McLaren Backup Generating Facility - Regional Map



CALIFORNIA ENERGY COMMISSION - SITING, TRANSMISSION AND ENVIRONMENTAL PROTECTION DIVISION

SOURCE: City of Santa Clara IS/MND - Figure 2.0-1

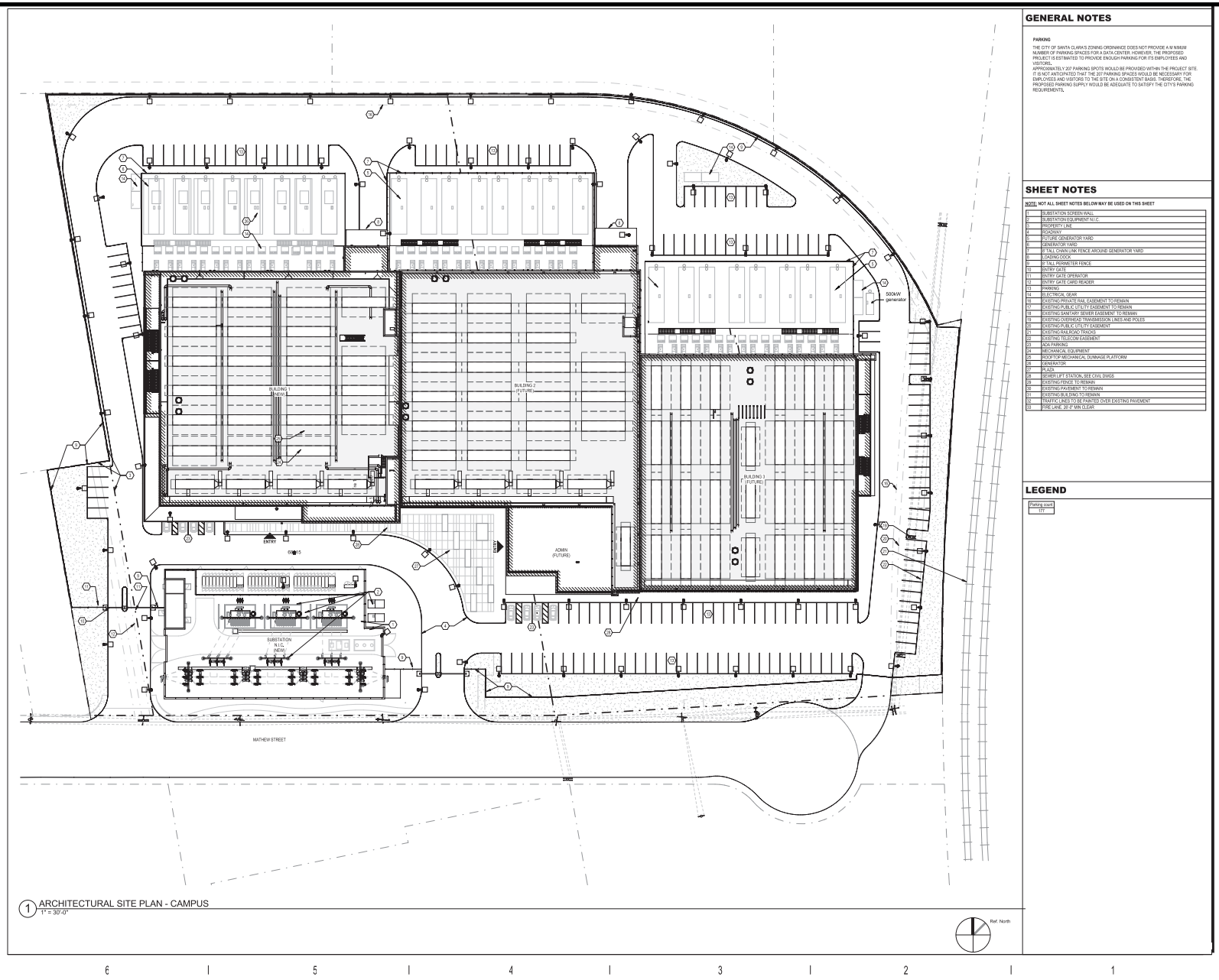
PROJECT DESCRIPTION - FIGURE 4-2
McLaren Backup Generating Facility - Vicinity Map



CALIFORNIA ENERGY COMMISSION - SITING, TRANSMISSION AND ENVIRONMENTAL PROTECTION DIVISION
SOURCE: City of Santa Clara IS/MND - Figure 2.0-2

PROJECT DESCRIPTION - FIGURE 4-3

McLaren Backup Generating Facility - Site Layout

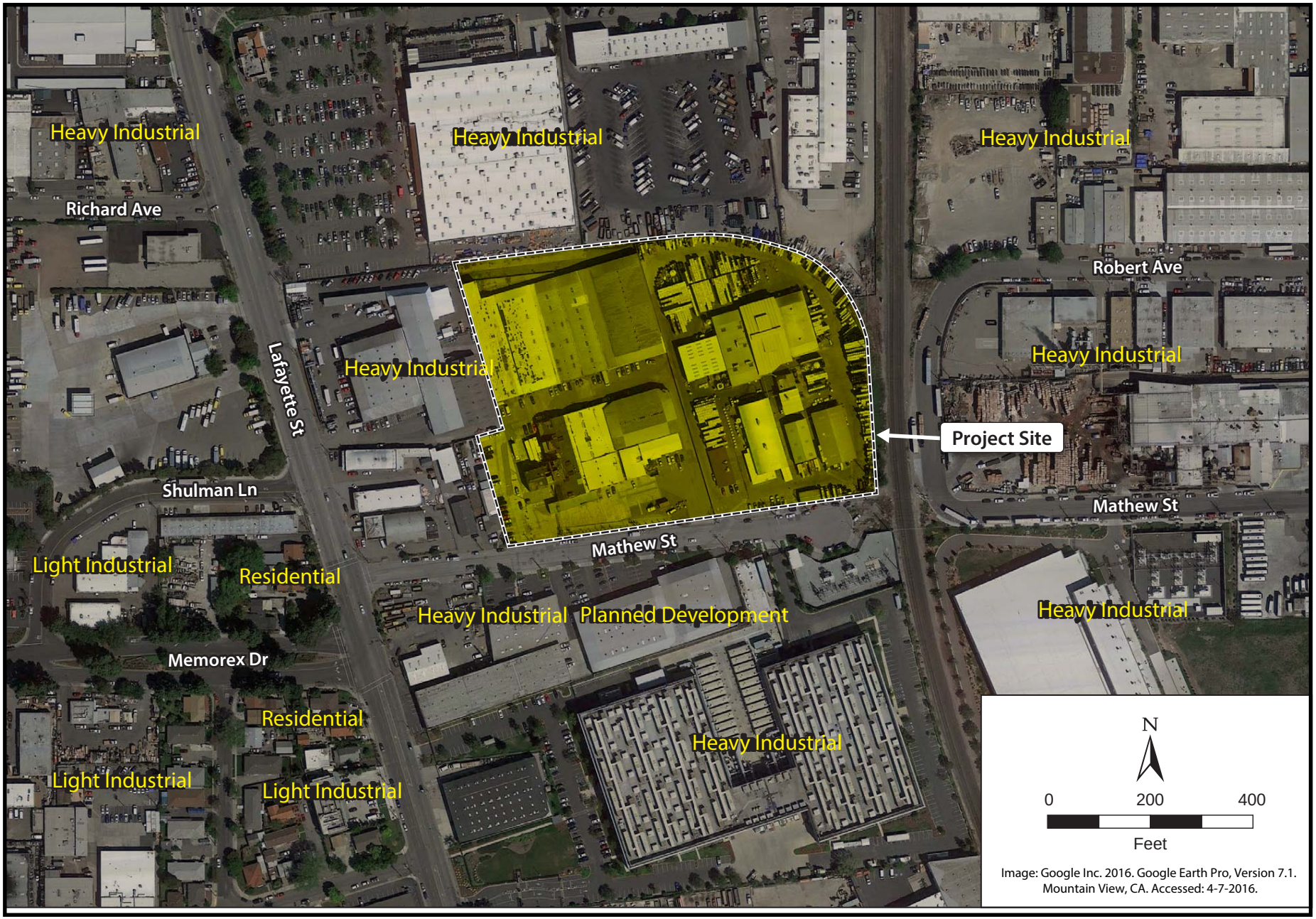


CALIFORNIA ENERGY COMMISSION - SITING, TRANSMISSION AND ENVIRONMENTAL PROTECTION DIVISION

SOURCE: Revised SPPE application - Revised Figure 2-1

PROJECT DESCRIPTION - FIGURE 4-4

McLaren Backup Generating Facility - Aerial Photograph and Surrounding Land Uses



PROJECT DESCRIPTION

CALIFORNIA ENERGY COMMISSION - SITING, TRANSMISSION AND ENVIRONMENTAL PROTECTION DIVISION

SOURCE: City of Santa Clara IS/MND - Figure 2.0-3

Section 5

Environmental Setting and Environmental Impacts

5. Environmental Setting and Environmental Impacts

5.1 Aesthetics

Would the project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a. Have a substantial adverse effect on a scenic vista?	☐	☐	☐	☒
b. Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a State scenic highway?	☐	☐	☐	☒
c. Substantially degrade the existing visual character or quality of the site and its surroundings?	☐	☐	☒	☐
d. Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	☐	☐	☒	☐

Environmental checklist established by CEQA Guidelines, Appendix G.

5.1.1 Setting

The project site consists of three parcels including a 0.26-acre parcel located at 825 Mathew Street at the westernmost portion, a 4.36-acre parcel located at 725 Mathew Street at the central portion, and a 4.35- acre parcel located at 651 Mathew Street at the easternmost portion. A portion of the project site (725 and 825 Mathew Street) is currently in an undeveloped state whereas previous buildings have been demolished and the site has been graded. Buildings at 651 Mathew Street are still standing and are being used. There are no trees and limited landscaping present on the project site. Refer to Figure 5.1-1 and 5.1-2 for photographs showing existing conditions at the project site.

Based on a site reconnaissance conducted by the city of Santa Clara as part of the previous Initial Study/Mitigated Negative Declaration (IS/MND), there are no unique or high quality visual resources on the project site itself.

Existing Landscape Setting and Viewer Characteristics

The site is bordered by Mathew Street to the south, the Southern Pacific Railroad to the east, and commercial and industrial properties to the north and west. The project site is primarily surrounded by industrial and commercial land uses. The surrounding buildings utilize a variety of building materials including metal, glass, wood, concrete, and stone. The area surrounding the project site is also characterized by low to mid-rise buildings set back from the roadway by physical barriers (e.g., fences, gates), large surface parking lots, and landscaped areas and trees located along street frontages. Overall, the visual character of the project site and surrounding area can be characterized as industrialized.

Sources of existing light and glare are abundant in the industrial environment of the area surrounding the project site including, but not limited to, street lights, parking lot lights, security lights, vehicular headlights, internal building lights, and reflective building surface and windows.

Regional Context. The project site and the surrounding area are relatively flat and, as a result, the site is viewable from only adjacent areas, particularly along adjacent roadways including Mathew Street, Robert Avenue, and Lafayette Street. No designated scenic vistas or view corridors are located within the city of Santa Clara; however, the *City of Santa Clara 2010-2035 General Plan Integrated*

Environmental Impact Report (Santa Clara General Plan EIR) lists the Santa Cruz Mountains, Diablo range, San Tomas Aquino Creek, and the Guadalupe River as "visual resources" within the city (City of Santa Clara, 2011). Views of the foothills to the east and west of the project site are obscured by existing buildings and landscaping trees. Due to distance, topography, and intervening landscaping trees, the project site cannot be seen in conjunction with San Tomas Aquino Creek (located approximately 1 mile west of the project site) and the Guadalupe River (located approximately 1 mile east of the project site). In addition, the project site is not within a scenic viewshed or along a scenic highway designated by the California Department of Transportation (Caltrans) Scenic Highway Program (Caltrans, 2016).

5.1.2 Environmental Impacts and Mitigation Measures

Aesthetics Impacts

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

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

NO IMPACT. The project site and the surrounding area are relatively flat and, as a result, views of the project site are limited to the immediately surrounding area, which is industrial in character. The project would not be visible from within the viewsheds of any of the visual resources in the city identified by the Santa Clara General Plan EIR due to existing development, vegetation, and distance. The project site is not within a scenic viewshed or along a scenic highway designated by Caltrans. In addition, according to the Santa Clara General Plan EIR, there are no scenic vistas within the city (City of Santa Clara, 2011). Therefore, the proposed project would have no potential to impact scenic vistas or view corridors.

Visible Plumes

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

Thermal power generators, such as the proposed 47 backup generators, produce high temperature exhausts that disperse quickly, thereby, minimizing the probability that visible plumes would form. Staff concluded that the environmental conditions (low ambient temperatures, high relative humidity) along with project operating conditions (high temperature exhausts) would be unlikely to cause formation of visible plumes above the project site. In addition, there are no unique, quality visual resources on the project site itself or the vicinity. No impact on visual resources would occur pertaining to visible plumes.

c. Would the project substantially degrade the existing visual character or quality of the site and its surroundings?

LESS THAN SIGNIFICANT IMPACT. There are no existing trees on the project site. Refer to Figure 5.1-1 and 5.1-2 for photographs showing existing on-site views. Approximately 120 new trees (e.g., London Plane, Coast Live Oak, Brisbane Box) would be planted around the perimeter of the project site and along the central access drive with implementation of the proposed project. In addition, shrubs and ground cover would be planted throughout the project site. Therefore, the project would not result in adverse aesthetic impacts related to tree or landscape removal because landscape cover would increase with implementation of the proposed project.

The project would construct buildings with higher height and density than surrounding industrial development. The height of the proposed buildings, as defined by the city of Santa Clara[3], would be 87.5 feet above ground surface. The project would construct metal screens which would be approximately 112 feet above ground surface. The metal screens would extend approximately 25 feet higher than the roof of the proposed buildings. The façades of the proposed buildings would consist primarily of plaster or other cementitious skin materials, metal, and glass. The design of the proposed buildings incorporates the use of varied surface materials and colors along with accent elements such as an exposed stair/elevator tower, vertical bands, and corrugated metal panels. These architectural elements would assist in creating visual interest and reduce the perceived height and bulk of the structures by breaking up the building's facade. In addition, Building 3, which would be closer to Mathew Street than Buildings 1 and 2, would be set back from the southern property line along Mathew Street by approximately 100 feet.

The proposed buildings would be one to two stories higher than the surrounding low to mid-rise industrial structures. However, the façades of the proposed buildings would be visually similar to the surrounding land uses which primarily include heavy industrial and commercial. The project area is developed with buildings that feature a mix of architectural styles and no particular dominant design aesthetic. The proposed buildings and surface parking lot design would be compatible with the mixed visual character of the surrounding area. Overall, the project would be generally consistent with adjacent industrial and commercial development in terms of visual character and quality.

The buildings and site improvements would be subject to the city of Santa Clara's design review process to ensure that the project would not adversely affect the visual quality of the project area and would conform to current architectural and landscaping standards. The project would be subject to review by the city of Santa Clara's Architectural Committee which would ensure the project conforms to Santa Clara's adopted Community Design Guidelines. The guidelines were developed to support community aesthetic values, preserve neighborhood character, and promote a sense of community and place throughout the city. Therefore, implementation of the proposed project would not have the potential to substantially degrade the existing visual quality or character of the site or its surroundings.

[3] The City of Santa Clara defines the "Height of buildings" as the vertical distance from the "grade" to the highest point of the coping of a flat roof, or to the deck line of a mansard roof, or to the highest gable of a pitched or hipped roof.

Construction Activities

The project would involve construction activities for three new 87.5-foot tall data center buildings, with supporting parking and an electrical substation along with 47 backup generators located in generation yards at three separate locations on the project site, and 112-foot tall metal screens. The project site would be enclosed with temporary construction fencing that would obscure views of on-site storage of soils, pipes, machinery, and building materials. Further, visual impacts during construction would be temporary and would cease upon completion of construction activities. Therefore, construction of the project would not substantially degrade the existing visual quality or character of the project site or its surroundings.

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

LESS THAN SIGNIFICANT IMPACT. The proposed project would include outdoor security and wayfinding lighting on the project site located along walkways, driveways, entrance areas, and in the surface parking areas. Proposed outside lighting would be comparable in brightness to the existing ambient lighting in the surrounding area. However, implementation of the proposed project would increase the amount of lighting on the project site, compared to existing outdoor lighting, which would increase the overall level of illumination in the area. The design of exterior facades of the proposed buildings would be subject to the city of Santa Clara's design review process prior to issuance of building permits to ensure the project would not create a substantial new source of light or glare for adjacent businesses or persons traveling on nearby roadways. Typical design requirements include directional and/or shielded lights to minimize brightness and glare of the lights, which would be required as part of the proposed project. In addition, the exterior surfaces of the proposed buildings would utilize low-glare glazing and would not be a significant source of glare during daytime hours. Lastly, the project would not include any illuminated signage.

Previously Identified Mitigation Measures: None. Although as noted on page 26 of the city of Santa Clara's IS/MND, the buildings and site improvements would be subject to the city's design review process to ensure that the project would not adversely affect the visual quality of the area and would conform to current architectural and landscaping standards.

New Proposed Mitigation Measures: None

5.1.3 References

City of Santa Clara. 2011. City of Santa Clara 2010-2035 General Plan Integrated Final Environmental Impact Report. January. Available: http://santaclaraca.gov/home/showdocument?id=12900. Accessed: January 19, 2018.

Caltrans. 2016. California Scenic Highway Program - Scenic Highway Routes. Available: http://www.dot.ca.gov/hq/LandArch/16_livability/scenic_highways/index.htm. Accessed: January 19, 2018.

Vantage Data Centers, LLC. 2018. Vantage Data Center's Revised SPPE Application for McLaren Backup Generating Facility. TN# 223483. May 21, 2018.

AESTHETICS - FIGURE 5.1-1
McLaren Backup Generating Facility - Existing On-Site Views (651 Mathew Street)

View A: View of existing buildings looking at 651 Mathew Street



View B: View of existing buildings looking at 651 Mathew Street



CALIFORNIA ENERGY COMMISSION - SITING, TRANSMISSION AND ENVIRONMENTAL PROTECTION DIVISION
SOURCE: Energy Commission Staff Site Visit

AESTHETICS - FIGURE 5.1-2
McLaren Backup Generating Facility - Existing On-Site Views (725 and 825 Mathew Street)

View A: View of buildings demolished and site rough graded looking at 725 and 825 Mathew Street



View B: View of buildings demolished and site rough graded looking at 725 Mathew Street



CALIFORNIA ENERGY COMMISSION - SITING, TRANSMISSION AND ENVIRONMENTAL PROTECTION DIVISION
SOURCE: Energy Commission Staff Site Visit

5.2 Agriculture and Forestry Resources

AGRICULTURE AND FORESTRY RESOURCES
In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Department of Conservation as an optional model to use in assessing impacts on agriculture and farmland. In determining whether impacts to forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by the California Department of Forestry and Fire Protection regarding the state's inventory of forest land, including the Forest and Range Assessment Project and the Forest Legacy Assessment Project; and forest carbon measurement methodology provided in Forest Protocols adopted by the California Air Resources Board.

Would the project:	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less than Significant Impact	No Impact
a. Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	☐	☐	☐	☒
b. Conflict with existing zoning for agricultural use, or a Williamson Act contract?	☐	☐	☐	☒
c. Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?	☐	☐	☐	☒
d. Result in the loss of forest land or conversion of forest land to non-forest use?	☐	☐	☐	☒
e. Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?	☐	☐	☐	☒

Environmental checklist established by CEQA Guidelines, Appendix G.

5.2.1 Setting

The McLaren Data Center (MDC) project site is developed with industrial warehouse, manufacturing, office, and surface parking uses. Demolition of existing facilities was initiated to prepare for construction of the first of three planned data center buildings and its backup generators.

The site is within an extensive urban area designated as "Urban and Built-up Land" on the Santa Clara County Important Farmland 2014 map (California Department of Conservation 2017). This designation applies to areas occupied by structures with a building density of at least one unit to 1.5 acres, or approximately six structures to a 10-acre parcel. Common uses include residential, industrial, commercial, and institutional facilities. The region encompassing the project site does not include farmland of any type.

The site and surrounding area is not designated as forest land, and there are no forest resources or timberland present in the region. The site is zoned as MH (Heavy Industrial) and is primarily surrounded by industrial and commercial uses.

5.2.2 Environmental Impacts and Mitigation Measures

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

NO IMPACT. The reconfigured project site for the McLaren Backup Generating Facility is planned within the boundaries of the site previously analyzed in the city of Santa Clara's Initial Study/Mitigated Negative Declaration on the MDC project.

The project site is designated as "Urban and Built-up Land" on the *Santa Clara County Important Farmland 2014* map. The project would not convert designated farmland to non-agricultural use, and no impact would occur.

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

NO IMPACT. The project site is in an urban area, and no farmland is located in the site vicinity. Therefore, the site is not subject to a Williamson Act contract, and no impact would occur.

c. Would the project conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?

NO IMPACT. The project site is zoned as MH (Heavy Industrial), which permits manufacturing, processing, assembling, research, wholesale, or storage uses. The project area is developed with various urban uses, and no land is zoned for forest land, timberland, or timberland production. No impact would occur.

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

NO IMPACT. The project site does not contain forest land and is not in an area where forest land is present; therefore, no impact would occur.

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

NO IMPACT. The project site would not cause other changes to the environment that could convert Farmland or forest land to other uses. The site was previously developed for industrial uses, and the project would constitute a new industrial use. No impact would occur.

Previously Identified Mitigation Measures: None.

New Proposed Mitigation Measures: None.

5.2.3 References

California Department of Conservation 2017 — Farmland Mapping and Monitoring Program. County PDF Maps. Santa Clara County. Available at: ftp://ftp.consrv.ca.gov/pub/dlrp/FMMP/pdf/2014/scl14.pdf. Accessed January 24, 2018.

5.3 Air Quality

AIR QUALITY Where available, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the following determinations. Would the project:	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less than Significant Impact	No Impact
a. Conflict with or obstruct implementation of the applicable air quality plan?	☐	☐	☒	☐
b. Violate any air quality standard or contribute substantially to an existing or projected air quality violation?	☐	☐	☒	☐
c. Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable Federal or State ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)?	☐	☐	☒	☐
d. Expose sensitive receptors to substantial pollutant concentrations?	☐	☐	☒	☐
e. Create objectionable odors affecting a substantial number of people?	☐	☐	☒	☐

Environmental checklist established by CEQA Guidelines, Appendix G.

5.3.1 Setting

Criteria Pollutants. Air quality is determined by measuring ambient concentrations of criteria pollutants. Air pollutants are those pollutants for which acceptable levels of exposure can be determined and for which standards have been set. The degree of air quality degradation is then compared to the current National and California Ambient Air Quality Standards (NAAQS and CAAQS). Unique meteorological conditions in California and differences of opinion by medical panels established by the California Air Resources Board (ARB) and the U.S. Environmental Protection Agency (U.S. EPA) cause considerable diversity between State and Federal standards currently in effect in California. In general, the CAAQS are more stringent than the corresponding NAAQS. The standards currently in effect in California are shown in **Air Quality Table 5.3-1a**.

Air Quality Table 5.3-1a. National and California Ambient Air Quality Standards

Pollutant	Averaging Time	California Standards	National Standards
Ozone	1-hour 8-hour	0.09 ppm 0.070 ppm	— 0.075 ppm
Respirable Particulate Matter (PM_{10})	24-hour Annual Mean	50 µg/m^3 20 µg/m^3	150 µg/m^3 —
Fine Particulate Matter ($PM_{2.5}$)	24-hour Annual Mean	— 12 µg/m^3	35 µg/m^3 15 µg/m^3
Carbon Monoxide (CO)	1-hour 8-hour	20 ppm 9.0 ppm	35 ppm 9.0 ppm
Nitrogen Dioxide (NO_2)	1-hour Annual Mean	0.18 ppm 0.030 ppm	— 0.053 ppm
Sulfur Dioxide (SO_2)	1-hour 24-hour 3-hour Annual Mean	0.25 ppm 0.04 ppm — —	— 0.14 ppm 0.5 ppm 0.03 ppm

Notes: ppm=parts per million; µg/m3= micrograms per cubic meter; "—" =no standard
Source: CARB (http://www.arb.ca.gov/research/aaqs/aaqs2.pdf), November, 2008.

Attainment Status and Air Quality Plans. The U.S. EPA, California Air Resource Board (ARB), and the local air district classify an area as attainment, unclassified, or nonattainment. The classification depends on whether the monitored ambient air quality data show compliance, insufficient data available, or non-compliance with the ambient air quality standards, respectively. The proposed McLaren Data Center Project (MDCP) would be located within Santa Clara County, under the jurisdiction of the Bay Area Air Quality Management District (BAAQMD). **Air Quality Table 5.3-1b** summarizes attainment status for the criteria pollutants in the San Francisco Bay Area Air Basin (SFBAAB) with both the federal and state standards.

Air Quality Table 5.3-1b. Attainment Status for San Francisco Bay Area Air Basin

Pollutant	Federal Designation	State Designation
Ozone (1-hour)	No Federal Standard	Nonattainment
Ozone (8-hour)	Nonattainment (Marginal)	Nonattainment
PM_{10}	Unclassified	Unclassified
$PM_{2.5}$	Nonattainment	Nonattainment
CO	Attainment	Attainment
NO_2	Attainment	Attainment
SO_2	Attainment	Attainment

Source: http://www.baaqmd.gov/research-and-data/air-quality-standards-and-attainment-status. Accessed January 2018

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

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

Regulatory Background

Bay Area 2010 Clean Air Plan Consistency. The 2010 Clean Air Plan (CAP) is based on Association of Bay Area Governments' (ABAG) projections. Under BAAQMD's 2011 CEQA Guideline methodology, for consistency with the 2010 CAP a project or plan must demonstrate that vehicle miles traveled (VMT) or vehicle trips may not exceed projected population increases and that the project or plan implements transportation control measures (TCMs) as applicable. This approach was revised in the 2012 BAAQMD CEQA Guidelines, which holds that a project would be considered consistent with the 2010 CAP if the project would not result in significant and unavoidable air quality impacts after the application of all feasible mitigation. The BAAQMD prepared and adopted the Bay Area 2010 CAP. The 2010 CAP updates the most recent ozone plan, the 2005 Ozone Strategy. Unlike previous Bay Area CAPs, the 2010 CAP is a multi-pollutant air quality plan addressing four categories of air pollutants:

1. Ground-level ozone and the key ozone precursor pollutants (reactive organic gases and nitrogen oxide), as required by state law;

2. Particulate matter, primarily PM2.5, as well as the precursors to secondary PM2.5;

3. TACs; and

4. Greenhouse gases.

According to the City of Santa Clara's Initial Study MND, the project would not result in substantial growth that would be inconsistent with ABAG projections, nor would it result in emissions in excess of BAAQMD thresholds identified in **Air Quality Table 5.3-2**, below. Even with the addition of 18 emergency engines, according to **Air Quality Table 5.3-6 (Daily)** and **Air Quality Table 5.3-7 (Annual)**, the cumulative emissions from the entire McLaren Data Center are expected to be below these thresholds. Thus, the project would not conflict with the 2010 CAP.

BAAQMD 2017 CEQA Guidelines. The following analysis is based upon the general methodologies in the most recent BAAQMD CEQA Air Quality Guidelines (dated May 2017 [BAAQMD 2017b]) and numeric thresholds for the San Francisco Bay Basin, including the thresholds listed in Air Quality Table 5.3-2.

Federal, State, and Regional. Federal, state, and regional agencies regulate air quality in the Bay Area Air Basin, within which the project site is located. At the federal level, the USEPA is responsible for overseeing implementation of the federal Clean Air Act and its subsequent amendments (CAA). ARB is the state agency that regulates mobile sources throughout the state and oversees implementation of the state air quality laws and regulations, including the California Clean Air Act. As required by the federal Clean Air Act, National Ambient Air Quality Standards (NAAQS) have been established for six major air pollutants: CO, NO_2, O_3, particulate matter, including PM10 and PM2.5, sulfur oxides, and lead. The State of California also established the California Ambient Air Quality Standards (CAAQS).

Toxic Air Contaminants (TACs) Significance Thresholds. For evaluation purposes, TACs are separated into carcinogens and non-carcinogens based on the nature of the physiological effects associated with exposure to the pollutant. Therefore, there are two kinds of thresholds for TACs. Cancer risk is expressed as excess cancer cases per one million exposed individuals, typically over a lifetime of exposure. Acute and chronic exposure to non-carcinogens is expressed as a hazard index (HI), which is the ratio of expected exposure levels to an acceptable reference exposure levels (BAAQMD 2017b, Section 5.1).

The significance thresholds for TACs and PM2.5 applied to the siting of a new source are listed in **Air Quality Table 5.3-2** and summarized in the following text (Vantage 2018a, section 1.3 and BAAQMD 2017b, Section 2.3):
Single Source Impacts:

- An excess lifetime cancer risk level of more than 10 in one million;
- A noncancer chronic HI greater than 1.0;
- A noncancer acute HI greater than 1.0; and
- An incremental increase in the annual average PM2.5 concentration of greater than 0.3 micrograms per cubic meter (µg/m3).

If a project does not exceed the identified significance thresholds, its emissions would not be cumulatively considerable. For reference, the BAAQMD 2017 cumulative CEQA significance thresholds are also

summarized. A project would have a cumulative considerable impact if the aggregate total of all past, present, and foreseeable future sources within a 1,000 foot distance from the fence line of a source plus the contribution from the project, exceeds the following:

- An excess lifetime cancer risk level of more than 100 in one million;
- A noncancer chronic HI greater than 10.0; and
- An annual average PM2.5 concentration of greater than 0.8 micrograms per cubic meter (μg/m3).

For assessing community risks and hazards, a 1,000 foot distance is recommended around the project property boundary. BAAQMD recommends that any proposed project that includes the siting of a new source or receptor assess associated impacts within 1,000 feet, taking into account both individual and nearby cumulative sources (i.e., proposed project plus existing and foreseeable future projects). Cumulative sources represent the combined total risk values of each individual source within the 1,000-foot evaluation zone (BAAQMD 2017b, Section 5.1.3).

Federal. Clean Air Act section 112 (Title 42, U.S. Code section 7412) addresses emissions of hazardous air pollutants (HAPs). This act requires new sources that emit more than ten tons per year (tpy) of any specified HAP or more than 25 tons per year of any combination of HAPs to apply Maximum Achievable Control Technology (MACT).

State and Regional. TACs are primarily regulated through state and local risk management programs. These programs are designed to eliminate, avoid, or minimize the risk of adverse health effects from exposures to TACs. A chemical becomes a regulated TAC in California based on designation by the California Office of Environmental Health Hazard Assessment (OEHHA) (BAAQMD 2017b, Section 5.1).

California Health and Safety Code sections 44360 to 44366 (Air Toxics "Hot Spots" Information and Assessment Act—AB 2588) require that, based on results of a health risk assessment (HRA) conducted per ARB (California Air Resources Board) / OEHHA guidelines, toxic contaminants do not exceed acceptable levels.

As part of its jurisdiction under Air Toxics Hot Spots Program (Health and Safety Code Section 44360(b)(2)), OEHHA derives cancer potencies and reference exposure levels (RELs) for individual air contaminants based on the current scientific knowledge that includes consideration of possible differential effects on the health of infants, children and other sensitive subpopulations, in accordance with the mandate of the Children's Environmental Health Protection Act (Senate Bill 25, Escutia, Chapter 731, Statutes of 1999, Health and Safety Code Sections 39669.5 et seq.). The specific toxicity values of each particular TAC as identified by OEHHA are also listed in BAAQMD's Regulation 2, Rule 5: New Source Review of Toxic Air Contaminants (BAAQMD 2017b, Section 5.1).

Sections of California Public Resource Code require a quantitative health risk assessment for new or modified sources, including power plants that emit one or more toxic air contaminants (TACs) (California Public Resource Code section 25523[a]; Title 20, California Code of Regulations, sections 1752.5, 2300–2309 and Division 2 Chapter 5, Article 1, Appendix B, Part [1]; California Clean Air Act, Health and Safety Code section 39650, et seq.).

Regional and Local Criteria Pollutants.

Violations of ambient air quality standards are based on air pollutant monitoring data and are evaluated for each air pollutant.

When permitting emergency diesel engines, the BAAQMD typically limits only emissions resulting from non-emergency use, since emergency use of generators is not limited under BAAQMD regulations. In this case, engine emissions are based on nonemergency operations (primarily the schedule of "readiness" testing that is required for the generators) and the planned number of hours of non-emergency operations (in accordance with BAAQMD Regulation 2, Rule 5). Consistent with BAAQMD permitting methods, no load factor is applied. Annual non-emergency operation is limited to 50 hours, as stated in the Airborne Toxic Control Measure (ATCM) for Stationary Toxic Compression Ignition Engines (Section 93115, Title 17, CCR). Annual emissions were averaged over a year assuming 50 hours of operation per engine, consistent with the ATCM limit. **Air Quality Tables 5.3-6 (Daily)** and **5.3-7 (Annual)** present the daily and annual emissions, respectively, from non-emergency operation of the backup engines, with annual GHG emissions also presented in **GHG Table 5.7-3**. Operating emissions for all criteria pollutants would be well below their respective BAAQMD significant thresholds when the project is operating for readiness testing only. A discussion of project criteria pollutant emissions and assumptions are discussed later in this section.

Toxic Air Contaminants (TACs). Toxic air contaminants (TACs) are different from criteria air pollutants such as ground-level ozone, particulate matter, carbon monoxide, nitrogen dioxide, sulfur dioxide and lead. There are no ambient standards for toxic air contaminants (TACs) and a health risk assessment (HRA) is conducted to evaluate whether risks of exposure to TACs create an adverse impact.

The health effects associated with TACs are quite diverse and generally are assessed locally, rather than regionally. TACs could cause long-term health effects such as cancer, birth defects, neurological damage, asthma, bronchitis or genetic damage; or short-term effects such as eye watering, respiratory irritation (a cough), running nose, throat pain, and headaches (BAAQMD 2017b, Section 5.1). Numerous other health effects also have been linked to exposure to TACs, including heart disease, Sudden Infant Death Syndrome (SIDS), respiratory infections in children, lung cancer, and breast cancer (OEHHA, 2015).

TACs considered in evaluating the health impacts of the proposed MBGF are those included in BAAQMD Rule 2-5, New Source Review of Toxic Air Contaminants (Vantage 2018a, Section 1.3). The TACs evaluated in the HRA were diesel particulate matter (DPM), speciated total organic gases (TOG) in diesel exhaust, and speciated evaporative and exhaust TOGs from gasoline vehicles (Vantage 2018a, Section 3.1). The TACs from speciated TOG include 1,3-Butadiene, Acetaldehyde, Benzene, Ethylbenzene, Formaldehyde, n-Hexane, Methanol, Methyl Ethyl Ketone, Napthalene, Propylene, Styrene, Toluene, and Xylene (Vantage 2018a, Section 4.3).

Local Community Risks/Toxic Air Contaminants and Fine Particulate Matter. The cancer risk, chronic, and acute hazards in the HRA for the construction and operation of MBGF were based on TAC emissions from the MBGF. Modeled sources of TACs include on-road construction traffic, off-road construction equipment, and diesel-powered emergency generators. Accordingly, the chemicals to be evaluated in the HRA were diesel particulate matter (DPM), speciated total organic gases (TOG) in diesel exhaust, and speciated evaporative and exhaust TOGs from gasoline vehicles. DPM emissions were assumed to be equal to exhaust PM10 from on- and off-road construction equipment, and exhaust PM10 from backup

diesel engines during operation. Other TACs are speciated TOGs from on-road emissions from gasoline vehicles (Vantage 2018a, Section 3.1). These emissions estimates were used to compare to BAAQMD thresholds and as inputs to the HRA (Vantage 2018a, Section 2).

Consistent with BAAQMD and OEHHA Hot Spots guidance, health impacts were based on emissions of toxic air contaminants (TACs). Concentrations of TACs were estimated using AERMOD, a Gaussian air dispersion model recommended by United States Environmental Protection Agency (USEPA), California Air Resources Board (ARB), and BAAQMD for use in preparing environmental documentation for stationary sources. Health impacts were calculated using the TAC concentrations, TAC toxicities and exposure assumptions consistent with the 2015 OEHHA Hot Spots guidance (Vantage 2018a, Executive Summary).

Sensitive Receptors. Sensitive receptors, such as infants, the aged, and people with specific illnesses or diseases are the subpopulations which are more sensitive to the effects of toxic substance exposure (ARB 2005). Examples of receptors include residences, schools and school yards, parks and play grounds, daycare centers, nursing homes, and medical facilities. Residences could include houses, apartments, and senior living complexes. Medical facilities could include hospitals, convalescent homes, and health clinics. Playgrounds could be play areas associated with parks or community centers (BAAQMD 2017b, Section 5.2.5). The potential sensitive receptor locations evaluated in the HRA for MBGF include (BAAQMD 2012 and Vantage 2018a, Section 1.3):

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

The applicant conducted a sensitive receptor search within the 1,000-foot zone of influence and determined that the only sensitive receptors are residential dwellings located to the southwest of the project site. The applicant also included a nearby soccer facility directly south of the project site as a potential location for sensitive receptors.

Greenhouse Gases. Please see the **Greenhouse Gas Section** of this document for more detailed project related emissions as they relate to greenhouse gases.

Air Quality Table 5.3-2BAAQMD Thresholds Of Significance

Pollutant	Construction	Operation-Related	
	Average Daily Emissions (pounds/day)	Average Daily Emissions (pounds/day)	Max Annual Emissions (tons/year)
ROG, NOx	54	54	10
PM10	82 (exhaust)	82	15
PM2.5	54 (exhaust)	54	10
Fugitive Dust	BMPs	None	None
Risk and Hazards for New Sources and Receptors (Project)	Same as Operational Threshold	Increased cancer risk of >10.0 in one million Increased non-cancer risk of > 1.0 Hazard Index (chronic or acute) Ambient $PM_{2.5}$ increase: > 0.3 μ/m^3 [Zone of influence: 1,000-foot radius from property line of source or receptor]	
Risk and Hazards for New Sources and Receptors (Cumulative)	Same as Operational Threshold	Increased cancer risk of >100 in one million (from all local sources) Increased non-cancer risk of > 10.0 Hazard Index (from all local sources) (chronic) Ambient $PM_{2.5}$ increase: > 0.3 μ/m^3 (from all local sources) [Zone of influence: 1,000-foot radius from property line of source or receptor]	Risk and Hazards for New Sources

Sources: City of Santa Clara IS/MND; BAAQMD 2017b, California Environmental Quality Act Air Quality Guidelines, Table 2-1.

Proposed Mitigation Measures

The City of Santa Clara has a list in Table 1, page 2 of the Determination section of the IS/MND, which indicates a mitigation condition **MM AIR-1** and details the following mitigation measures:

Implement BAAQMD Basic Construction Mitigation Measures to Reduce Construction-Related Emissions. The project applicant shall require all construction contractors to implement the basic construction mitigation measures recommended by BAAQMD, which would reduce fugitive dust emissions to a less-than-significant level. Emission reduction measures shall include, at a minimum, the following measures. Additional measures may be identified by BAAQMD or contractor as appropriate.

- All exposed surfaces (e.g., parking areas, staging areas, soil piles, graded areas, and unpaved access roads) shall be watered two times per day.
- All haul trucks transporting soil, sand, or other loose material offsite shall be covered.
- All visible mud or dirt track-out onto adjacent public roads shall be removed using wet power vacuum street sweepers at least once per day. The use of dry power sweeping is prohibited.
- All vehicle speeds on unpaved surfaces shall be limited to 15 mph.
- All roadways, driveways, and sidewalks to be paved shall be completed as soon as possible. Building pads shall be laid as soon as possible after grading unless seeding or soil binders are used.
- Idling times shall be minimized either by shutting equipment off when not in use or reducing the maximum idling time to 5 minutes (as required by the California airborne toxics control measure Title

13, Section 2485 of California Code of Regulations [CCR]). Clear signage shall be provided for construction workers at all access points.

- All construction equipment shall be maintained and properly tuned in accordance with manufacturer's specifications. All equipment shall be checked by a certified visible emissions evaluator.
- A publicly visible sign shall be posted with the telephone number and name of the person to contact at the lead agency regarding dust complaints. This person shall respond and take corrective action within 48 hours. BAAQMD's phone number shall also be visible to ensure compliance with applicable regulations.

BAAQMD considers fugitive dust emissions to be significant without Best Management Practices (BMPs). Consequently, dust emissions generated by project construction activities would be potentially significant. The mitigation measures as outlined in the BAAQMD-recommended BMPs to control fugitive dust listed above, have been determined by staff to be sufficient. Energy Commission staff will not be recommending any additional mitigation measures.

5.3.2 Environmental Impacts and Mitigation Measures

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

LESS THAN SIGNIFICANT IMPACT. The McLaren Data Center Project site is within the BAAQMD, which is the agency primarily responsible for assuring that the federal and state ambient air quality standards are met and maintained in the San Francisco Bay Area. The BAAQMD has permit authority over stationary sources, acts as the primary reviewing agency for environmental documents, and develops regulations that must be consistent with or more stringent than federal and state air quality laws and regulations. As discussed in section 5.3.1 of the Regulatory Setting, Applicable Plans, Policies, and Regulations above and herein, the project is not expected to conflict or obstruct implementation of applicable air quality plans.

b. Would the project violate any air quality standard or contribute substantially to an existing or projected air quality violation?

LESS THAN SIGNIFICANT IMPACT. Staff reviewed the application for the McLaren SPPE. The following sections address this question in detail. **Construction** emissions with the implementation of the identified mitigation measure during the construction phase would control fugitive dust and reduce this impact to a less-than-significant level. **Operating** emissions for all criteria pollutants are expected to be below their respective BAAQMD significant thresholds. The project's criteria pollutant emissions and assumptions are discussed below.

Nitrogen Oxides

Operations

Nitrogen oxide emission impacts were evaluated by the applicant's air quality consultant, Ramboll (Vantage 2018e). Ramboll states: *"For the 1-hour NO2 NAAQS and CAAQS analyses, a typical operating scenario was modeled that includes one 4-hour load banking test that is conducted for one generator at a time, once annually, for maintenance and readiness testing. During this 4-hour test, the generator is ramped up in load. The first hour of testing is at 50% load, the second hour is at 75% load, and the last two hours are at 100% load. Generators are also testing monthly for 5 minutes at 0% load, but this scenario was not modeled since the annual 4-hour test is the more conservative scenario."*

NO_2 impacts were evaluated in detail by Ramboll. The BAAQMD is expected to require air quality modeling to show compliance with state and national ambient air quality standards (CAAQS and NAAQS) for projects that exceed major source thresholds under New Source Review per District Regulation 2, Rule 2. Although project emissions are below the thresholds of significance, except NOx, an air quality modeling evaluation is necessary to determine compliance with California's 1-hour CAAQS and the U.S. EPA adopted 1-hour NO_2 NAAQS. This assessment was presented in the Air Quality and Greenhouse Gas Technical Report (AQTR) prepared by Ramboll.

For comparison with the NAAQS and CAAQS, the most conservative hourly emission rate was used assuming one hour of testing at 100 percent load. The AQTR evaluated a variety of operating assumptions and staff has reviewed the various loads and the associated emissions of NOx with applied expected actual worst case emissions and results can be seen in the section below in **Air Quality Table 5.3-3**. The highest NOx emission rate from testing would be assumed to occur during the once a year 4-hour test. Since all of the emissions (excluding emergency situations) occur during testing and maintenance, the maximum annual NOx emissions from the project have been based on an average daily and annual estimated emission rate at 100 percent load assumed at 50 hours per year per engine, as discussed above, even though it is expected the emergency engines would typically only be operated for readiness testing and maintenance purposes for 5 hours per year per engine.

Of the types of maintenance tests projected, most are expected to operate for only five minutes; these short duration tests will occur at zero (0) percent load. The emissions resulting from a five-minute test are expected to be much less than the 4-hour test and therefore are not shown in this analysis.

The modeling that has been completed by Ramboll for the McLaren Data Center was supplemented as described below to fully address compliance with CAAQS and NAAQS. As noted above, project operation would be limited to intermittent maintenance testing of the diesel-fueled engines. Emergency generator engines would be tested one at a time for approximately 5 minutes each per month and once a year for a 4-hour maintenance test for a combined total operation of approximately 230 hours[3] per year.

The applicant used AERMOD (version 16216r) to perform a refined impact analysis to evaluate the project's effect on the 1-hour NO_2 California Ambient Air Quality Standard (CAAQS) and National Ambient Air Quality Standard (NAAQS). To attain the 1-hour NO_2 CAAQS, the maximum 1-hour NO_2

[3] 47 engines tested at 5 minutes each per month + testing each engine for 4-hours once per year (47 engines*5 minutes*11+47 engines*4 hours = 231 hours.)

concentration must not exceed 339 µg/m^3; to attain the 1-hour NO_2 NAAQS, the 3-year average of the annual 98th percentile of the 1-hour daily maximum concentrations must not exceed 188 µg/m^3.

While the evaluation needed for the CAAQS is relatively straightforward, the statistical nature of the NAAQS makes evaluation of a project with the extreme intermittency of the proposed project extremely difficult to conduct in a meaningful way. The applicant's air quality consultant, Ramboll, recognized this difficulty and held a number of conference calls with Energy Commission staff in an effort to produce a meaningful evaluation of the proposed project.

Staff reviewed the applicant's NO_2 impact analysis from the previous project configuration, and provided comments to the applicant and their consultants. In this newly revised SPPE submittal (Vantage 2018e) and responses to staff's additional comments (California Energy Commission 2018b), the applicant and their consultant's analysis for the additional engines and engine size change have incorporated staff's guidance into their revised NO_2 modeling. Staff has reviewed the revised submittal and air quality modeling as well as the additional responses. Staff concurs with the approach and results docketed (Vantage 2018f). The approach provided by the applicant's consultant is described below, and is similar to what was previously done by staff.

1) **Data Processing**

   Hourly ozone and NO_2 data are needed for the 1-hour NO_2 CAAQS and NAAQS analysis. Missing data always exist in datasets due to maintenance of the monitoring equipment, equipment malfunction, human error, etc.

   For the NO_2 background data for the 1-hour NO_2 NAAQS and CAAQS analyses, the applicant obtained data from the AQS Monitoring Station in San Jose (Jackson, 06-085-0005), which is nearest station to the facility. These data, spanning the period from January 2013 through December 2017, ranged in value from 0.0 to 67.5 ppb.

   Missing values for one or two consecutive hours were replaced by the larger value of the preceding or following hour. When 3 or more consecutive hours were missing, the monthly-by-hour maximum for the 5-year period was used to substitute for the missing hours. For the NAAQS analysis, these data were then used to calculate the seasonal-by-hour background using the five-year average of the 3rd highest value of the available monitoring data, determined by accounting for both season and hour of-day. The 3rd, 2nd, or 1st highest season by hour-of-day value for each year was used to average over the five years depending on the completeness of the seasonal data for that year (3rd highest with more than 60 valid days per season, 2nd highest with between 30 and 60 days, and 1st highest with more than 15 days).

   For the CAAQS analysis, the 5-year dataset was used to generate hourly background values concurrent with the meteorological data, which were added to the concentration on an hour-by-hour basis.

2) **Combination of project impact with background data**.
After conferring with Energy Commission staff, the applicant determined the total ambient air quality impact by properly adding the modeled concentration to the background concentration. An hour-by-hour background file, concurrent with the meteorological data, was included in the CAAQS analysis so the output represents the total ambient concentration at each receptor. Season-by-hour background was used for the NAAQS analysis, so this output also represents the total ambient concentration at each receptor.

On May 21, 2018, the applicant revised the air quality section of the SPPE to reflect recent design changes and an increase in the number of diesel engines from 48 to 50. This required a reassessment of their air quality impacts (Vantage 2018e). Staff noticed various inconsistencies with the NO_2 modeling provided in this update. Staff noted these inconsistencies and submitted an email to the applicant asking them to respond to four questions because their modeling files did not match their description of their analysis. The applicant's consultant, Ramboll, agreed further analysis and fixes were necessary and on June 6, 2018 Ramboll submitted responses that address the comments related to NO_2 modelling. Please see docketed compilation of additional data requests and responses for the details of this interaction (California Energy Commission 2018b). Applicant docketed a revised NO_2 modeling report (with changes from the previous report in redline), along with updated modelling files (via OneDrive link) reflect the updates described in their responses (Vantage 2018f).

The following table shows the results of Ramboll's most recent analysis for 1-hour NO2 CAAQS and NAAQS (see Vantage 2018f).

Air Quality Table 5.3-3 NO_2 Modeled Impacts

Pollutant	Averaging Time	Total Modeled Ambient Conc.[a, b]	Limiting Standard	Percent of Standard (Ramboll Results)
NO_2	1-hour CAAQS	231.1 [b]	339	68.2
	1-hour NAAQS	163.9 [b]	188	87.2

Source: Vantage 2018f
Notes:
[a] The value shown is the maximum from any of the emergency generators being tested for 1-hour at 100% load. The safety generators were tested at 75% load according to NFPA 110 recommendations.
[b] Total ambient concentrations represent the modeled concentration plus the background concentration. An hour-by-hour background file, concurrent with the meteorological data, was included in the CAAQS analysis so the model output represents the total ambient concentration at each receptor. Season-by-hour background were used for the NAAQS analysis, so this output also represents the total ambient concentration at each receptor.

It should be noted that the applicant's analysis for the 1-hour NO_2 CAAQS and NAAQS are extremely conservative due to the nature of the intermittent annual readiness testing. The emergency generators would only be tested for four hours annually and five minutes monthly (a total of five hours per year). However, the operation of a pair of generators (with one located above the other and both having same stack exit heights and similar locations, or two adjacent generators) could cause eight hours of operation from two generators to impact a given receptor location and result in a significant impact for the 98th percentile (eighth highest value) for the NAAQS. To obtain worst case

impacts, the applicant's analysis assumed each of the emergency generators (and the life safety engine) would be tested with worst-case hourly emissions continuously for every hour of the year (8,760 hours per year) for 5 modeling years.

In summary, staff concludes that operational emissions from the McLaren Data Center would not cause or contribute to a violation of any state or federal ambient air quality standard, or conflict with applicable plans and programs to attain or maintain ambient air quality standards.

Particulate Matter. For the 47 emergency generators, the applicant is proposing to use diesel engines made by Caterpillar, with a Tier 2 rating and with an engine output at full load, of 4,043 horse power (hp). For the three smaller engines called Life Safety Generators, the applicant is proposing to use diesel engine made by Perkins, with a Tier 2 rating and an engine output at full load of 900 hp. All diesel engines would have a Johnson Matthey CRT® Particulate Filter System which is expected to have a control efficiency of around 85 percent of the uncontrolled emission rates. The filter system would be cleaned (regenerated) during the annual 4-hour test (Vantage 2018b). The maximum hourly diesel PM emissions would result from operation of these engines at full load. Accordingly, the PM emissions from this project have been calculated assuming operation at 100% load. The PM emissions resulting from operation at 100 percent load and the combined annual usage limit of 50 hours for per turbine are summarized in **Air Quality Table 5.3-7**.

Other Criteria Pollutants. The emission calculations for reactive organic gases (ROGs), sulfur oxides (SOx) and CO were based on the standard certified Johnson Matthey CRT® Particulate Filter System control efficiency emission factors for these engines combined with assumed operation at 100 percent load. For ROGs, the expected control efficiency at full load is expected to be around 70 percent of the uncontrolled emissions as stated by the Johnson Matthey CRT® Particulate Filter System certification data sheet in the AQTR. The calculation of sulfur dioxide (SO_2) emissions was based on the maximum fuel usage rate at 100 percent load, the maximum sulfur content allowed in California diesel, and an assumed 100 percent conversion of fuel sulfur to SO_2. For CO, the expected control efficiency at full load is expected to be around 80 percent of the uncontrolled emissions as stated by the Johnson Matthey CRT® Particulate Filter System certification data sheet in the AQTR. Impacts and mass emission rates are shown in **Air Quality Table 5.3-8 (CO)**.

Construction Emissions

According to the SPPE application, construction of the MBGF would take place over three (3) phases. This is slightly different from what was analyzed in the Initial Study (IS) done by the City of Santa Clara. The City of Santa Clara analyzed four (4) phases. The application states on page 2-7:

"Each phase represents a generation yard which will be constructed to serve each of the three MDC Buildings. Therefore Phase I would include 16 generators and the life safety emergency generator; Phase II would include 16 generators; and Phase III would include 15 generators….. Construction would include the constricting of the concrete slabs, fencing, undergrounding and installing above ground conduit to install the electrical cabling to interconnect the MDC Building switch gear, construction of the racking system for the second level of generators, and placement and securing the generators. The generators themselves would be assembled offsite and delivered to site by truck, and each generator will be placed within the generation yard by crane. Construction personal is expected to range from 10 to 15 workers per generation yard including one crane operator."

Another difference between this SPPE application and the City of Santa Clara's IS/MND is that only 36 generators were analyzed in the IS/MND, while now there will be a total of 47 large backup emergency generators and three (3) life safety emergency engines.

In the revised McLaren SPPE application docketed on May 21, 2018 (Vantage 2018e), the applicant included further detail on the design of the construction phases, which were analyzed in the City of Santa Clara's IS/MND and what is currently proposed differently as a three phase construction project. In Supplemental Data filing (Vantage 2018e), the applicant states, *"The following characteristics were used to estimate emissions from construction activities: For placement of one generator, a crane would be operating for 2 hours and a heavy-heavy duty truck would be idling for 2 hours. For the construction of the structure, it was assumed to take one loader and one welder operating for 8 hours/day for 5 days to build the structure for 1 building. This means that the three structures needed for the 3 buildings would take 15 days total to construct."* The applicant also submitted a revised calculated total emissions estimate using two online emission estimate models. The applicant states, *"CalEEMod was used to estimate emissions from construction equipment and EMFAC2014 was used to estimate idling emissions from the heavy-heavy duty truck. Calculated emissions from placement of all 50 generators and construction of the 3 structures was compared to the total construction emissions from the 2016 CEQA MND analysis submitted to the City of Santa Clara for the impacts analysis. For comparison, the calculated emissions from placement of the generators and structures ranged from 0.23-0.50% of total emissions from the 2016 analysis, depending on the pollutant"*. Estimated construction emissions for the project are summarized in **Air Quality Table 5.3-4 and Table 5.3-5 (CalEEmod)**. Emissions associated with the construction of the structure, generators and combined simultaneous construction of structures and generators are compared to BAAQMD thresholds in **Table 5.3-5**.

City of Santa Clara's IS/MND determination for Construction

The applicant has stated In the SPPE that installation of the additional 18 engines would create a "*de minimis"* amount of construction period criteria pollutant emissions and the source of emissions during this construction would be less than that of the more considerable construction phases in which the McLaren Building (MDC and 36 emergency engines) would be built (Vantage 2018e). As shown in **Air Quality Table 5.3-4**, staff determined that the construction emissions from the installation of the 18 additional emergency engines would be a small amount, less than one percent of the Total Construction Emissions from 2016 CEQA MND. Staff relied on the City of Santa Clara's MND for the estimated daily construction emissions from the 4-phases (at the time of publication of the City of Santa Clara's MND, which is now down to three phases), but similar emissions are expected for the 18 additional engines to be installed on the project site. The City of Santa Clara's IS/MND construction phase estimated emissions are shown below and staff has added a new category to include the estimated emissions to install 18 additional emergency engines to give a complete project view of estimated daily emissions during the construction phase of McLaren Data Center.

Air Quality Table 5.3-4 Estimated Construction Emissions (Total Tons)			
	ROG	**NO_x**	**PM[3,4]**
Structure[1]	0.0022	0.018	7.4E-04
Generator[2]	7.2E-05	9.3E-04	4.0E-05
18 Generators with 1 Structure	0.0034	0.033	0.0014
50 Generators with 3 Structures	0.010	0.10	0.0042
Total Construction Emissions in 2016 CEQA MND (tons)	4.3	20	1.0
Percentage of Total Construction Emissions from 2016 CEQA MND	**0.23%**	**0.50%**	**0.43%**

Source: (Vantage 2018e, Table 1)
Notes:
1 Emissions estimated using CalEEMod 2016.3.2 and EMFAC 2014 for Santa Clara county.
2 Emissions estimated using CalEEMod 2016.3.2.
3 PM emissions from construction are applicable only for exhaust emissions based on BAAQMD CEQA Guidance. Buildings 1 and 3 have 17 generators with 1 structure and Building 2 has 16 generators with 1 structure. Construction emissions for Building 2 were assumed to be the same as other buildings.
4 Including only PM10 emissions to be conservative. For this analysis, DPM is assumed to equal PM10.

The City of Santa Clara's IS/MND provided emission estimates for criteria pollutants quantified using the California Emissions Estimator Model (CalEEMod), version 2016.3.2, for construction activity (i.e. number of construction equipment items, equipment horsepower, etc.) and scheduling activity (i.e. construction phase start and end dates) provided by the project applicant. The data used in the construction analysis are provided in the AQTR. Construction is now expected to occur in only three phases from 2018 to 2022 and a maximum of two phases would occur simultaneously. The analysis assumes that construction would occur five days a week.

Estimated construction emissions for the project are summarized in **Air Quality Table 5.3-5 (CalEEmod)**. Emissions associated with each phase and any two contiguous phases are compared to BAAQMD thresholds.

As shown in **Air Quality Table 5.3-5 (CalEEMOD)**, construction of the project would not generate reactive organic gases (ROG), nitrogen oxides (NOX), or PM exhaust in excess of BAAQMD's numeric thresholds, either individually or for any two contiguous phases. The BAAQMD CEQA Guidelines consider dust impacts to be less than significant impact through the application of best management practices (BMPs), which the applicant would implement in accordance with standard construction practices. Dust impacts and associated dust BMPs are discussed below. During construction, impacts for ROG, NOx, and PM exhaust would be less than significant.

Air Quality Table 5.3-5 (CalEEMOD) Estimated Daily Construction Criteria Pollutant Emissions From The Project (Pounds Per Day)

Construction Phase	ROG	NOX	PM10 Exhaust	PM2.5 Exhaust
Phase 1	5.3	28	1.5	**1.4**
Phase 2	3.5	14	0.71	**0.68**
Phase 3	4.5	21	1	**1**
Phase 4	3	11	0.47	**0.45**
BAAQMD Threshold	54	54	82	**54**
Do Two Consecutive Phases Exceed Threshold?	**No**	**No**	**No**	**No**

Source: Vantage 2018a

Dust Generation. BAAQMD considers fugitive dust emissions to be significant without Best Management Practices (BMPs). Consequently, dust emissions generated by project construction activities would be potentially significant. The mitigation measure as outlined in the BAAQMD-recommended BMPs to control fugitive dust is listed in the city of Santa Clara's IS/MND Table 1, page 2 of the *Determination* section indicates condition MM AIR-1. This mitigation measure has been determined by staff, to be sufficient. Energy Commission staff would not be recommending any additional mitigation beyond what has already been determined by the BAAQMD recommended BMPs.

Community Risk Impacts. The only construction activities associated with the MBGF are placement of the generators and the construction of the three frame structures that would hold the second stack of generators. The total construction time would be 15 days (Vantage 2018c). Table DR2 summarizes calculated total emissions estimates (Excel files provided along with Vantage 2018c).

The applicant previously calculated the total construction emissions from the 2016 CEQA MND analysis and submitted the results to the City of Santa Clara for the impacts analysis. The calculated emissions from placement of the generators and structures ranged from 0.23-0.49% of total emissions from the 2016 analysis, depending on the pollutants (Vantage 2018c, Table DR2). The cancer risk from the 2016 CEQA MND construction HRA was 3.54 in one million. Since all pollutants, including DPM (which is the surrogate for health risk) were well below the totals from the less-than-significant 2016 CEQA MND construction HRA emission totals, the estimated construction emissions from placement of the generators and structures are deemed *de minimis* (Vantage 2018c).

Conclusion. Implementation of the identified mitigation measure during the construction phase would control fugitive dust and reduce this impact to a less than significant level.

Operational Impacts to Regional and Local Air Quality

Operational Emissions. Operation of the project would generate emissions primarily associated with mobile, area, energy, and stationary sources. Each of these sources was taken into account in calculating the project's long-term operational emissions as described below.

Stationary Source Emissions. The project would include 47 emergency diesel generators with an engine horsepower of 4,043 at full load be used in the event of power grid failure and three (3) life safety generators with an engine horsepower of 900 at full load to be used to ensure fire response capability. All generators would be tested routinely to ensure they would function during an emergency. During routine readiness testing, criteria pollutants would be emitted directly from the engines. Emissions from generator testing were quantified using information provided by the project applicant, which is summarized in the AQTR. It was assumed, based on information provided by the project applicant and generator reliability test records from similar data center sites, that testing would occur for no more than 50 hours per year, as stated in the Airborne Toxic Control Measure for Stationary Toxic Compression Ignition Engines (Section 93115, Title 17, CCR).

Daily emissions rates were averaged over the period of a year since the emergency generators could potentially be tested at any time of day or day of year. Per BAAQMD's Rule 2-2, new sources that emit more than 10 tons per year (tpy) of NOx must fully offset emissions. Stationary source emissions are shown in **Air Quality Tables 5.3-6 (Daily)** and **Table 5.3-7 (Annual)**. As shown in **Air Quality Table 5.3-7 (Annual)**, annual NOx emissions from the emergency generators would total approximately 40 tpy. Accordingly, the NOx emissions would be capped or offset through the air permitting process, and if eligible under BAAQMD Rule 2-2-302, through the BAAQMD small facility bank.

Air Quality Tables 5.3-6 (Daily) and **5.3-7 (Annual)** provide emission estimates assuming each engine is operated 50 hours per engine per year, and daily emissions are estimated assuming all engines are operated at 50 hours per year, and then averaged over the year to get a daily average maximum emissions estimate.

Air Quality Table 5.3-6 (Daily) Average Daily Facility Emissions (lb/day)

Engine Model	Engine Horsepower	Quantity of Engines	Operational Hours per Engine per Year	Average Daily Emissions (lb/day)		CEQA Threshold (lb/day)
Caterpillar 3516E	4,043	47	50	NOx[a]	217	54
				ROG	3.6	54
				CO	8	b
				PM10	0.77	82
				PM2.5	0.77	54
Caterpillar C18	900	3	50	NOx	3.08	54
				ROG	0.07	54
				CO	0.486	b
				PM10	0.0426	82
				PM2.5	0.0426	54

Source: Vantage 2018a
Notes: a NOx emissions would be capped or offset through the air permitting process with the BAAQMD
b See Air Quality Table 5.3-8 (CO) for compared modeled concentration to the Air Quality Limiting standard used to determine significance.

As noted above, the total facility-wide potential to emit determination is necessary for determining applicability of prevention of significant deterioration (PSD) and for federal Title V purposes. For these determinations, the facility wide potential to emit includes emissions from emergency operation

assuming 50 hours of operation per year. The total annual potential-to-emit emissions for the McLaren Data Center are summarized in **Air Quality Table 5.3-7 (Annual)** below. For the permitted 50 hours per year, the McLaren Data Center would not be subject to PSD or Title V permitting. As shown in **Air Quality Table 5.3-6 (Daily) and Table 5.3-7 (Annual)**, the daily and annual emissions with the exception of NOx would be below the CEQA thresholds. The project is not expected to cause or contribute significantly for the criteria pollutants of ROG, PM10, or PM2.5.

BAAQMD Rule 2-2-302 requires preconstruction review including Best Available Control Technology (BACT) for sources with the potential to emit more than 10 pounds per day (NOx, POC, PM10, CO, or SO_2). The rule also requires surrendering offsets for facilities with the potential to emit more than 35 tpy of NOx or POC, or 100 tpy of PM10 or SOx. As shown in **Air Quality Table 5.3-7 (Annual)**, the total annual emissions for the project with a potential to emit (PTE) based on 50 hours per year would be over the 35 tpy threshold allowed by BAAQMD Rule 2-2-302. In order for the project to qualify for offsets provided by the BAAQMD's small facility bank, the project's total PTE would need to be below 35 tpy. The MDC would need to take a limit on the total annual hours per engine per year in order to remain below BAAQMD Rule 2-2-302 of 35 tpy. As of the time of this analysis, the applicant has not agreed to specific language that would keep the project's PTE below BAAQMD Rule 2-2-302 of 35 tpy. However, the applicant would take a permit limit (California Energy Commission 2018b), during the permitting process with the BAAQMD, in order to stay below the threshold of BAAQMD Rule 2-2-302 of 35 tpy.

Air Quality Table 5.3-7 (Annual) Maximum Annual Facility Emissions (tpy)

Engine Model	Engine Horsepower	Quantity of Engines	Operational Hours per Engine per Year	Pollutant	Average Annual Emissions (tpy)	CEQA Threshold (tpy)
Caterpillar C175-16	4,043	47	50	NOx[a]	40	10
				ROG	0.66	10
				CO	1.4	b
				PM10	0.14	15
				PM2.5	0.14	10
Perkins C15	900	3	50	NOx	0.57	10
				ROG	3.9E-02	10
				CO	0.089	b
				PM10	7.8E-03	15
				PM2.5	7.8E-03	10

Source: Vantage 2018a
Notes:
a NOx emissions would need to be limited through the air permitting process with the BAAQMD in order for the project to use the small facility bank. The project's annual PTE would need to be less than 35 tpy (California Energy Commission 2018b).
b See Air Quality Table 5.3-8 (CO) for compared modeled concentration to the Air Quality Limiting standard used to determine significance.

As noted below, the mass emissions and modeled concentrations for carbon monoxide (CO) were estimated by the consultants for the applicant. Emissions are from emergency operation for 50 hours per year. The hourly mass potential emissions and modeled concentrations from the McLaren Data Center

are summarized in **Air Quality Table 5.3-8 (CO)** below. As shown in **Air Quality Table 5.3-8 (CO)**, the modeled concentrations for CO would be around 2 percent and 3 percent of the limiting standard for the 1-hour and 8-hour averaging periods, respectively. The project is therefore not expected to be a significant source of CO.

Air Quality Table 5.3-8 (CO) Carbon Monoxide Analysis Mass Emissions (lb/hr) and Modeled Concentrations (ppm)

Averaging Period	Generator Type	CO Emission Rate (lb/hr) per generator	Modeled Concentration (ppm)	Limiting Standard	Modeled concentration as a Percent Limiting Standard
1-hour	Emergency Generators	1.2	0.33	20 ppm	2%
	Life Safety Generator	1.18			
8-hour	Emergency Generators	1.2	0.23	9 ppm	3%
	Life Safety Generator	1.18			

Source: Vantage 2018e

Area, Energy, Mobile, and Stationary Source Emissions. Staff relied on the City of Santa Clara's IS/MND for the estimated CalEEMod estimates. Similar emissions are expected even with the 18 additional engines to be installed on the project site. The City of Santa Clara's IS/MND estimated emissions are shown below and staff has included the estimated emissions for the installation of 18 additional emergency engines to give full estimated daily emissions of McLaren Data Center. Totals can be seen in **Air Quality Table 5.3-9** included in "stationary sources".

The project would result in area and energy source emissions associated with normal facility operation and maintenance. Area sources include landscaping activities, consumer products (e.g., cleaning products), and periodic paint emissions from facility upkeep. Energy source emissions generated by the project would include natural gas combustion for space heating. Area and energy source emissions were calculated using CalEEMod, based on the size of the proposed building. It should be noted that CalEEMod does not calculate criteria pollutant emissions associated with electricity consumption, so energy source criteria pollutant emissions only include the emissions from natural gas combustion.[4]

The project would also result in daily vehicle trips to and from the project site (i.e. trips from employees, visitors, and clients), which would result in mobile source criteria pollutant emissions. Emissions from mobile sources were also calculated using CalEEMod. Area, energy, mobile, and stationary source emissions are shown in **Air Quality Table 5.3-9**. Since the impacts are less than

[4] CalEEMod does calculate greenhouse gas emissions from electricity consumption. Those emissions are discussed in Section 4.7, *Greenhouse Gas Emissions*.

significant impact from the construction and operation of the MBGF, no mitigation other than what is proposed in the City of Santa Clara's IS/MND is necessary.

As shown in **Air Quality Table 5.3-9**, operation of the project would not generate ROG, NOX, or PM emissions in excess of BAAQMD's numeric thresholds.

Air Quality Table 5.3-9 Estimated Operation Criteria Pollutant Emissions From The Project (Pounds Per Day)

Source	ROG	NOX	PM10	PM2.5
Area Sources	10	<1	<1	<1
Energy Sources[a]	<1	2	<1	<1
Mobile Sources	1	3	2	1
Stationary Sources[b]	3.3	-c	<1	<1
Daily Emissions	15	6	5	4
BAAQMD Threshold	54	54	82	82
Exceed Threshold?	No	No	No	No

Source: Vantage 2018a

Notes:

a Criteria pollutant emissions from energy sources are only calculated from natural gas use. CalEEMod does not calculate criteria pollutant emissions produced by electricity consumption.

b Updated value to include the 18 additional emergency engines

c As required by BAAQMD Rule 2-2, the BAAQMD will provide offsets for stationary source NOx emissions (i.e., the emergency generators) from the BAAQMD small facility bank. Annual NOX emissions from the emergency generators would be approximately 40 tpy as seen in Air Quality Table 5.3-7 (annual), unless annual emissions are capped.

Carbon Monoxide Emissions - localized

Covered in City of Santa Clara's IS/MND and is not expected to change even with the change in project description. Continuous engine exhaust may elevate localized CO concentrations, resulting in "hot spots." Receptors exposed to these CO hot spots may have a greater likelihood of developing adverse health effects. CO hot spots are typically observed at heavily congested intersections where a substantial number of gasoline- powered vehicles idle for prolonged durations throughout the day.

Vehicle trips associated with the project would occur as employees travel to and from the project site to commute to work. Approximately 29 employees, including fourteen operations personnel, thirteen security personnel, and two janitors would be employed at the project site. Security and operations personnel would be employed in shifts, resulting in a maximum of 16 employees on-site on a single day. As discussed in the Transportation section of this document, the project would generate a maximum of 410 total daily trips, including vendors, clients, visitors, and employee trips. Given the magnitude of the BAAQMD screening criteria for CO hot spots (44,000 trips at affected intersections and 24,000 trips at affected intersections where mixing is limited), it is extremely unlikely that the addition of 410 trips on any roadway in the vicinity of the project site would result in an exceedance of the BAAQMD thresholds, even in the unlikely event of all 410 trips occurring during the peak hour period. As a result, the additional vehicle trips associated with the project would result in a negligible effect on CO concentrations in the vicinity of the project site.

Mitigation Measures for Construction-Phase Air Quality

MM AIR-1 *Implement BAAQMD Basic Construction Mitigation Measures to Reduce Construction-Related Emissions.* The project applicant shall require all construction contractors to implement the basic construction mitigation measures recommended by BAAQMD, which would reduce fugitive dust emissions to a less-than-significant level. Emission reduction measures shall include, at a minimum, the following measures. Additional measures may be identified by BAAQMD or contractor as appropriate.

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

c. Would the project result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)?

LESS THAN SIGNIFICANT IMPACT Cumulative impacts analysis assesses the impacts that result from the proposed project’s incremental effect viewed over time, together with other closely related past, present, and reasonably foreseeable future projects whose impacts may compound or increase the incremental effect of the proposed project. (Pub. Resources Code § 21083; Cal. Code Regs., tit. 14, §§ 15064(h), 15065(c), 15130, and 15355). Additionally, cumulative impacts are assessed in terms of conformance with the District’s air quality attainment or maintenance plans.

Staff used two main significance criteria in evaluating this project. First, all project emissions of nonattainment criteria pollutants and their precursors (NOx, ROGs, PM10, and SOx) are considered significant cumulative impacts that must be mitigated. Second, any AAQS exceedance or any contribution to any existing AAQS exceedance caused by any project emissions is considered to be

significant and must be mitigated. For construction emissions, the mitigation that is considered is limited to controlling both construction equipment tailpipe emissions and fugitive dust emissions to the maximum extent feasible. For operating emissions, the mitigation includes both feasible emission controls (BACT) or, in this particular case, the applicant could use the BAAQMD small facility bank if the project's PTE is limited to 35 tpy. This limit would be established during the permitting process with the BAAQMD.

Staff submitted a data request in order to determine whether there are any new sources (sources more recent than the most recent background pollutant data used in the analysis) within a 6-mile radius of the project site. The applicant submitted their own request to the BAAQMD to find out if there are any new or foreseen projects in order for Energy Commission staff to determine whether or not the project along with any new projects would have a cumulative effect. The applicant's consultant included more recent background concentration data spanning the period from January 2013 to December 2017 in order to best capture any more recent sources and therefore getting a better idea of a cumulative nature with the project, rather than using older meteorological data prior to the most recent revised submittal. The applicant's approach is adequate and the modeling impacts can be seen in **Air Quality Table 5.3-3**.

The BAAQMD California Environmental Quality Act, Air Quality Guidelines (BAAQMD 2017b) states that for a project that does not individually have significant operational air quality impacts, the determination of a significant cumulative air quality impact is based upon an evaluation of the consistency of the project with the local general plan and of the general plan with the most current Clean Air Plan (CAP). According to the City of Santa Clara's IS/MND, the project would not result in substantial growth that would be inconsistent with the Association of Bay Area Governments (ABAG) projections, nor would the project result in emissions in excess of BAAQMD CEQA thresholds identified in **Air Quality Table 5.3-2**. Even with the addition of 18 additional emergency engines, according to **Air Quality Table 5.3-6 (Daily)** and **Air Quality Table 5.3-7 (Annual)**, the cumulative emissions from the entire McLaren Data Center is expected to be below these thresholds, as long as the applicant is willing to limit annual NOx emissions below the BAAQMD small facility limit of 35 tpy. Thus, the project would not be expected to conflict with the 2010 CAP, as described more fully above.

Community Risk Impacts. As previously noted, the BAAQMD CEQA Guidelines establish numerical criteria for determining when an emissions increase is considered cumulatively considerable and thus triggers the need for a quantitative cumulative impacts assessment. In developing thresholds of significance for air pollutants, BAAQMD considered the emission levels for which a project's individual emissions would be cumulatively considerable. If a project does not exceed the identified significance thresholds, its emissions would not be cumulatively considerable, resulting in less-than-significant air quality impacts to the region's existing air quality conditions. Because MBGF emissions would be less than the BAAQMD CEQA Guidelines criteria for a contribution to any potential adverse cumulative air health risk impacts from either construction or operation, the project would not contribute to any potential adverse cumulative air impact on sensitive receptors. Therefore, additional analysis to assess cumulative impacts is unnecessary. The project would not result in a cumulatively considerable contribution to health risks.

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

LESS THAN SIGNIFICANT IMPACT. The location of the proposed McLaren Data Center is a major factor in determining whether it would result in localized air quality impacts to sensitive receptors. The potential for adverse air quality impacts increases as the distance between the source of emissions and sensitive receptors decreases. Impacts on sensitive receptors are of particular concern. Sensitive receptors are facilities that house or attract children, the elderly, and people with illnesses or others who are especially sensitive to the effects of air pollutants. Hospitals, schools, convalescent facilities, and residential areas are examples of sensitive receptors.

The Initial Study Health Risk Assessment (HRA) completed by the City of Santa Clara provides an adequate list of nearby sensitive receptors. The emissions associated with the project operations, testing and maintenance of diesel generators and operation of the diesel-fueled engines, are well below BAAQMD significance criteria for significant air quality impacts. Therefore, operational emissions would not expose any receptors, sensitive or not, to substantial pollutant concentrations.

Community Risk Impacts. The HRA for MBGF was conducted consistent with the following guidance:

Air Toxics Hot Spots Program Risk Assessment Guidelines (Office of Environmental Health Hazard Assessment [OEHHA] 2015); May 2017 BAAQMD CEQA Guidelines (BAAQMD 2017b); and BAAQMD Recommended Methods for Screening and Modeling Local Risks and Hazards (BAAQMD 2012).

The cancer risk, chronic, and acute hazards in the HRA for the MBGF construction and operation were based on TAC emissions from the project. As noted previously, modeled sources of TACs include on-road construction traffic, off-road construction equipment, and diesel-powered emergency generators. Accordingly, the chemicals evaluated in the HRA were DPM, speciated total organic gases (TOG) in diesel exhaust, and speciated evaporative and exhaust TOGs from gasoline vehicles. DPM emissions were assumed to be equal to exhaust PM10 from on- and off-road construction equipment, and exhaust PM10 from backup diesel engines during operation. Other TACs are speciated from total organic gases (TOG) from on-road emissions from gasoline vehicles. The TACs from speciated TOG include 1,3-Butadiene, Acetaldehyde, Benzene, Ethylbenzene, Formaldehyde, n-Hexane, Methanol, Methyl Ethyl Ketone, Napthalene, Propylene, Styrene, Toluene, and Xylene (Vantage 2018a, Section 4.3 and Table 8).

Diesel exhaust is a complex mixture of thousands of gases and fine particles and contains over 40 substances listed by the U.S. Environmental Protection Agency (EPA) as hazardous air pollutants (HAPs) and by ARB as toxic air contaminants. The diesel particulate matter (DPM) is primarily composed of aggregates of spherical carbon particles coated with organic and inorganic substances. Diesel exhaust deserves particular attention mainly because of its ability to induce serious noncancer effects and its status as a likely human carcinogen.

Diesel exhaust is also characterized by ARB as “particulate matter from diesel-fueled engines.” The impacts from human exposure would include both short- and long-term health effects. Short-term effects can include increased coughing, labored breathing, chest tightness, wheezing, and eye and nasal irritation. Effects from long-term exposure can include increased coughing, chronic bronchitis, reductions in lung function, and inflammation of the lung. Epidemiological studies strongly suggest a

causal relationship between occupational diesel exhaust exposure and lung cancer. Diesel exhaust is listed by the EPA as "likely to be carcinogenic to humans" (U.S. EPA 2003).

Under California regulatory guidelines, DPM is used as a surrogate measure of exposure for the mixture of chemicals that make up diesel exhaust as a whole. Therefore, the DPM analyses for cancer and chronic hazards were based on the surrogate approach, as recommended by Cal/EPA. In the absence of an acute toxicity value for diesel exhaust, speciated TOG were used as a conservative estimate (Vantage 2018a, section 3.1)

Cancer and non-cancer health hazards at various receptors were estimated using the USEPA's AERMOD and guidance from BAAQMD and OEHHA. The HRA evaluated off-site receptors potentially exposed to project emissions from operational activities. These exposed populations include residential Maximally Exposed Individual Sensitive Receptor (MEISR) and recreational receptors at a nearby soccer field (MESCR). Both long-term health impacts (cancer risk, chronic HI, and PM2.5 concentration) and acute hazards were evaluated for the residential and recreational locations. The HRA considered inhalation exposure only. For operation, offsite residents were assumed to be present at one location for a 30-year period, beginning with exposure in the third trimester of pregnancy. Offsite recreational soccer receptors were assumed to be located at the soccer facility starting at age 2, then that same child would continue to be exposed by participating in activities at the facility as they got older. For operation, the child was assumed to be present one day a week for one hour per day for a full 30 years (Vantage 2018a, section 4.2).

The results of HRA indicate that health risks would not exceed BAAQMD's thresholds or permit limits. The incremental increase in cancer risk due to project operation is 0.69 in one million at the MEISR. The chronic and acute noncancer HIs at the respective MEISRs, which are not in the same location, are 0.00018 and 0.84. The annual PM2.5 concentration due to project operation is 0.00091 µg/m3. The results of the modeling are shown in **Air Quality Table 5.3-10** (Vantage 2018e, Section 5.1 and Table 14).

Other than MEISR, the point of maximum impact (PMI) was located adjacent to the facility. Since it's a fenceline and sidewalk receptor, staff agreed with the applicant to assign worker exposure parameters for its HRA rather than assuming a residence would be at that location. Therefore, a 25-year exposure (8 hours/day and 250 days/year) of being present at that point was assumed (Vantage 2018c). The risks of Maximally Exposed Individual Resident (MEIR), Maximally Exposed Individual Worker (MEIW) and Maximally Exposed Soccer Child Receptor (MESCR) were also calculated (Vantage 2018e, Table 13).

In **Air Quality Table 5.3-10**, the results of the health risk analysis were also compared to the BAAQMD 2017 CEQA significance thresholds. Operational health impacts of the backup generators were compared against the BAAQMD 2017 CEQA single source thresholds. As shown in **Air Quality Table 5.3-10,** all receptors remain below the BAAQMD CEQA thresholds of significance. Therefore, operation of the project would not result in cancer or non-cancer health hazards in excess of BAAQMD thresholds.

Air Quality Table 5.3-10 Estimated Operational Health Impacts At The Maximally Exposed Individual Sensitive Receptor

Receptor Type	MEISR[1]	PMI[2]	MEIR[3]	MESCR[4]	MEIW[5]	BAAQMD Threshold
Cancer Risk Impact (in one million)	0.69	2.29	0.69	0.08	2.29	10
Chronic Non-Cancer Hazard Index (HI)	0.00018	0.00739	0.00018	0.00215	0.00739	1
Annual $PM_{2.5}$ Concentration ($\mu g/m^3$)	0.00091	0.003696	0.00091	0.01076	0.03696	0.3
Acute Non-Cancer Hazard Index	0.84	0.84	0.34	0.6	0.84	1

Sources: Vantage 2018e, Table 13 and Table 14.
[1] MEISR - Maximally Exposed Individual Sensitive Receptor. Offsite residents were assumed to be present at one location for a 30-year period, beginning with exposure in the third trimester.
[2] PMI - Point of Maximum Impact. It was calculated assuming worker exposure for all non-soccer child and non-residential receptors. It was assumed a 25-year exposure (8 hours/day and 250 days/year) of being present in that point.
[3] MEIR – Maximally Exposed Individual Resident.
[4] MESCR - Maximally Exposed Soccer Child Receptor. Offsite recreational soccer receptors were assumed to be located at the soccer facility starting at age 2, then that same child would continue to be exposed by participating in activities at the facility as they got older. The child was assumed to be present one day a week for one hour per day for a full 30 years
[5] MEIW - Maximally Exposed Individual Worker. It was evaluated at any receptor where a worker may be present, assuming a 25-year exposure (8 hours/day and 250 days/year) of being present in that point.

Concurrent Construction and Operational Impacts Regional Air Quality.

The applicant has changed the MDC recently and has submitted the appropriate changes with the City of Santa Clara. The applicant states in Data Responses docketed on February 5, 2018[5]: *"The City is currently processing a request by Vantage for minor modification to the previously approved MDC. These changes include increasing the square footage of the buildings which in turn increased the backup generating facility capacity. All of the changes to the MDC are within the previously approved site. The City intends to prepare an Addendum to the IS/MND for the MDC to document the changes to the MDC"*

The following **Air Quality Table 5.3-11** was prepared by the City of Santa Clara, with construction activities occurring in four phases over five years (2018 to 2022). The project has since been modified such that construction would occur over only three phases. Each phase would begin within the same year construction of the previous phase is completed, meaning construction for the following phase could occur simultaneously with the previous construction phase, beginning in 2018. A conservative estimate of overlapping emissions from simultaneous construction and operational activities were summed and are presented on a year-by-year basis in **Air Quality Table 5.3-11**.

[5] **Vantage 2018b –** DayZen LLC docketed February 5, 2018. Vantage Data Center's Supplemental Response to CEC Staff DR Set No. 1 (1-34) (Applicants Data Responses), dated February 5, 2017

As shown in **Air Quality Table 5.3-11**, concurrent construction and operation of the project would not generate ROG, NO_X, or PM emissions in excess of BAAQMD's numeric thresholds.

e. Would the project create objectionable odors affecting a substantial number of people?

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

Determining the significance of potential odor impacts involves a two-step process. *First*, determine whether the project would result in an odor source and receptors being located within the distances indicated in **Air Quality Table 5.3-12**. **Air Quality Table 5.3-12** also lists types of facilities known to emit objectionable odors. The Lead Agency should evaluate facilities not included in **Air Quality Table 5.3-12** or projects separated by greater distances than indicated in **Air Quality Table 5.3-12** if warranted by local conditions or special circumstances. *Second*, if the proposed project would result in an odor source and receptors being located closer than the screening level distances indicated in **Air Quality Table 5.3-12**, a more detailed analysis, as described in Chapter 3 of BAAQMD 2017, "Assessing the Air Quality Impacts of Projects and Plans", should be conducted.

The McLaren Data Center is not an odor source listed in **Air Quality Table 5.3-12** and this project type is not known to cause any significant odor impacts. An evaluation of this facility is not warranted by any local conditions or special circumstances. Therefore, staff finds that the project would not likely create objectionable odors affecting a substantial number of people.

Potential odor sources during construction activities include diesel exhaust from heavy-duty equipment, and the use of architectural coatings. Construction-related odors near existing receptors would be temporary in nature and dissipate as a function of distance. Potential odor sources from project operations would include diesel exhaust from trash pick-up and the use of architectural coatings during routine maintenance. When compared to existing odor sources in the vicinity of the project site, which include heavy and light industrial uses, odor impacts from project operations would be similar. Accordingly, construction and operation of the project is not expected to result in odor impacts that would exceed BAAQMD's odor thresholds (see **Air Quality Table 5.3-12**).

Air Quality Table 5.3-11 Estimated Construction And Operation Criteria Pollutant Emissions From The Project (Tons Per Year)

Source		ROG	NOx	PM10	PM2.5
2018	Construction Phase 1	1.1	3.4	0.19	0.18
	Construction Phase 2	0.125	1.11	0.053	0.050
	Operational - Phase 1	0.9	0.3	0.012	0.012
	2018 Total	**2.1**	**4.8**	**0.26**	**0.24**
2019	Construction Phase 2	0.71	2.2	0.117	0.113
	Construction Phase 3	0.048	0.48	0.023	0.021
	Operational - Phases 1&2	1.3	0.4	0.019	0.019
	2019 Total	**2.1**	**3.1**	**0.16**	**0.15**
2020	Construction Phase 3	0.78	4.0	0.20	0.19
	Operational - Phases 1&2		0.4	0.019	0.019
	2020 Total	**2.1**	**4.4**	**0.22**	**0.20**
2021	Construction Phase 3	0.46	1.4	0.069	0.065
	Operational - Phases 1, 2 & 3	1.9	0.6	0.031	0.030
	2021 Total	**2.5**	**3.2**	**0.15**	**0.14**
2022	Full Operational	2.4	1.05	0.12	0.12
	2022 Total	**2.4**	**1.05**	**0.12**	**0.12**
BAAQMD Threshold		10	10	15	10
Would any two concurrent phases exceed threshold?		No	No	No	No

Source: Vantage 2017b

Air Quality Table 5.3-12 Project Screening Trigger Levels for Potential Odor Sources

Type of Operation	Project Screening Distance
Wastewater Treatment Plant	1 mile
Sanitary Landfill	1 mile
Transfer Station	1 mile
Composting Facility	1 mile
Petroleum Refinery	2 miles
Asphalt Batch Plant	1 mile
Chemical Manufacturing	1 mile
Fiberglass Manufacturing	1 mile
Painting/Coating Operations (e.g. auto body shops)	1 mile
Rendering Plant	1 mile
Coffee Roaster	1 mile

5.3.3 References

ARB 2013 - (California Air Resources Board, Planning and Technical Support Division). 2013. The California Almanac of Emissions and Air Quality. 2013 Edition. April.

BAAQMD 2012 - Bay Area Air Quality Management District, Recommended Methods for Screening and Modeling Local Risks and Hazards. May. Available at http://www.baaqmd.gov/plans-and-climate/california-environmental-quality-act-ceqa/ceqa-tools.

BAAQMD 2017b - Bay Area Air Quality Management District, California Environmental Quality Act, Air Quality Guidelines. Updated May 2017.

California Energy Commission 2018a—California Energy Commission (TN Number: 222364) docketed January 25, 2018, Letter to Scott Galati Regarding Data Request Set #1 for McLaren Backup Generating Facility.

California Energy Commission 2018b—Compilation of Data Clarification Questions and Responses for the McLaren Backup Generation Facility SPPE application review. June 2018. TN223744.

Vantage 2017b—Vantage Data Centers, LLC. Application for Small Power Plant Exemption: McLaren Backup Generating Facility (17-SPPE-1). Appendix B Part 1 (City of Santa Clara's IS/MND), dated December 2017. TN 222057

Vantage 2018a—Vantage Data Centers, LLC. Vantage Data Center's Revised SPPE Application for McLaren Backup Generating Facility. Air Quality Technical Report Replacement for MBGF Applicant for Small Power Plant Exemption: McLaren Backup Generating Facility, Appendix E-1, dated January 2018 (Ramboll 2017). TN 222104, docketed January 8, 2018.

Vantage 2018b—Vantage Data Centers, LLC. Vantage Data Center's Revised SPPE Application for McLaren Backup Generating Facility. Vantage Data Center's Supplemental Response to CEC Staff DR Set No. 1 (1-34) (Applicants Data Responses). TN 222447, docketed February 5, 2018.

Vantage 2018c—Vantage Data Centers, LLC. Vantage Data Center's Revised SPPE Application for McLaren Backup Generating Facility. Vantage Data Center's Supplemental Response to CEC Staff DR2 and DR23 (Applicants Data Responses). TN 222474, docketed February 8, 2018.

Vantage 2018d—Vantage Data Centers, LLC. Vantage Data Center's Revised SPPE Application for McLaren Backup Generating Facility. May 21, 2018. TN# 223483.

Vantage 2018e—Vantage Data Centers, LLC. Vantage Data Center's Revised SPPE Application for McLaren Backup Generating Facility. Vantage Data Center's Revised SPPE Application for McLaren Backup Generating Facility - Air Quality and Public Health. TN 223484, docketed May 21, 2018.

Vantage 2018f—Vantage Data Centers, LLC. Vantage Data Center's Revised SPPE Application for McLaren Backup Generating Facility. Vantage Data Center's Revised NO2 Modeling Report for McLaren Backup Generating Facility. TN 223769, docketed June 11, 2018.

5.4 Biological Resources

Would the project:	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a. Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game 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 Game or U.S. Fish and Wildlife Service?	☐	☐	☐	☒
c. Have a substantial adverse effect on Federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	☐	☐	☒	☐
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.

5.4.1 Setting

The project property is within an established urbanized industrial zone in the city of Santa Clara. Under earlier city approvals (February 2017) for the McLaren Data Center (MDC) project, previously-existing site buildings and improvements on the east half of the project (A.P.N.s 224-40-002 and 11) have been demolished and removed, and the land has been cleared for future development. Vegetation on the property is limited to an expanse of ornamental, non-native shrubs along the eastern boundary that would be removed with development of the project.

5.4.2 Environmental Impacts and Mitigation Measures

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 Game or U.S. Fish and Wildlife Service?

NO IMPACT. Energy Commission staff conducted a California Natural Diversity Database (CNDDB) search for special-status species within a mile of the project site. Western burrowing owls (*Athene cunicularia*), a state species of special concern, are known to occur just over a mile north-east of the proposed project site. Burrowing owls are known to nest in burrows made by California ground squirrels in ruderal habitat or open grasslands. No suitable habitat like this exists on the project site for this species. Therefore, there are no expected impacts to this species.

The yellow rail (*Coturnicops noveboracensis*) is another state bird species of special concern. Historical records indicate its presence in the city of Santa Clara and the Santa Clara Valley Audubon Society lists sighting six of them as recently as 2016. However, since the yellow rail requires coastal tidal/sedge marshes or wet meadows for establishing habitat, this species is not expected to occur on the project site due to its urbanized condition and lack of any surface water sources. Therefore, no impact is anticipated. The other species in the region, Swainson's hawk (*Buteo swainsoni*), California tiger salamander (*Ambystoma californiense*), Northern California legless lizard (*Anniella pulchra*) and robust spine flower (*Chorizanthe robusta var. robusta*), are not present on the project site or immediate area due to the progressive removal of suitable habitat.

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 Game or U.S. Fish and Wildlife Service?

NO IMPACT. The project site is highly developed and has historically been used for agricultural processing, industrial warehouse, manufacturing, and office purposes as well as associated surface parking. There are no sensitive habitats located on site. The nearest sensitive habitat is a jurisdictional wetland corridor along the Guadalupe River Parkway, approximately 1 mile to the east-northeast.

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

LESS THAN SIGNIFICANT IMPACT. There are no state or federally protected wetlands on the project site, which has been partially cleared and graded. The nearest wetland habitat is located along the Guadalupe River Corridor, approximately 1 mile east-northeast of the project. Operation of the 47 backup diesel generators would result in emissions of oxides of nitrogen that could accumulate in area soils and adversely affect sensitive wetlands and other native habitats by facilitating growth of invasive non-native plants. Staff's modeling of potential nitrogen emissions from the generators found that even under the worst case operating scenario (i.e., all 47 generators operating at once, which is not expected to ever happen as the energy output would exceed the data center's demand), combined with the prevailing northwesterly winds, nitrogen emissions at the nearest point of the wetlands would be negligible, at approximately 0.002 to 0.011 kilogram/hectare/year. As such, impacts would be less than significant.

d. Would the project interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of wildlife nursery sites?

LESS THAN SIGNIFICANT IMPACT. The project is located in an established urbanized area characterized by industrial uses. The site and surrounding area do not support wildlife species or migratory wildlife corridors. The city's Initial Study and Mitigated Negative Declaration adopted for the original configuration of the MDC requires the owner to conduct pre-construction nesting surveys for birds that would be covered by the Migratory Bird Treaty Act (MBTA) and California Fish and Game Code on the site and immediate vicinity, if construction activity is to occur during the breeding season. If nests are discovered, appropriate non-disturbance buffers would be established and maintained during construction until such time as the nest is no longer active. With this

provision already incorporated in the project, impacts to avian species covered by the MBTA and Fish and Game Code would be avoided.

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

NO IMPACT. The proposal entails development of an industrial data center, which is consistent with the applicable local zoning of General Industrial. There are no resources on the site that would be subject to local ordinances protecting biological resources. While the city of Santa Clara has a tree preservation ordinance, there are no on-site or street right-of-way trees on the property that would be removed by development.

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?

NO IMPACT. The Santa Clara Valley Habitat Plan (SCVHP) is a conservation plan adopted in 2012 for the protection and recovery of resources over a 519,000-acre study area encompassing the majority of land in Santa Clara County. The project site is not within the adopted SCVHP permitting area, but it was included in the broader habitat plan study area. The project area is designated as urban development on the SCVHP study area maps, so the proposed project would not conflict with the underlying land use assumptions and inherent goals and conservation strategies incorporated in the habitat plan.

Previously Identified Mitigation Measures: See page 48 of the city of Santa Clara's IS/MND.

New Proposed Mitigation Measures: No additional mitigation measures are required beyond those already adopted by the city for the original project.

5.4.3 References

CDFW (California Department of Fish and Wildlife). 2018. California Natural Diversity Database (CNDDB) BIOS 5 government edition, data base search results for 1 mile radius from project site. Accessed on February 2, 2018

Miller, Brooke. December 2016. Santa Clara County Bird List 2016. Retrieved February 02, 2018, http://www.scvas.org/page.php?page_id=6633

Qian, 2018. Project communication and analysis. Energy Commission staff Jon Hilliard and Wenjun Qian. February 2, 2018.

5.5 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 as defined in §15064.5?	☐	☒	☐	☐
b. Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?	☐	☒	☐	☐
c. Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	☐	☐	☒	☐
d. Disturb any human remains, including those interred outside of dedicated cemeteries?	☐	☒	☐	☐

Environmental checklist established by CEQA Guidelines, Appendix G.

5.5.1 Setting

The city of Santa Clara is situated within the valley created by the Santa Cruz and Gavilan Mountains on the west and the Diablo Range on the east. The Santa Clara Valley is a structural valley, i.e., it was created by the uplifting mountains, as opposed to erosional forces (NPS 2007; SFEI 2010).

The proposed project would be located in the western Santa Clara Valley, within the watersheds created by the Guadalupe River and creeks emanating from the western mountains (SCVWD 2018: Figure 1). Historically, the Guadalupe River was about one mile east of the proposed project site, and an unnamed slough was about 1,900 feet southeast of the site. An analysis of historic maps and field notes identifies the area of the proposed project as having been a "wet meadow" historically, with willow groves along the sloughs that crossed the valley (SFEI 2010). Elevation at the proposed project site is 49.25 feet above sea level. About 15,000 years ago, the coast was about 25 kilometers farther west from where it is today, and slowly rose over time to its current level (Moratto 1984: 219).

The geologic map of Santa Clara County shows the area of the proposed project as Quaternary (Holocene) alluvium (Qha) (USGS 2006). The age and depositional nature of these deposits are such that the project area retains the potential for unknown, buried cultural resources despite minor previous ground-disturbing activities at the proposed site.

The proposed project site is located north of downtown Santa Clara, in an industrial area at 651 through 825 Mathew Street. Land use in the area is primarily industrial and commercial, with railroad tracks east of the site and Mathew Street to the south.

An iteration of the McLaren Data Center (MDC) portion of the project was approved by the city of Santa Clara in 2017 and the initial phase of construction started prior to submission of the Small Power Plant Exemption (SPPE) application to the Energy Commission for the McLaren Backup Generating Facility (MBGF) portion of the project. This first phase included demolition of existing structures and grading of the western portion of the project site at 725 and 825 Mathew Street. The city's Initial Study/Mitigated Negative Declaration (IS/MND) documented and evaluated the industrial warehouses, manufacturing, and office facilities on the MDC site, and found the structures to not be eligible for the California Register of Historical Resources (CRHR) (Vantage 2017: 4-19). These structures were developed as canneries during the late 1940s, associated with the fruit industry which flourished in Santa Clara during the early to mid-20th century.

The proposed project is also located adjacent to railroad tracks associated with the Southern Pacific Railroad, originally part of the South Pacific Coast Railroad constructed east of the project area in 1873 (Lehmann 2018).

Prehistoric and Ethnographic Resources

No prehistoric or ethnographic resources were identified in the IS/MND for the MDC or in the SPPE application. A record search was conducted by the city's archaeologist and staff submitted a data request for this information but did not receive a complete record search. Due to a lack of information, staff conducted a record search at the Northwest Information Center at Sonoma State University in April 2018. The record search indicated that 184 cultural resources studies were conducted within one mile of the proposed project area, none in the proposed project area. Two studies (Holman 2000, Holman and Alexander 2008) that included subsurface archaeological testing were conducted on parcels within 0.25 miles of the proposed project area. Neither study found CRHR-eligible buried cultural resources or features during testing.

A total of six prehistoric cultural resource sites or buildings were documented within one mile of the proposed project area, the closest of which is about 0.3 miles away. The Old Mission Site, P-43-000433, consisted of a prehistoric lithic scatter and habitation debris, as well as historic components from the Mission period. The CRHR eligibility of this site is unknown. Other prehistoric sites within one mile of the proposed project area include sites with burials and habitation debris.

Built Environment Resources

In addition to reviewing the information in the IS/MND and the SPPE application, staff consulted the City of Santa Clara Historic Properties listing (City of Santa Clara 2018a, 2018b), the City of Santa Clara General Plan 2010- 2035 (City of Santa Clara 2010), County of Santa Clara Historic Context Statement (Santa Clara 2012), County of Santa Clara Heritage Resource Inventory (Santa Clara 2015), and other sources for historical information on built environment resources. Staff also consulted the NRHP, CRHR, Historic American Building Survey (HABS), Historic American Engineering Record (HAER), Historic American Landscape Survey (HALS), and other repositories of documentation of historical resources. Staff identified 48 listed historical resources within approximately one mile of the project site. Listed historical built environment resources located within approximately one mile of the project site identified in those documents are shown in Cultural Resources Figure 1. Most of the listed historical resources mapped in Cultural Resources Figure 1 are located south of the project site in the old city grid (Old Quad).

The architectural study area used for this project includes properties within a one-parcel boundary of the project site. The study area is established to analyze the project's potential for impacts to historical resources. Staff identified four properties with structures 45 years or older within this study area. These include three commercial and industrial facilities, as well as the Southern Pacific Santa Cruz Division railroad tracks. These are identified in Cultural Resources Table 1 below.

Cultural Resources Table 1 Built Environment Resources 45 Years or Older Within One Parcel of the Project Site

Address	APN	Year Built	Description
2365 Lafayette Street	224-40-010	1949	Commercial-Powder Coating
835 Mathew Street	224-40-005	1951/1955	Commercial-Landscape Management
630-640 Martin Avenue	224-35-014	1954/1960	Industrial-Lumber-Roofing
Southern Pacific Railroad-Santa Cruz Division	N/A	ca. 1887-1889	Railroad tracks

The project applicant did not provide background cultural resources information in the form of a literature and records search, or surveys and evaluations of these adjacent properties. Due to a lack of information, staff conducted a record search at the Northwest Information Center at Sonoma State University in April 2018. The record search indicated that 184 cultural resources studies were conducted within one mile of the proposed project area, none in the proposed project area. No new historical built environment resources were identified. With the exception of the railroad tracks, none of these structures appear to be related to a particular historic context relative to the agricultural background of the region or the former canneries on Mathew Street. The properties are more representative of the post-WWII shift to light industrial and commercial operations that supplanted the agricultural industry in Santa Clara.

2365 Lafayette Street

2365 Lafayette is a large industrial facility on 2.6 acres currently operating as a powder coating business. Building permit records indicate most of the changes over the years occurred on the interiors of the structures. There are three primary structures on site of the warehouse variety. Two of the structures are shed style with a gabled roofline and the other has a roof with hipped corners. The latter was added to the property sometime between 1968 and 1974 (City of Santa Clara 2017 EDR Historical Aerial Imagery). The parcel is owned by the Gangi Corporation. It is not known what relationship it has to the former Gangi Brothers Packing Company at 725 Mathew Street. The buildings are common representatives of industrial structures and do not represent a distinct style or exhibit architectural distinction. The resource is not listed on the city's register nor is the surrounding area identified as one of the clusters of historical resources within the city's limits (City of Santa Clara 2010b; City of Santa Clara 2011: 318).

2365 Lafayette Street does not appear to be a historical resource eligible for listing under the NRHP, CRHR or city of Santa Clara's significance criteria and thus does not qualify as a historical resource under CEQA. Therefore, the resource will not be impacted by the project. Should additional information become available that might change this conclusion, staff will incorporate that into the Final IS/MND.

835 Mathew Street

835 Mathew Street is a narrow lot, 50 feet wide by 217.54 feet deep, with a building that appears to have been at one time a single-story residence. The former residence is L-shaped with a hipped roof facing the street and a gabled roof facing the rear of the property. The other structures on the property appear to be sheds or canopies. A storage shed was added to the property in 1968. A landscaped area at the southeast corner of the lot reflects on the current use of the property as a landscape company office. Alterations to the property over time, such as replacing original windows, and the apparent change from residential to commercial use have affected the integrity[3] of the original structure. The cottage-style building is a common type with no architectural embellishment. The resource is not listed on the city's register nor is the surrounding area identified as one of the clusters of historical resources within the city's limits (City of Santa Clara 2010b; City of Santa Clara 2011: 318).

835 Mathew Street does not appear to be a historical resource eligible for listing under the NRHP, CRHR or city of Santa Clara's significance criteria and thus does not qualify as a historical resource under CEQA. Therefore, the resource will not be impacted by the project. Should additional information become available that might change this conclusion, staff will incorporate that into the Final IS/MND.

630 Martin Avenue

630 Martin Avenue is an industrial facility on 3.15 acres comprising office, manufacturing, and warehouse spaces. It is the main office for the Alliance Roofing Company, Inc. Building permit history begins in 1954 with the erection of a building for office space and a factory. This was followed in 1956 by construction of a warehouse. The next major permit was for replacing the siding and interior renovations. More recently in 2013, exterior renovations included new siding, metal awnings, and roofing.

The recent exterior alterations affect the integrity of the resource in terms of design, materials and workmanship, and it no longer conveys the style of its period of significance (1954-1960).

The resource is not listed on the city's register nor is the surrounding area identified as one of the clusters of historical resources within the city's limits (City of Santa Clara 2010b; City of Santa Clara 2011: 318).

630 Martin Avenue does not appear to be a historical resource eligible for listing under the NRHP, CRHR or city of Santa Clara's significance criteria and thus does not qualify as a historical resource under CEQA. Therefore, the resource will not be impacted by the project. Should additional information become available that might change this conclusion, staff will incorporate that into the Final IS/MND.

Southern Pacific Railroad-Santa Cruz Division

The railroad predates the cannery operations but played a part in shipping the fruit products from the canneries on Mathew Street (Fikes 2016b: 4). The removal of the railroad spur serving these properties, as well as the demolition of the canneries it served, degrades the integrity of the resource and its potential eligibility. Integrity is based upon design, setting, materials, workmanship, feeling, association, and location. While the location of the railroad has not changed, several spurs have been removed within one mile of the project site (Google Maps 2018). Most railroads undergo maintenance and upgrades of facilities that generally change the design, materials, and workmanship over time. The setting and association of this branch of the Southern Pacific Railroad has changed from its initial use as a connector

[3] Integrity generally refers to the resource's existing condition as it relates to design, setting, materials, workmanship, feeling, association and location when compared to its condition within the period of significance.

to the local railroad lines that eventually connected to the transcontinental railway system, servicing the agricultural industry of the Santa Clara Valley in the late 1800s to 1950s and for passenger and freight service to Santa Cruz until the line through the mountains was abandoned in 1940. It is not likely the railroad retains enough integrity to the period of significance, from acquisition of the South Pacific Coast Railroad to abandonment of the portion of the line through the Santa Cruz Mountains (1887 to 1940) to make it eligible for listing on the NRHP, CRHR, or local register. The lack of integrity coupled with the fact that the resource is not listed on the city's register nor is the surrounding area identified as one of the clusters of historical resources within the city's limits (City of Santa Clara 2010b; City of Santa Clara 2011: 318) make 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. Therefore, the resource will not be impacted by the project. Should additional information become available that might change this conclusion, staff will incorporate that into the Final IS/MND.

The section of the railroad adjacent to the project site and the three other properties 45 years or older do not likely represent historical resources that would be eligible under the NRHP, CRHR, or local significance guidelines.

Native American Consultation and Ethnography

A summary of outreach and consultation to California Native American tribes and an ethnographic context is in the **Tribal Cultural Resources** section (5.17) of this document.

Prehistory

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

This Early Holocene culture extended until ca. 5,500 B.P., when the Early Period began, characterized by developments in groundstone technology (i.e., replacing millingstones with the mortar and pestle), increased sedentism, regional symbolic integration between cultural groups, and increased trade. Also referred to locally as the Sandhill Bluff Aspect, this pattern lasted until ca. 2,500 B.P. when the Lower Middle Period began with a "major disruption in symbolic integration systems" (Milliken et al. 2007: 115). Archaeological assemblages from the Lower Middle Period include more Olivella saucer beads and circular Haliotis ornaments (and a disappearance of the rectangular shell beads), and bone tools and whistles.

The Upper Middle Period began ca. 1,520 B.P. with a disruption of the Olivella shell bead trade network, abandonment of some village sites, and changes in shell bead manufacture. Some South Bay burials from this period were extended instead of flexed, and grave goods were lacking (Milliken et al. 2007: 116). The Late Period began ca. 900 B.P. with groups increasing the intensity of the creation of wealth objects as seen in burials. Smaller projectile points for use in the bow and arrow were used 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: 117).

The first European in the Bay Area was Sir Francis Drake, who claimed the region for England on July 17, 1579. During this time the Russians were also exploring Northern California, coming south from Alaska and established Fort Ross in Mendocino because of worries about Spanish expansion north from Mexico into California. More information regarding the historic period can be read below.

Paleontological Resources

Paleontological resources are fossilized remains of organisms from prehistoric environments found in geologic strata. Paleontological sites are those areas where the remains of prehistoric living forms are preserved. They are sometimes identified from outcroppings visible on the earth's surface or sites encountered during grading. While such sites are important finds, it is the geologic formations themselves that are indicative of the potential presence of paleontological resources, because if a geologic formation contains paleontological resources in one locality, it has potential to contain them anywhere the formation occurs.

Geologic units of the Holocene age are generally not considered sensitive for paleontological resources, because biological remains younger than 10,000 years are not usually considered fossils. These sediments have low potential to yield fossil resources or contain significant nonrenewable paleontological resources. However, these recent sediments may overlie older sediments with high potential to contain paleontological resources. Some older sediments have potential to yield fossil remains of extinct species, including extinct terrestrial vertebrates.

Surficial deposits at the project site are Basin Deposits of Holocene age (Murray Engineers 2016). Recent research suggests that the Quaternary alluvium of the Santa Clara Valley may be more paleontologically sensitive than previously recognized (Maguire and Holroyd 2016). Late Pleistocene vertebrate fossils, including mammoth and bison, have been found from multiple localities across the Santa Clara Valley, including Lawrence Expressway East, San Jose; Santa Clara Valley Water District lands in the Guadalupe River in San Jose; Sunnyvale Sewer, Sunnyvale; Calabaza Creek, Sunnyvale; and Milpitas, as well as multiple localities farther north. These occurrences demonstrate that older sediments and fossils (>10,000 years ago) can occur at or very near the surface in these areas where sediments have not been reworked through geologic or artificial processes. Accordingly, Pleistocene alluvium may be more widespread and shallower in the Santa Clara Valley than was previously thought and Pleistocene fossil resources could be present across the Santa Clara Valley (Maguire and Holroyd 2016).

According to the Santa Clara General Plan, all areas of the city hold potential for the presence of prehistoric resources, with the exception of current and former stream channels and areas with artificial fill. All other native soil types present in the city, flood basin, levee deposits on the west side of the Guadalupe River, and alluvial floodplains, have a high potential for the presence of buried prehistoric deposits (City of Santa Clara 2017).

Regional History

In order to inform understanding of the potential significance of built environment resources in the vicinity of 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, in particular for the project site:

- Spanish Mission Period
- Mexican Period
- American Period
- Transportation and Railroads
- Agriculture and Fruit Industry

- Project Site History

Spanish/Mission Period (1769 to 1821)

The Spanish Period was characterized by several developments: 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 Asiss Mission (1777), El Pueblo de San José de Guadalupe (1777) and 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 early transportation routes (Santa Clara 2012: 22-26).

Mexican Period (1821 to 1848)

Following Mexican independence from Spain in 1821, Mexican Governor Pio Pico granted lands to Mexican settlers, including the former lands of the missions, whose connection to the government was lost in the Decree of Secularization in 1834. Forty-three ranchos were granted by the Mexican governor 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 2012: 30-32). The project site does not appear to be located within the boundaries of the historic Spanish-Mexican Ranchos. On maps drawn in 1876, to the south of the project site is the city grid of Santa Clara, to the east El Portero de Santa Clara, to the north Rancho Ulistac, and to the east Saratoga Creek and the Inright Tract (Thompson and West 1876, Rambo 1968). 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 2012: 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 Asiss Mission. The incorporation of Santa Clara followed in 1852. In 1866, the city officially established a grid 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 (City of Santa Clara 2010: 2).

Transportation and Railroads

In 1869, the Western Pacific Railroad completed a rail line from San Jose to Niles, 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. In 1982, Western Pacific was merged with Union Pacific Railroad (Santa Clara 2012: 44).

Senator James Fair, a multi-millionaire, envisioned a route from the east side of San Francisco Bay, south to San Jose, then on to Los Gatos and through the mountains to Felton, ultimately connecting to Santa Cruz. Senator Fair incorporated the South Pacific Coast Railroad in 1876 and immediately began building the segment from Dumbarton in the East Bay to Los Gatos, by way of Santa Clara and San Jose. Following that segment, the rail line was built through the Santa Cruz Mountains to connect with the narrow gauge railroad at Felton. The Southern Pacific acquired these rail lines in 1887 and eventually converted the narrow gauge lines to standard gauge (Lehmann 2018).

The Santa Cruz Division of the Southern Pacific Railroad passed adjacent to the eastern edge of the downtown grid of Santa Clara and adjacent to the current project site (City of Santa Clara 2017; USGS 1899). A 1915 USGS topographic map shows the route of the entire Santa Cruz division from San Jose through the Santa Cruz Mountains to Santa Cruz (USGS 1915). Later topographic maps (USGS 1953; USGS 1961) show a spur off the Santa Cruz Division associated with the cannery buildings along the northern project property boundaries beginning in 1948 and extending to at least 1980. (City of Santa Clara 2017). Google Earth Historical Imagery indicates the siding may have existed into 1993 and beyond. The spur tracks have since been removed. Although the railroad tracks are no longer present, a 20-foot wide railroad easement remains along the northern portion of the project site (Santa Clara 2018: 35, 40).

The first San Jose Airport was completed in 1949 on the remaining undeveloped Stockton Ranch acreage. Attracted by the increasing job market, the population of the Santa Clara Valley experienced phenomenal growth after 1950 (Santa Clara 2012: 46). A modern airport terminal, known as terminal C, was opened in 1965. Designed by a local architect, Hollis Logue, Jr., it was described by the San Jose Mercury News as a "palace of glass, concrete and steel" (Docomomo 2018). It was certainly a design of its time, with Googie-inspired design elements at the cornice line, concrete columns, and glass walls. The San Jose Airport was demolished and replaced by the current Norman Y. Mineta San Jose International Airport in 2010, known as Terminal B.

Santa Clara Valley Agriculture and Fruit Industry

Fruit orchards and vegetable farms dominated the Santa Clara Valley from the 1890s to the 1940s. Wheat and flour milling were the first major agricultural activities. In support of the fruit and vegetable industry, canning operations flourished in the northeastern portion of the county. Fruit packing companies were common in Santa Clara Valley in the first third of the 20th Century. Nearly half of the world's supply of fresh, dried, and canned fruit through the end of World War II (WWII) were produced and shipped from the valley. The agricultural base economy and its support operations were gradually displaced by expanding suburban development, light industrial and high-tech research and development operations by the 1970s (Fikes 2016a: 2).

Project Site

The project site is primarily surrounded by industrial and commercial land uses. The area immediately surrounding the project site was developed largely during the early 1950s after the end of WW II. The project site includes assessor parcel numbers (APNs) 224-40-001 (651 Mathew Street) and 224-40-002 (725 Mathew Street), both of which were developed as canneries in the late 1940s. The project site also includes APN 224-40-011 (825 Mathew Street), which is currently a parking lot and does not contain any buildings or structures. Following is a description of both canneries that were located on the project site, one of which has since been demolished.

Diana Fruit Preserving Company, 651 Mathew Street

The Diana Fruit Preserving Company, established in 1920 at another location in Santa Clara, operated on the subject property from 1950 to 2016, when it was acquired by a Seneca Foods Corporation subsidiary. Diana Fruit Preserving Company may have been the last surviving fruit packing company in Santa Clara County in operation (Fike 2016a: 4-5). The project proposes that the buildings and structures of the Diana Fruit Preserving Company be demolished and the site graded for future phases of the project.

Gangi Brothers Packing Company, 725 Mathew Street

The Gangi Brothers Packing Company began operation of their tomato processing plant on Mathew Street in 1945. The company operated the Mathew Street site until approximately 2005 (Fike 2016b). The buildings and structures associated with the Gangi Brothers Packing Company have been demolished and the site has been rough-graded.

Both the Diana Fruit Preserving Company and the Gangi Brothers Packing Company facilities were evaluated in the city of Santa Clara's Initial Study for eligibility for the NRHP, CRHR, and for local significance. The evaluations found that neither resource was eligible for listing under NRHP/CRHR Criteria A-D/1-4 or under the local significance criteria. For more information about the two canneries and their significance, see pages 51-55 of the Initial Study prepared by the City of Santa Clara (City of Santa Clara 2017: 51-55).

The surrounding 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. Less than a mile north of the project site is the Owens-Corning Fiberglass Corporation plant. The Owens-Corning plant was one of the first new industrial businesses to settle in the Santa Clara Valley and represents the shift toward industrial uses in the valley after WWII. A 1949 aerial photograph shows the brand new plant along Lafayette Street with agricultural uses surrounding it (City of Santa Clara 2018d). The plant remains in that location today. Throughout the valley, residential home developments slowly replaced the 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 (Fikes 2016a: 2). The landscape was forever transformed.

Regulatory Background

California Environmental Quality Act (CEQA)

Various laws apply to the evaluation and treatment of cultural resources. CEQA requires the Lead Agency 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(s) 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 CRHR", or "a resource listed in a local register of historical resources or identified as significant in a 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 National Register of Historic Places (NRHP) and California Registered Historical Landmarks from No. 770 onward (Pub. Resources Code, §5024.1[d]).

Under CEQA, a resource is generally considered to be historically significant if it meets the criteria for listing in the CRHR. In addition to being at least 50 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 our history;
- Criterion 2, is associated with the lives of persons significant in our past;
- Criterion 3, embodies the distinctive characteristics of a type, period, 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 to history or prehistory.

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 make a determination as to 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 are considered unique archaeological resources if it can be clearly demonstrated 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 (CEQA defines historical resources to be a part of 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 significances 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), the State CEQA Guidelines, define a substantial adverse change as "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."

Resource Types

Three broad classes of cultural resources are considered in this section: prehistoric, ethnographic, and historic. Those cultural resources determined eligible to the CRHR are called historical resources and are further defined under state law as buildings, sites, structures, objects, areas, places, records, manuscripts, and tribal cultural resources (Cal. Code Regs., tit. 14, §§ 4852a, 5064.5(a)(3); Pub. Resources Code, §§ 5020.1(h,j), 5024.1[e][2, 4], 21074).

Prehistoric archaeological resources are those materials relating to prehistoric human occupation and use of a particular environment. These resources may include sites and deposits, structures, artifacts, rock art, trails, and other traces of Native American human activity. In California, the prehistoric period began over 12,000 years ago and extended through the eighteenth century until A.D. 1769, when the first Europeans 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 resource types. They are subsistence and ceremonial locales and sites, structures, objects, and rural and urban landscapes assigned cultural significance by traditional users. The decision to call resources "ethnographic" depends on whether associated peoples perceive them as traditionally meaningful to their identity as a group and the survival of their lifeways.

Historic-period resources are those materials, archaeological and architectural, usually but not necessarily associated with Euro-American exploration and settlement of an area and the beginning of a written historical record. They may include archaeological deposits, sites, structures, trail and road corridors, artifacts, or other evidence of historic human activity. Under federal and state requirements, historic period cultural resources must be greater than 50 years old 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 1995:2) endorses recording and evaluating resources over 45 years of age to accommodate a five-year lag in the planning process.

City of Santa Clara General Plan

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

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

Appendix 8.9 of the city's General Plan, the Historic Preservation and Resource Inventory, established criteria for local significance and included a list of recorded historic properties (City of Santa Clara, 2010a, 2010b). In addition, the city has embedded in its Municipal Code a section on Historic Preservation (Title 18 Zoning, Chapter 18.106 Historic Preservation). The purpose of this chapter 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" (City of Santa Clara 2018b). The chapter requires maintenance of a Historic Resource Inventory (HRI).

The chapter also identifies significance criteria for local listings. The Criteria for Local Significance was adopted on April 20, 2004, by the City of Santa Clara City Council. 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.

Section 5.6.3 of the City of Santa Clara General Plan identified the protection, preservation, and appropriate mitigation of paleontological resources as a policy of the General Plan. Additionally, specified goals 5.6.3-G1 and 5.6.3-G2 were established to protect paleontologic resources should they be encountered during construction (City of Santa Clara 2010a).

The project would be required to obtain building permits, which would be issued by the city. The issuance of the building permits and oversight provided by the city would ensure that the project complies with the applicable building codes. There are no other paleontological resource-related laws and policies applicable to the project.

The Criteria for Local Significance:

Criteria for Historic 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.

Criteria 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.

Criteria for Geographical 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.

Criteria 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.

5.5.2 Environmental Impacts and Mitigation Measures

a. Would the project cause a substantial adverse change in the significance of an historical resource as defined in §15064.5 [§15064.5 generally defines* historical resource *under CEQA]?

LESS THAN SIGNIFICANT WITH MITIGATION INCORPORATED. No prehistoric or ethnographic resources were identified in the IS/MND for the MDC or in the SPPE application. A record search was conducted by the city's archaeologist and staff submitted a data request for this information but did not receive a complete record search. Due to a lack of information, staff conducted a record search at the Northwest Information Center at Sonoma State University in April 2018. The record search indicated that 184 cultural resources studies were conducted within one mile of the proposed project area, none in the proposed project area. Two studies (Holman 2000, Holman and Alexander 2008) including subsurface archaeological testing were conducted on parcels within 0.25 miles of the proposed project area. Neither study found buried cultural resources or features during testing.

A total of six prehistoric cultural resource sites or buildings were documented within one mile of the proposed project area, the closest of which is about 0.3 miles away. The Old Mission Site, P-43-000433, consisted of a prehistoric lithic scatter and habitation debris, as well as historic components from the Mission period. The CRHR eligibility of this site is unknown. Other prehistoric sites within one mile of the proposed project area include sites with burials and habitation debris.

Background research suggests that the proposed project area is located in an area near several ethnographically known villages in addition to several archaeological sites which have provided valuable information regarding the prehistory of the region (Kroeber 1976: Figure 42; Milliken et al. 2007: 102).

The geologic map of Santa Clara County shows the area of the proposed project as Quaternary (Holocene) alluvium (Qha) (Graymer et al. 2006). The age and depositional nature of these deposits are such that the project area retains the potential for unknown, buried cultural resources despite previous minor ground-disturbing activities at the proposed site. Boring logs conducted for the proposed project indicate that these alluvial deposits are present to at least 65 feet below the ground surface, and that fill deposits in the area of proposed extensive ground disturbance are limited to one to three feet below the ground surface (Murray Engineers 2016).

Due to the extent of ground-disturbing activities as part of the proposed project, there is potential to impact as-yet unknown, buried archaeological resources in those parts of the project area that encounter native, undisturbed sediments. If these resources were to be exposed or destroyed, it would be considered a significant impact. Based on the buried resource potential of the proposed project area, staff recommends that monitoring for archaeological resources continue after grading activities regardless if cultural resources are found during grading.

Mitigation Measures MM CR-1.1 through MM CR-1.3 were adopted as part of the City of Santa Clara's IS/MND and are found at pages 58-61. Staff has evaluated these mitigation measures in the context of the potential impacts and has concluded that modifications to these measures and one additional measure are necessary. Implementation of modified mitigation measures **MM CR-1.1** through **MM CR-1.3 and new mitigation measure MM CR-1.4** would reduce the impacts to unknown cultural resources to less than significant.

Staff's recommended modifications to the city's adopted mitigation measures are shown in **bold/underline** and ~~strikethough~~ text. These mitigation measures should be printed out on all construction documents and implemented during construction to avoid significant impacts on subsurface historic or prehistoric resources.

MM CR-1.1: A **Secretary of the Interior-**qualified archaeologist **and a Native American cultural resources monitor** shall be on site to monitor grading of native soil once all pavement is removed from the project site. The project applicant shall submit the name and qualifications of the selected archaeologist **and Native American Monitor** to the 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:**

1. **Traditional ties to the area being monitored.**
2. **Knowledge of local historic and prehistoric Native American village sites.**
3. **Knowledge and understanding of Health and Safety Code, Section 7050.5 and Public Resources Code, Section 5097.9 et seq.**
4. **Ability to effectively communicate the requirements of Health and Safety Code, Section 7050.5 and Public Resources Code, Section 5097.9 et seq.**
5. **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.**
6. **Ability to travel to project sites within traditional tribal territory.**
7. **Knowledge and understanding of Title 14, California Code of Regulations, Section 15064.5.**
8. **Ability to advocate for the preservation in place of Native American cultural features through knowledge and understanding CEQA mitigation provisions.**
9. **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.**
10. **Knowledge and understanding of archaeological practices, including the phases of archaeological investigation.**

After ~~monitoring the~~ **removal of pavement and prior to** grading ~~phase~~, the archaeologist shall **conduct a pedestrian survey over the exposed soils to determine if any surface archaeological manifestations are present. The archaeologist will monitor full-time all grading and ground disturbing activities in native soils associated with construction of the proposed project. If the archaeologist and Native American monitor believe that a reduction in monitoring activities is prudent,** ~~make recommendations for further monitoring if it is determined that the site has cultural resources. Recommendations for further monitoring shall be implemented during any remaining ground-disturbing activities. If the archaeologist determines that no resources are likely to be found on site, no additional monitoring shall be required. A~~ **then a** letter report **detailing the rationale for making such a reduction and** summarizing the **monitoring** results ~~of the initial monitoring during site grading and any recommendations for further monitoring~~ shall be provided to the Director of Community Development ~~prior to onset of building construction~~. **Department of Recreation 523 forms shall be submitted along with the report for any cultural resources encountered over 50 years old.**

MM CR-1.2: In the event that prehistoric or historic resources are encountered during on-site construction activities, all activity within a 50-foot radius of the find shall be stopped, the Director of Community Development shall be notified, and a **Secretary of the Interior-**qualified archaeologist ~~or paleontologist~~ 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** ~~and~~ make ~~appropriate~~ **a** recommendation~~.~~ **regarding eligibility for the California Register of Historical Resources, data recovery, curation, or other appropriate mitigation. Ground disturbance within the 50-foot radius can resume once these steps are taken and the Director of Community Development has concurred with the recommendations. Within 30 days of the completion of construction or cultural resources monitoring, whichever comes first, a** ~~Recommendations could include collection, recordation, and analysis of any significant cultural materials. A~~ report of findings documenting any ~~data recovery during monitoring~~ **cultural resource finds, recommendations, data recovery efforts, and other pertinent information gleaned during cultural resources monitoring** shall then be submitted to the Director of Community Development. **Once finalized, this report shall be submitted to the Northwest Information Center at Sonoma State University.**

MM CR-1.3: In the event that human remains are discovered during on-site construction activities, all activity within a 50-foot radius of the find shall be stopped. The Santa Clara County Coroner shall be notified and shall make a determination as to whether the remains are of Native American origin or whether an investigation into the cause of death is required. If the remains are determined to be Native American, the Coroner shall notify the Native American Heritage Commission**. All actions taken under this mitigation measure shall comply with Health and Human Safety Code § 7050.5(b).**

MM CR-1.4: Prior to and for the duration of ground disturbance, the project owner shall provide Worker Environmental Awareness Program training to all existing and any new employees. This training should include: a discussion of applicable laws and penalties under the laws; samples or visual aids of artifacts that could be encountered in the project vicinity, including what those artifacts may look like partially buried, or wholly buried and freshly exposed; and instructions regarding to halt work in the vicinity of any potential cultural resources discovery, and notify the city-approved archaeologist and Native American cultural resources monitor.

b. Would the project cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?

LESS THAN SIGNIFICANT WITH MITIGATION INCORPORATED. See CEQA checklist question a above.

c. Would the project directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?

LESS THAN SIGNIFICANT IMPACT. There are no *EXISTING* conditions or immediate evidence that would suggest the presence of buried paleontological resources on the project site. However, the project site is in the vicinity of San Tomas Aquino Creek and Guadalupe River, and development of the project could result in the exposure or destruction of unknown subsurface historic and/or prehistoric resources. The project's potential to affect paleontological resources relates to ground disturbance. Ground disturbance caused by project implementation would take place only during construction. Therefore, this analysis addresses construction impacts.

Ground-disturbing activities would include surface grading, trenching for utilities, and the installation of deep piles or deep ground improvements to support the foundations of the buildings. Both foundation options could affect paleontological resources. The auger cast displacement pile option could extend up to 180 feet below ground surface (California Energy Commission 2018). The rigid mat foundation combined with a deep ground improvement method option would replace soil and include drilling shafts for column construction at depths that would be specified by the ground improvement contractor. While unlikely, construction activities could potentially result in the exposure or destruction of unknown subsurface historic and/or prehistoric resources. The exposure or destruction of subsurface prehistoric resources would be considered a significant impact.

Based on data from the Geotechnical Investigation (Murray Engineers 2016) prepared for the project (Appendix B, Appendix D to the MND) and current paleontological literature, the subsurface geologic unit in the study area was assigned a paleontological sensitivity of High Potential according to the Society of Vertebrate Paleontology's Standard Guidelines. Significant vertebrate fossils have been recovered from this geologic unit. Thus, similar fossils could be recovered at the project site when undisturbed soil formations are encountered.

To mitigate this potential impact, the following mitigation measure was adopted in the city's IS/MND. Staff has evaluated this measure and considers it a satisfactory mitigation measure, without modification.

MM CR-2.1: 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 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 shall be prepared that outlines the results of the mitigation program. The City shall be responsible for ensuring that the paleontologist's recommendations regarding treatment and reporting are implemented.

The project site will be graded and any excavation for deep foundations would be completed prior to installation of any of the project facilities. Additional trenching at the project site will be necessary to install the underground cabling for the electrical interconnection between each generator yard and the data center building it serves. This trenching is most likely to occur in previously disturbed soils. However, with the implementation of the above mitigation measure, any potential impacts from the trenching activities for the project would be reduced to less than significant levels in the unlikely event the trenching activities encounter potential paleontological resources.

No additional mitigation measures beyond those adopted in the city's IS/MND are necessary to ensure the project does not result in significant impacts to geological and paleontological resources.

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

LESS THAN SIGNIFICANT WITH MITIGATION INCORPORATED. See CEQA checklist question above.

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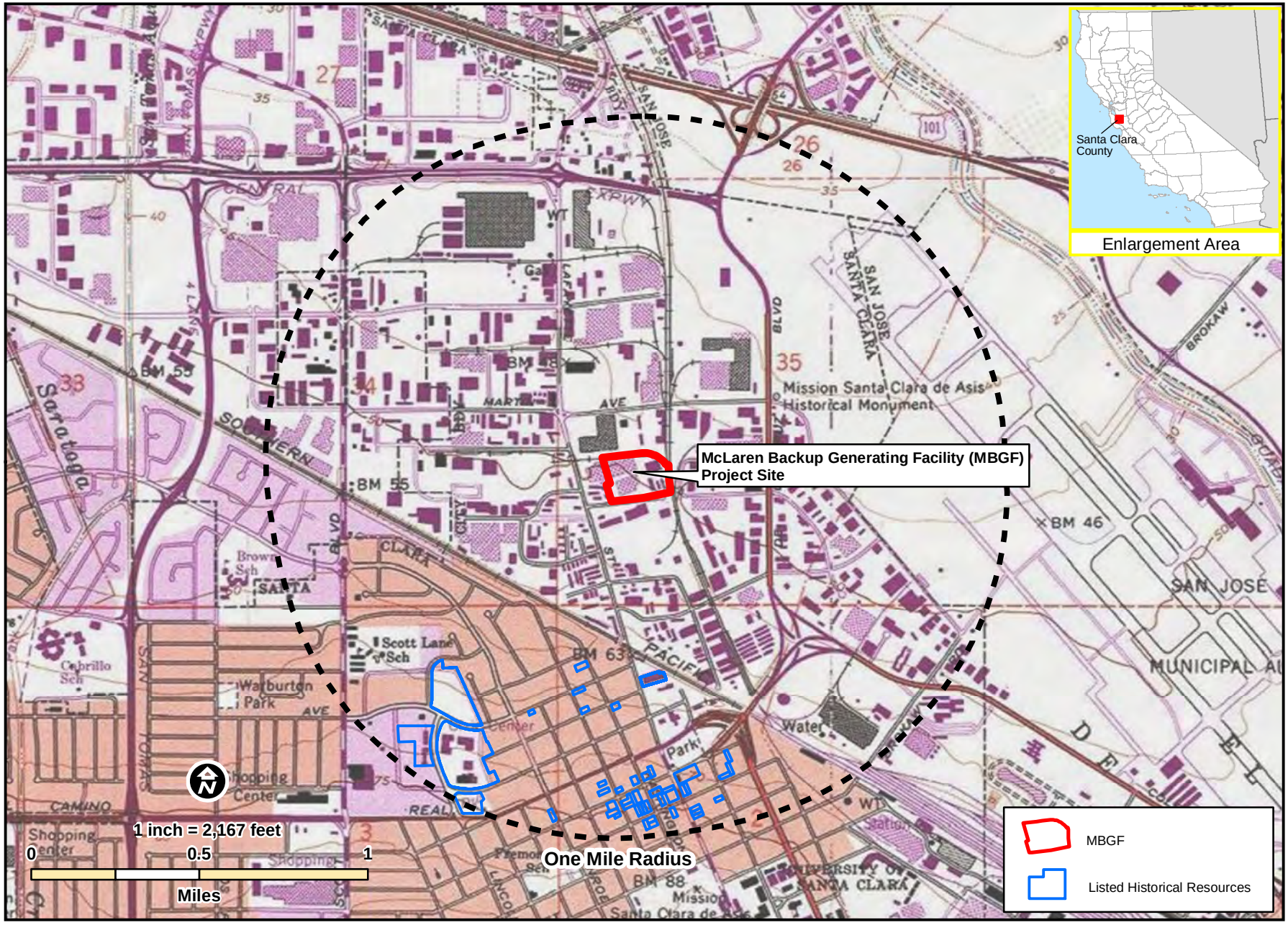
CULTURAL RESOURCES FIGURE 1- BUILT ENVIRONMENT
McLaren Backup Generating Facility (MBGF)
Listed Historical Resources within One Mile of the MBGF Project Site



CULTURAL RESOURCES

CALIFORNIA ENERGY COMMISSION - SITING, TRANSMISSION AND ENVIRONMENTAL PROTECTION DIVISION

SOURCES: USGS Topo, CEC Staff

5.6 Geology and Soils

Would the project:	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less than Significant Impact	No Impact
a. Expose people or structures to 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 groundshaking?	☐	☐	☒	☐
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 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?	☐	☐	☐	☒

Environmental checklist established by CEQA Guidelines, Appendix G.

*Geology and Soils question (d) reflects the current 2013 California Building Code (CBC), effective January 1, 2014, which is based on the International Building Code (2009).

5.6.1 Setting

Geology and Soils

The project site is in the Santa Clara Valley, a relatively broad and level alluvial basin, bounded by the San Francisco Bay to the north, the Santa Cruz Mountains to the west and southwest, and the Diablo Mountain Range to the east and southeast. The Santa Clara Valley's basin contains alluvial deposits derived from the Diablo Range and the Santa Cruz Mountains (City of Santa Clara 2011).

The majority of the project site is underlain by Holocene age (less than 11,000 years old) basin deposits (Qhb) (Figure 1). The 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. Based on borings conducted at the project site, the site is underlain predominately by fine-grained alluvium consisting of clays and silts interbedded with discontinuous layers of coarse-grained alluvium consisting of sands and gravels. The maximum cumulative thickness of coarse-grained alluvium encountered was approximately 35 feet over a depth of 95 Feet (Murray Engineers 2016). The fine-grained alluvium encountered is predominantly medium stiff to hard and the coarse-grained alluvium is predominantly medium dense to very dense.

The weaker medium stiff compressible clay layers appear to be discontinuous across the site and vary in thickness (City of Santa Clara 2017).

The near-surface material at the project site is highly expansive (Figure 2). Expansive soil can undergo volume changes with changes in moisture content. Specifically, when wetted as during the rainy season, expansive soil tends to swell and when dried as during the summer months, this material shrinks. Structures and flatwork supported on expansive soil tend to experience cyclic, seasonal heave, and settlement (City of Santa Clara 2017).

Ground-disturbing activities would include surface grading, trenching for utilities, and the installation of deep piles or deep ground improvements to support the foundations of the buildings (California Energy Commission 2018). Both foundation options could affect paleontological resources, which are discussed in the Cultural Resources section. The auger cast displacement pile option could extend up to 180 feet below ground surface (Vantage 2018). The rigid mat foundation combined with a deep ground improvement method option would replace soil and would drill ground columns up to depths to be specified by the ground improvement contractor.

There are no unique geologic features on or adjacent to the project site. The topography of the project site and the surrounding area is relatively flat.

Groundwater

Seasonal fluctuations, drainage patterns, and other factors can affect the groundwater level. Groundwater was encountered between 6 to 11 feet below grade at the project site. According to recent pore-pressure dissipation tests conducted at the project site, groundwater was encountered between depths of 0.5 to 6.7 feet below grade (Murray Engineers 2016).

Seismicity and Seismic Hazards

The San Francisco Bay Area is one of the most seismically active areas in the United States. The project site is not located within the limits of an Alquist-Priolo Earthquake Fault Zone. While seismologists cannot predict earthquake events, the U.S. Geological Survey's Working Group on California Earthquake Probabilities estimates there is a 63 percent chance of at least one magnitude 6.7 earthquake occurring in the Bay Area in the next 30 years. Higher levels of shaking and damage would be expected for earthquakes occurring at closer distances. The faults considered capable of generating significant earthquakes in the area are generally associated with the well-defined areas of crustal movement, which trend northwesterly (City of Santa Clara 2017).

Three northwest-trending major earthquake faults (the San Andreas fault, the Hayward fault, and the Calaveras fault) that comprise the San Andreas fault system extend through the Bay Area. Table 5.6-1 lists nearby faults, both active (displacement in historic times) and Quaternary (displacement within the last 10,000 to 1,600,000 years), along with their respective distances from the project site. As shown in Table 5.6-1, in addition to the major earthquake faults, one of the many traces of the Monte Vista – Shannon fault zone is also near the project site. The three closest faults to the site are classified as undifferentiated age Quaternary faults, indicating there is no evidence of displacement along any of these three faults within the past 10,000 years.

TABLE 5.6-1 FAULTS NEAR THE PROJECT SITE

Fault	Approximate Distance From Project Site (miles)	Location with Respect to the Project Site
San Andreas – Active	10	Southwest
Hayward – Active	6	Northeast
Calaveras – Active	9	Northeast
Monte-Vista—Shannon - Active	7	Southwest
Silver Creek - Quaternary	2.2	Northeast
San Jose – Quaternary	1.8	Southwest
Stanford - Quaternary	2.9	Southwest

(Murray Engineers 2016; Jennings and Saucedo, 1994)

S shown in Table 5.6-1, the Hayward fault is 6 miles from the project site and is the closest active fault to the project site. Because the fault is not within the limits of an Alquist-Priolo Earthquake Fault Zone, surface fault rupture is unlikely. Although the project site is not located on or adjacent to a major earthquake fault, severe ground shaking is probable during the useful life of the project.

Structural design of facilities in California are required to incorporate design features to ensure public safety in the event a seismic event generates sufficient ground motion to impact the structural integrity of the facility. Design of these seismic safety features in a facility are based on the anticipated maximum ground acceleration, called the Peak Ground Acceleration (PGA), at a given facility that would be generated by the design basis earthquake. The PGA is not a measure of the total energy of the design basis earthquake, but rather a measure of how hard the ground will shake at a specific geographic location. Based on the Uniform Hazard Response spectrum the PGA for an event with a 2 percent probability of exceedance in 50 years is 0.83g (CGS 2018). This means that based on the all the ground motions, both large and small, predicted to happen at the site as a result of various, predictable, seismic events during the next 50 years, there is a 2% chance that as a result of a seismic event, the maximum ground acceleration observed at the site could be greater than 0.83g. However, the number provided here is based on the statewide interactive ground motion map. The owner would make their own site specific determination of PGA based on the results of a detailed site investigation.

Liquefaction

Soil liquefaction is a condition in which saturated granular soils near the ground surface undergo a substantial loss of strength due to increased pore water pressure resulting from cyclic stress applications induced by earthquakes or other vibrations. In the process, the soil acquires mobility sufficient to permit both vertical and horizontal movements, if not confined. Soils most susceptible to liquefaction are loose, uniformly graded, fine-grained, sands and loose silts with very low cohesion. The State seismic hazards maps relevant to the project site indicate the project site is located in an area considered potentially susceptible to earthquake-induced liquefaction (Murray Engineers 2016).

Lateral Spreading

Lateral spreading is a type of ground failure related to liquefaction. It consists of the horizontal displacement of flat-lying soil material toward a free face (such as the steep bank of a stream channel). The nearest waterway is the highly disturbed San Tomas Aquino Creek, approximately 1.15 mile west of the project site. Another nearby waterway is the Guadalupe River, approximately 1.23 mile east of the project site.

However, because the topography of the project site is flat and there are no open faces or slopes near the project site, the potential for lateral spreading at the project site is considered low.

Regulatory Setting

The project would be required to obtain building permits which would be issued by the city. The issuance of the building permits and oversight provided by the city would ensure that the project complies with the applicable building codes. There are no other geological resource-related LORS applicable to the project.

5.6.2 Environmental Impacts and Mitigation Measures

a. Would the project expose people or structures to 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.

NO IMPACT. The project site is located within the seismically active San Francisco Bay region. The Hayward fault is six miles from the site and is the closest known active fault listed on an Alquist-Priolo Earthquake Fault Zoning map. In addition, based on staff review of published literature, no faults have been identified that transect the site; therefore, surface rupture at the project site resulting from seismic activity is unlikely.

ii) Strong seismic ground shaking?

LESS THAN SIGNIFICANT IMPACT. The design of the project, including the building foundations, would accommodate the impacts of strong seismic ground shaking. The project would be designed and constructed in accordance with the current (2016) California Building Code and standard engineering safety techniques, including site preparation, compaction, trench excavation, and drainage. In addition, the project applicant would be required to prepare a geotechnical engineering report with project-specific design specifications subject to review and approval by the city building official prior to issuance of permits. With implementation of seismic design guidelines in the current California Building Code and project-specific recommendations in a final geotechnical engineering report, the project would not expose people or property to significant impacts associated with geologic or seismic conditions onsite.

iii) Seismic-related ground failure, including liquefaction?

LESS THAN SIGNIFICANT IMPACT. The site is located within an earthquake-induced liquefaction hazard zone, so there is potential for some of the looser granular and low-plasticity soil layers underlying the project site to liquefy during a major earthquake event. The design of the project, including the building foundations, would accommodate any such differential settlement. There are two options for the building foundations: a deep pile system consisting of auger cast displacement piles; and a rigid mat foundation combined with a deep ground improvement method (Murray Engineers 2016). The project would be designed and constructed in accordance with the current (2016) California Building Code, and standard engineering safety techniques, including site preparation, compaction, trench excavation, and drainage.

In addition, the project applicant would be required to prepare a geotechnical engineering report with project-specific design specifications subject to review and approval by the city building official prior to issuance of permits. With implementation of seismic design guidelines in the current California Building Code and project-specific recommendations in a final geotechnical engineering report, the project would not expose people or property to significant impacts associated with geologic or seismic conditions onsite.

iv) Landslides?

LESS THAN SIGNIFICANT IMPACT. There is low potential for landslides to occur at the project site because the topography of the project site is flat and there are no open faces or slopes near the site.

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

LESS THAN SIGNIFICANT IMPACT. Construction activities (e.g., excavation and grading) could temporarily increase sedimentation and erosion by exposing on-site soils to wind and runoff until construction is complete and new vegetation is established. To mitigate this potential impact, the following mitigation measures were adopted in the MND. Staff has evaluated these measures and considers them satisfactory mitigation measures, without modification.

MM GEO-1.1: All excavation and grading work shall be scheduled in dry weather months, or the construction sites shall be weatherized to withstand or avoid erosion.

MM GEO-1.2: Stockpile and excavated soils shall be covered with secured tarps or plastic sheeting.

MM GEO-1.3: Vegetation in disturbed areas shall be replanted as quickly as possible.

Construction of the project would involve a small amount of trenching. The trenching alone would not result in measurable soil erosion. However, if excavated soils are stockpiled during the trenching activities, compliance with the Mitigation Measure MM GEO-1.2 would mitigate any potential soil erosion impacts to less than significant levels.

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?

LESS THAN SIGNIFICANT IMPACT. The project site could experience seismic shaking and potential liquefaction during a strong seismic event, which could result in differential settlement. The design of the project facilities, including the building foundations, would accommodate any such differential settlement. Two potential options for stabilizing the building foundations are: a deep pile system consisting of auger cast displacement piles; and a rigid mat foundation combined with a deep ground improvement method (Murray Engineers 2016). The data center and the structures to support the data center would be designed and constructed in accordance with the current (2016) California Building Code and standard engineering safety techniques, including site preparation, compaction, trench excavation, and drainage.

In addition, the project applicant would be required to prepare a geotechnical engineering report with project-specific design specifications, subject to review and approval by the city building official prior to issuance of permits. With implementation of seismic design guidelines in the current California Building Code and project-specific recommendations in a final geotechnical engineering report, the project would not expose people or property to significant impacts associated with geologic or seismic conditions onsite.

d. Would the project be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?

LESS THAN SIGNIFICANT IMPACT. The near-surface material at the project site is highly expansive. At-grade structures or hardscape outside of the proposed buildings would be susceptible to seasonal expansive soil movement. However, with implementation of the recommendations presented in the *Geotechnical Investigation* (Murray Engineers 2016), including implementation of either of the proposed foundation options (a deep pile system consisting of auger cast displacement piles or a rigid mat foundation combined with a deep ground improvement method), shrink and swell of the surficial soil would not have a significant impact on the structural integrity of the proposed improvements. Project facilities would be designed to withstand soil hazards at the project site (e.g., expansive soils) and would not result in substantial risks to life or property.

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?

NO IMPACT. The project would be connected to the city's existing sanitary sewer system and would not use any septic systems or alternative wastewater disposal systems. Therefore, there would be no impact with respect to soil suitability conditions for waste disposal.

New Proposed Mitigation Measures: No additional mitigation measures are required beyond those already adopted by the city for the original project.

5.6.3 References

California Energy Commission 2018—Data Clarification Questions and Responses for the McLaren Backup Generation Facility SPPE application review—Supplement for Geo/Paleo and Noise. June 2018. TN223773.

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City of Santa Clara 2017—McLaren Data Center Project Initial Study

Jennings and Saucedo 1994—Jennings Charles W. and Saucedo, George J., Fault activity map of California and adjacent areas, with locations and ages of recent volcanic eruptions, California Geologic Data map Series map No. 6, scale 1:750,000

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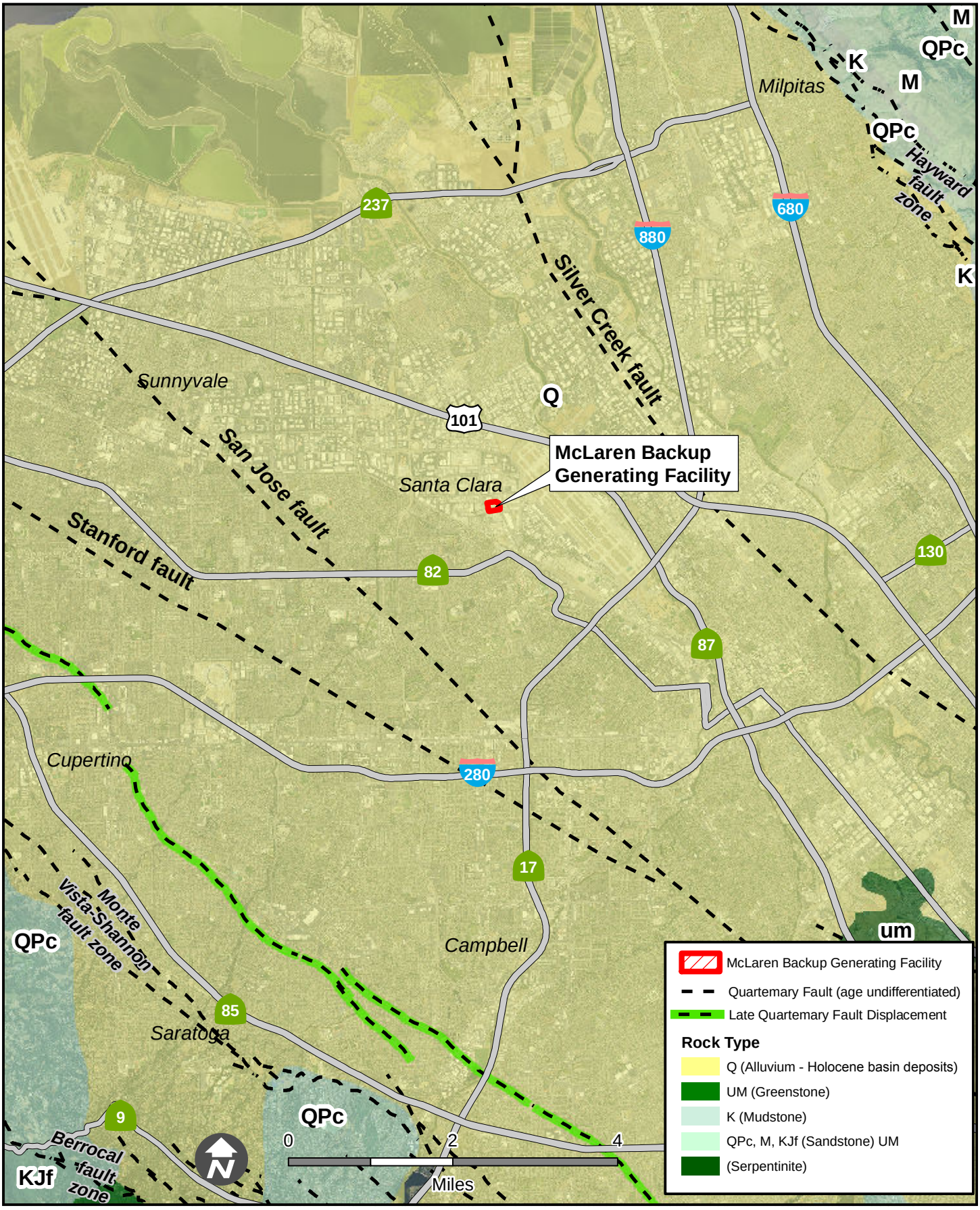
Vantage 2017—Vantage Data Centers, LLC. Application for Small Power Plant Exemption: McLaren Backup Generating Facility (17-SPPE-1). December 2017. TN22041-13.

Vantage 2018—Vantage Data Centers, LLC. Vantage Data Center's Revised SPPE Application for McLaren Backup Generating Facility. May 21, 2018. TN223483.

GEOLOGY AND SOILS - FIGURE 1

McLaren Backup Generating Facitlity - Geologic Map

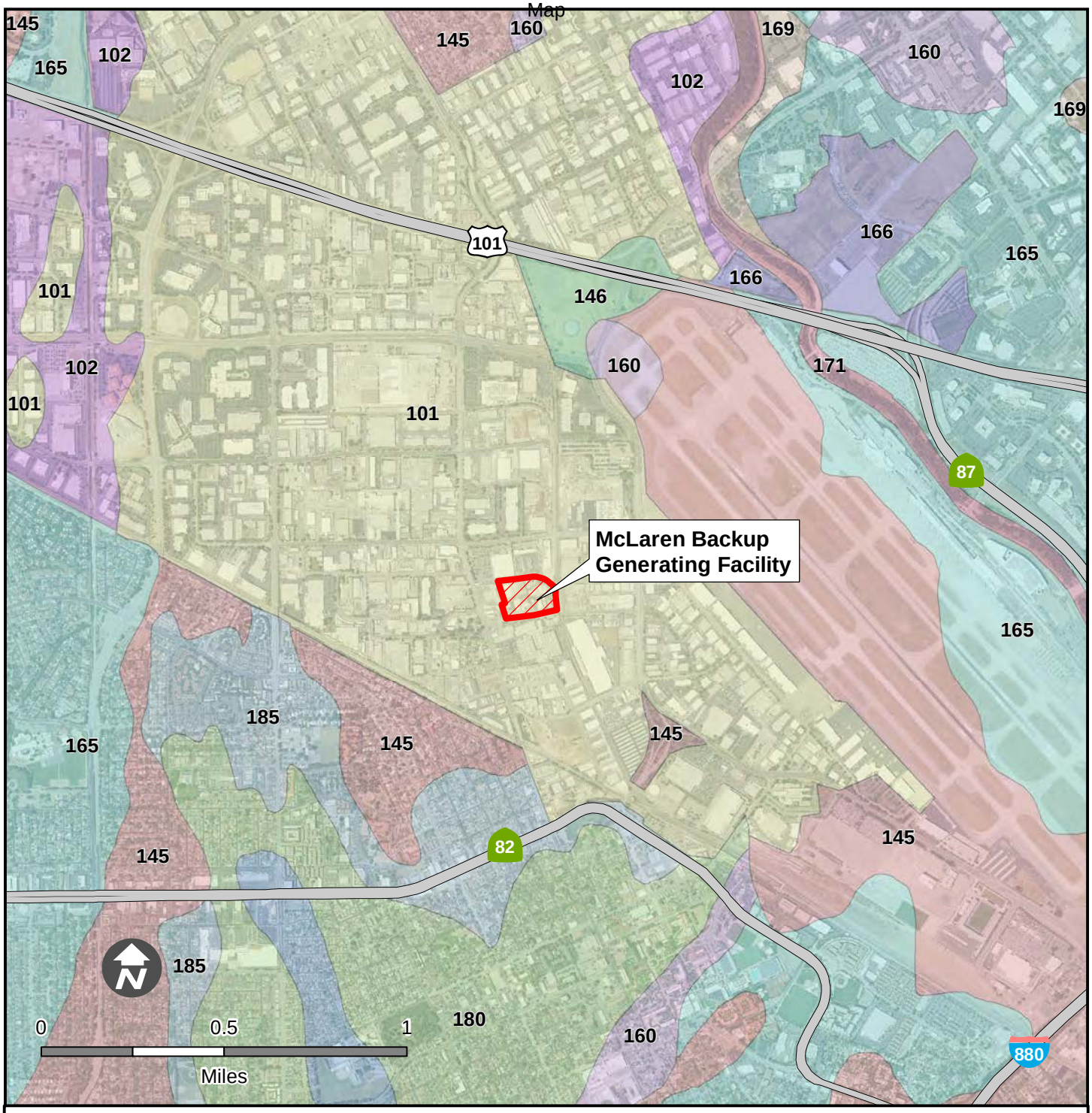


CALIFORNIA ENERGY COMMISSION - SITING, TRANSMISSION AND ENVIRONMENTAL PROTECTION DIVISION

SOURCE: California Energy Commission, USGS, & NAIP

GEOLOGY AND SOILS - FIGURE 2

McLaren Backup Generating Facitlity - Soil Series Map



McLaren Backup Generating Facility

Soil Units

- 101- Urban land- 0 to 2 percent slopes, basins
- 102- Urban land, 0 to 2 percent slopes, alluvial fans
- 140- Urban land-Flaskan complex, 0 to 2 percent slopes
- 145- Urbanland-Hangerone complex, 0 to 2 percent slopes, drained
- 146- Hangerone clay loam, drained, 0 to 2 percent slopes
- 160- Urbanland-Clear Lake complex, 0 to 2 percent slopes
- 165- Urbanland-Campbell complex, 0 to 2 percent slopes, protected
- 166- Campbell silt loam, 0 to 2 percent slopes, protected
- 169- Urbanland-Elder complex, 0 to 2 percent slopes, protected
- 171- Elder fine sandy loam, 0 to 2 percent slopes, rarely flooded
- 180- Urbanland-Newpark complex, 0 to 2 percent slopes
- 185- Urban Land - Bayshore complex, 0 to 2 percent slopes, drained

CALIFORNIA ENERGY COMMISSION - SITING, TRANSMISSION AND ENVIRONMENTAL PROTECTION DIVISION

SOURCE: California Energy Commission, USGS, & NAIP

5.7 Greenhouse Gas Emissions

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

Environmental checklist established by CEQA Guidelines, Appendix G.

5.7.1 Setting

Unlike emissions of criteria and toxic air pollutants, which have local or regional impacts, emissions of greenhouse gases (GHGs) have a much broader, global impact. Global warming associated with the "greenhouse effect" is a process whereby GHGs accumulating in the atmosphere contribute to an increase in the temperature of the earth's atmosphere. The principal GHGs contributing to global warming and associated climate change are carbon dioxide (CO2), methane (CH4), nitrous oxide (N2O), and fluorinated compounds. 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.

Regulatory Background

Federal

In April 2007, the U.S. Supreme Court held that GHG emissions are pollutants within the meaning of the Clean Air Act (CAA). In reaching its decision, the Court also acknowledged that climate change results, in part, from anthropogenic causes (Massachusetts et al. v. Environmental Protection Agency 549 U.S. 497, 2007). The Supreme Court's ruling paved the way for the regulation of GHG emissions by U.S. Environmental Protection Agency (U.S. EPA) under the CAA.

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

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

In 2009, the U.S. EPA issued the Final Mandatory Reporting of Greenhouse Gases Rule, which requires reporting of GHG emissions from large sources and suppliers in the United States. This rule requires suppliers of fossil fuels and industrial GHGs, manufacturers of vehicles and engines outside of the light-duty sector, and facilities that emit more than 25,000 metric tons of CO_2e ($MTCO_2e$) per year, to submit annual reports to the U.S. EPA. The rule is intended to collect accurate and timely emissions data to guide future policy decisions on climate change.

Historically, the U.S. EPA has mandated that PSD and Title V requirements apply to facilities whose stationary source CO_2e emissions exceed 100,000 tons per year. However, the Supreme Court decision in Utility Air Regulatory Group v. U.S. EPA et al. (Supreme Court Case 12-1146) found that the U.S. EPA does

not have the authority to require PSD and Title V permitting for facilities based solely on GHG emissions. Additionally, the Supreme Court found that the U.S. EPA can regulate GHG emissions from sources which are already subject to PSD and Title V requirements due to emissions of other pollutants.

The proposed project would not be impacted by these regulations.

State

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

In 2006, the California State Legislature passed the Global Warming Solutions Act of 2006 (AB 32), which provides the framework for regulating GHG emissions in California. This law requires the California Air Resources Board (ARB) to design and implement emission limits, regulations, and other measures such that statewide GHG emissions are reduced in a technologically feasible and cost-effective manner to 1990 levels by 2020. The statewide 2020 emissions limit is 427 million metric tons CO_2e.

Part of ARB's direction under AB 32 was to develop a scoping plan that contains the main strategies California will use to reduce GHG emissions that cause climate change. ARB first approved the AB 32 Scoping Plan in 2008 and released its first update in 2014. The scoping plan includes a range of GHG reduction actions, which include direct regulations, alternative compliance mechanisms, monetary and non-monetary incentives, voluntary actions, market-based mechanisms such as a cap-and-trade system, and an AB 32 cost of implementation fee regulation to fund the program.

In 2006, the CPUC and California Energy Commission established requirements for the utilities under the Electricity Greenhouse Gas Emission Standards Act (SB 1368[3]), which requires that generation and contracts be subject to a GHG Environmental Performance Standard (EPS) of 1,100 pounds (or 0.5 metric tons) of CO_2 per megawatt-hour (MWh) of electricity produced. The EPS applies to base load power from new power plants, new investments in existing power plants, and new or renewed contracts with terms of five years or longer, including contracts with power plants located outside of California.[4] Implementation of the AB 32 Scoping Plan requires careful coordination on the state's energy policies, meaning that CPUC and ARB are working closely to implement the recommendations in the Scoping Plan. Additionally, the Intergovernmental Panel on Climate Change (IPCC), an international scientific body, has established that one of its Key Mitigation Technologies and Practices for Energy Supply is: improved energy supply and distribution efficiency.[5]

On April 29, 2015, Governor Brown issued Executive Order B-30-15, directing state agencies to implement measures to reduce GHG emissions 40 percent below their 1990 levels by 2030 and to achieve the previously-stated goal of an 80 percent GHG reduction by 2050. On September 8, 2016, Senate Bill (SB) 32, codified as Section 38566 of the Health and Safety Code, was enacted. It extends California's

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3 Public Utilities Code § 8340 et seq.

4 See Rule at http://www.cpuc.ca.gov/PUBLISHED/FINAL_DECISION/64072.htm

5 IPCC (Intergovernmental Panel on Climate Change). 2007. Working Group III contribution to the Intergovernmental Panel on Climate Change Fourth Assessment Report, Climate Change 2007: Mitigation of Climate Change. May.

commitment to reduce GHG emissions by requiring the state to reduce statewide GHG emissions by 40 percent below 1990 levels by 2030. In response, ARB updated the AB 32 Scoping Plan in November 2017 to establish a path that will get California to its 2030 target.

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

In 2002, California initially established its Renewables Portfolio Standard (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 California Executive Order S-14-08 (November 2008) required California utilities to reach the 33 percent renewable electricity goal by 2020, consistent with the AB 32 Scoping Plan. In April 2011, Senate Bill 2 of the First Extraordinary Session (SB X1-2) was signed into law. SB X1-2 expressly applies the new 33 percent RPS by December 31, 2020, to all retail sellers of electricity and establishes renewable energy standards for interim years prior to 2020. On October 7, 2015, Senate Bill (SB) 350 was signed into law, establishing new clean energy, clean air and greenhouse gas 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.

Regional

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

BAAQMD publishes CEQA guidelines (updated May 2017 [BAAQMD 2017b]) to assist lead agencies in evaluating a project's potential impacts on air quality. The CEQA Guidelines document describes the criteria that BAAQMD uses when reviewing and commenting on the adequacy of environmental documents. It recommends thresholds for use in determining whether projects 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 also outline a methodology for estimating GHGs.

Local

City of Santa Clara General Plan. The Santa Clara 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 Santa Clara 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

Santa Clara General Plan.

Climate Action Plan. The City of Santa Clara has a comprehensive GHG emissions reduction strategy (Climate Action Plan or CAP) to achieve its fair share of statewide emissions reductions for the 2020 timeframe consistent with AB 32, the Global Warming Solutions Act. The CAP was adopted on December 3, 2013. The City of Santa Clara CAP specifies the strategies and measures to be taken for a number of focus areas (coal-free and large renewables, energy efficiency, water conservation, transportation and land use, waste reduction, etc.) citywide to achieve the overall emission reduction target, and includes an adaptive management process that can incorporate new technology and respond when goals are not being met.

A key reduction measure that is being undertaken by the City of Santa Clara under the CAP is in the Coal-Free and Large Renewables focus area. The city operates Silicon Valley Power (SVP), a publicly owned utility that provides electricity for the community of Santa Clara, including the project site. Since nearly half (48 percent) of Santa Clara's GHG emissions result from electricity use, removing GHG-intensive sources of electricity generation (such as coal) is a major focus area in the CAP for achieving the city's GHG reduction goals. This measure is being undertaken by SVP.

CEQA clearance for all discretionary development proposals are required to address the consistency of individual projects with reduction measures in the 2010 CAP and goals and policies in the Santa Clara General Plan designed to reduce GHG emissions. Compliance with appropriate measures in the CAP would ensure an individual project's consistency with an adopted GHG reduction plan. Projects that are consistent with the CAP would have a less than significant impact related to GHG emissions in 2020.

Existing Conditions (City of Santa Clara's IS/MND)

The project site is currently used for industrial warehouses, manufacturing, and office purposes as well as associated surface parking. GHG emissions from traffic trips to and from the project site are minimal.

The City of Santa Clara's IS/MND states: *"GHG emissions worldwide contribute, on a cumulative basis, to the significant adverse environmental impacts of global climate change. No single land use project could generate sufficient GHG emissions on its own to noticeably change the global average temperature. The combination of GHG emissions from past, present, and future projects in the City, the entire state of California, and across the nation and around the world, contribute cumulatively to the phenomenon of global climate change and its associated environmental impacts.*

AB 32 establishes the requirement for reducing statewide GHGs to 1990 emissions levels by 2020. A number of air quality management agencies throughout the state have drafted or adopted varying threshold approaches and guidelines for analyzing 2020 operational GHG emissions in CEQA documents. The different thresholds include: (1) compliance with a qualified GHG reduction strategy, (2) performance-based reductions, (3) numeric "bright thresholds, (4) compliance with regulatory programs, and (5) efficiency-based thresholds. The California Supreme Court decision in the Newhall Ranch decision confirmed that "when an agency chooses to rely completely on a single quantitative method to justify a no-significance finding, CEQA demands the agency research and document the quantitative parameters essential to that method."

The Newhall Ranch decision also identified the need to analyze both near-term and post-2020 emissions, as applicable, stating that an "EIR taking a goal-consistency approach to CEQA significance may in the near future need to consider the project's effects on meeting longer term emissions

reduction targets." All current CEQA GHG threshold concepts recommended by expert agencies are based on AB 32's requirement to reduce statewide GHG emissions to 1990 levels by 2020. However, SB 32 establishes a statewide GHG-reduction goal of 40 percent below 1990 levels by 2030. State and local air district guidance on addressing project-level GHG impacts in relation to the 2030 target outlined under SB 32. On April 29, 2015, Governor Brown issued Executive Order B-30-15, directing state agencies to implement measures to reduce GHG emissions 40 percent below their 1990 levels by 2030 and to achieve the previously stated goal of an 80 percent GHG reduction by 2050.

In light of the Newhall Ranch decision, the following section discusses each of the five threshold approaches recommended by the California Supreme Court and analyzes its specific applicability to the project."

Compliance with a qualified GHG reduction strategy. In the City of Santa Clara's IS/MND Section 4.7.1, Setting, the city adopted a CAP in 2013. The City of Santa Clara's IS/MND states: *"The CAP was prepared consistent with CEQA Guidelines Sections 15183.5 and includes a 2020 GHG reduction target based on AB 32 goals. Projects that are consistent with the CAP may tier from the environmental analysis prepared for the CAP and determine GHG impacts in 2020 to be less than cumulatively considerable. While the CAP includes a post-2020 target, it does not currently include sufficient strategies to achieve the goal. Accordingly, projects with operational emissions beyond 2020 cannot tier from the CAP. Since the proposed project will not be complete until 2023, it is not eligible to use the CAP to evaluate full-build emissions. However, consistency with the CAP framework is considered since many of the policies will likely be carried forward by the City to address post-2020 emissions."*

Performance-based reductions. The City of Santa Clara's IS/MND states: *"Performance-based thresholds are based on a percentage reduction from a projected future condition (for example, reducing future business-as-usual [BAU] emissions by the AB 32 target of 29 percent [below 2020 BAU levels) through a combination of State measures, project design features (e.g., renewable energy], or mitigation). With the Newhall Ranch decision, relating a given project to the achievement of state reduction targets requires adjustments to ARB's statewide BAU model not only to isolate new development emissions, but also to consider unique geographic conditions that would be required to use the BAU performance-based methodology for a specific project. To date, this type of adjustment to the statewide BAU target has not been formulated and, therefore, is not appropriate for the project's analysis"*.

Numeric "bright-line" thresholds. The City of Santa Clara's IS/MND states: *"The BAAQMD has adopted a threshold of 1,100 metric tons carbon dioxide equivalent (CO2e) for land use development projects and a threshold of 10,000 metric tons CO2e for stationary source projects. The land use development threshold is explicitly tied to AB 32 and does not consider deeper reductions that will be required post-2020. Moreover, the threshold is specific to emissions generated by residential and commercial uses, and does not address emissions from industrial sources. Accordingly, the land use development threshold is not applicable to the proposed project. The BAAQMD's 10,000 metric tons CO2e threshold is consistent with stationary source thresholds adopted by other air quality management districts throughout the state. The threshold level is intended to capture 95 percent of all GHG emissions from new permit applications from stationary sources in the San Francisco Bay Area Air Basin. The emergency generators included as part of the project would be permitted sources, and as such, the BAAQMD's 10,000 metric ton CO2e threshold is appropriate for analyzing the significance of emissions generated by the generators. However, the threshold cannot be used to evaluate emissions from other project sources (e.g., building energy consumption)*". To see how this applies, please see below section 4.7.2.2 Overview of GHG Emissions and **GHG Table 5.7-2**.

Compliance with Regulatory Programs. The City of Santa Clara's IS/MND states: *"This approach includes an assessment of the project's compliance with regulatory programs designed to reduce GHG emissions from particular activities (e.g., building efficiency, transportation, water usage). To the extent that the project's design features comply with or exceed the regulations adopted by ARB or other state agencies, the City could appropriately rely on their use as showing that the project is reducing emissions consistent with statewide legislation and, thus, that emissions are less than significant. This approach is applicable to the proposed project and used to evaluate non-stationary source GHG emissions"*. To see how this applies, please see below section 4.7.2.3 Consistency with Plans and Programs.

Efficiency-based thresholds. The City of Santa Clara's IS/MND states: *"BAAQMD has adopted efficiency based thresholds for land use development projects. The efficiency-based thresholds are calculated by dividing emissions associated with residential and commercial uses (also termed the "land use sector" in the AB 32 Scoping Plan) within the state (or a certain geographic area) by the sum of jobs and residents within the same geography. The sum of jobs and residents is called the "service population," and a project's service population is defined as the people that work and live within the project site. Because BAAQMD's efficiency-based thresholds are based on the land use sector (residential and commercial uses) and only account for land use-related emissions and residential population and employment, they may be misleading to use for industrial uses projects, and are therefore not applicable to the proposed project.*

Based on the available threshold concepts recommended by air districts or other lead agencies and recent case law, GHG impacts from the proposed project's emergency generators would be considered less than significant impact if emissions are below the BAAQMD's bright-line threshold of 10,000 metric tons CO2e per year. GHG impacts from all other project emission sources would be considered less than significant impact if the project is consistent with the City's CAP and applicable regulatory programs and policies adopted by ARB or other California agencies".

5.7.2 Environmental Impacts and Mitigation Measures

a. Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?

LESS THAN SIGNIFICANT IMPACT. As shown in **GHG Table 5.7-2**, emergency generator testing would generate an additional 5,044 metric ton CO_2e per year. As compared to the CO_2e emissions associated with the project wide emissions in **GHG Table 5.7-3**, the emergency generators would be a very small amount of the total GHG emissions. The energy generators (MGBF) as compared to the total project (MBGF and MDC) would be around 4.6% and 3.5%, respectively depending on the comparison with the SVP electric power use or the California average emissions rate for power use in **GHG Table 5.7-3**. Emissions from the emergency generators are below BAAQMD's stationary source threshold and are therefore considered less than significant.

Construction Emissions. According to the City of Santa Clara's IS/MND, *"construction of the project would result in GHG emissions generated by vehicle trips (i.e., construction worker and haul truck trips) and operation of construction equipment*". These sources would generate 2,539 metric tons CO_2e, including the *de minimis* of installation of 18 additional emergency engines over the course of the five-year construction-period. Because construction emissions would cease once construction is complete, they are considered short-term. The BAAQMD CEQA Guidelines do not identify a GHG emission threshold for construction-related emissions. Instead BAAQMD recommends that GHG emissions from construction be quantified and disclosed. The BAAQMD further recommends

incorporation of BMPs to reduce GHG emissions during construction, as feasible and applicable. BMPs may include use of alternative-fueled (e.g., biodiesel, 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 or demolition materials.

Operational Emissions. According to the City of Santa Clara's IS/MND, *"GHG emissions from the project operation would consist of emissions from vehicle trips to and from the proposed facility and occupancy of data server rooms, including emissions related to the generation of electricity used in the data center building. Approximately 29 employees, including fourteen operations personnel, thirteen security personnel, and two janitors, would be employed at the project site. Security and operations personnel would be employed in shifts, resulting in a maximum of 16 employees on-site in a single day. According to the City of Santa Clara's IS/MND, there would be a maximum of 410 total daily trips, including vendors, clients, visitors, and employee trips. Data centers are an energy-intensive land use, requiring more electricity than other types of development. The primary function of the proposed data center is to house computer servers, which require electricity and cooling 24 hours a day to operate.*

The generators are expected to be operated for testing purposes, but there is would be 50 hours per year permit limit on each of the engines. If all the emergency generators were operated at full load for the full 50 hours per year, the engines would use 10,870[6] barrels per year (bbl/year). The proposed consumption of diesel by the MBGF would be approximately 0.003[7] percent of the total California capacity".

Silicon Valley Power Electricity Generation. The City of Santa Clara's IS/MND states: *"Electricity for the project would be provided by SVP. The City currently has ownership interest, or has purchase agreements for nearly 1,080 MW of electricity.[8] This capacity far exceeds the City's current peak electricity demand of approximately 522 MW. No new generation peak capacity is necessary to meet the capacity requirements of new construction, or redeveloped facilities within the City to meet the near or projected future demand.*

The City 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, the City encourages the use of renewable resources and clean distributed generation, and has seen a significant increase in its applications for large and small rooftop photovoltaics (PV). Demand displaced by customer-based renewable projects is also available to meet new load requests".

The city seeks to meet its renewable performance standard (RPS) goal through the addition of new renewable resources. SVP has a lower emission rate than the statewide California power mix because it utilizes a much higher portion of renewable sources. A comparison of SVP's and the statewide power mix is shown in **GHG Table 5.7-1** and has been updated with 2016 data since the City of Santa Clara initially published their IS/MND.

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[6] Number updated from IS/MND to represent the new engine size in the Revised SPPE Application (Vantage 2018e); 194.3 gal/hr x 50 hrs/year x 47 engines = 456, 600 gal/yr = 10,870 bbl/yr.

[7] California Energy Commissions 2016 Weekly Fuels Watch Report of 326,538,000 barrels; 10,870/326,538,000 = 0.003 percent.

[8] Silicon Valley Power, City of Santa Clara. The Silicon Valley Power Resources Map. Available: <http://www.siliconvalleypower.com/home/showdocument?id=5763>. Accessed: February 8, 2018.

GHG Table 5.7-1 Comparison Of SVP and Statewide Power Mix

Energy Resources	2016 SVP Power Mix	2016 California Power Mix (for Comparison)
Eligible Renewable (Biomass & waste, Geothermal, Eligible Hydro, Solar, Wind)	28%	25.5%
Coal	10%	4.1%
Large Hydro	24%	10.2%
Natural Gas	35%	36.5%
Nuclear	0%	9.2%
Other	0%	0.14%
Unspecified sources of power (not traceable to specific sources)	4%	14.4%
Total	100.0%	100.0%

Source: California Energy Commission. 2017. Total System Power. Available: <http://www.energy.ca.gov/almanac/electricity_data/total_system_power.html >. Accessed: February 7, 2017; and Silicon Valley Power. No date. Power Content Label. Available: <http://www.siliconvalleypower.com/svp-and-community/about-svp/power-content-label >. Accessed: February 7, 2017.

SVP's carbon intensity factor for 2016 was calculated as 380 pounds (0.172 metric tons) of CO_2 per megawatt-hour (MWh).[9] SVP's carbon intensity factor for electricity generation will continue to change as SVP's power mix continues to reduce the percentage of electricity produced by coal-fired power plants and increase the use of renewable resources. As noted above, the city and SVP have committed to coal-free and increased large renewables power generation as a part of the city's CAP.

Project Electricity Usage. As stated in the City of Santa Clara's IS/MND the projected critical demand for the entire project is 54 MW and the total projected demand is 76 MW.[10] On an annual basis, the project would consume 665,760 MWh per year at full build out.[11] The project's annual GHG emissions related to electricity use would be about 24 percent less per year by utilizing SVP's power mix versus the California statewide average power mix.

Other Project-Related Emissions. Other sources of emissions include backup generator testing (i.e., stationary sources), water use, waste generation, mobile (vehicle), and area (landscaping) sources. Emissions from backup generator testing and maximum allowed use would result from the consumption of diesel fuel to test each generator for 50 hours per year. Water consumption results in indirect emissions from electricity usage for water conveyance and wastewater treatment. Water consumption results in indirect emissions from electricity usage for water conveyance and wastewater treatment. As discussed in the **City of Santa Clara's IS/MND** in Section 4.17, *Utilities and Service Systems*, *"indoor uses at the project site would generate a potable water demand of approximately 20.7 million gallons of water per year, or 63.7 acre-feet per year, and a recycled water demand of 143.3 million gallons of water per year, or 439.8 acre-feet per year (primarily due to the recycled water use of the proposed cooling towers). Daily operations at the data center would*

[9] Vantage 2017b, page 75.

[10] Rosendin Electric. 2016. Letter to Nick Steketee. September 14. City of Santa Clara's Initial Study, Appendix E.

[11] Vantage 2017b, page 75.

generate waste, which results in fugitive GHG emissions during decomposition. Mobile emissions associated with employees, clients, and visitors traveling to and from the site were computed in CalEEMod model, assuming a maximum of 410 daily trips".

Summary of GHG Emissions. Emissions from stationary sources (i.e., emergency generator) testing and maintenance are presented in **GHG Table 5.7-2**.

GHG TABLE 5.7-2 Summary Of Estimated GHG Emissions From Stationary Sources During Project Operation (Metric Tons Per Year Of CO_2e)

	Annual Emissions at Full Build out (2023)	
Source	**Project Emissions Based Upon SVP Electric Power Use** (Metric Tons Per Year of CO_2e)	**Estimated Project Emissions Based Upon California Average Emissions Rate for Electric Power** (Metric Tons Per Year of CO_2e)
Stationary Sources – emergency generators [a]	5,044	5,044
BAAQMD Threshold	10,000	10,000
Exceed Threshold?	No	No

Source: Vantage 2018e, Table 5.
Notes:
a updated to include the installation of 16 additional emergency engines to the MGBF.

Emissions from electricity use, mobile and area sources, and water use and waste generation (i.e., project operation) are provided in **GHG Table 5.7-3**. Staff did not update **GHG Table 5.7-3**.

GHG TABLE 5.7-3[a] Summary Of Estimated GHG Emissions From Electricity Use, Mobile Sources, Area Sources, Water Use, and Waste Generation During Project Operation (Metric Tons Per Year Of Co_2e)

	Annual Emissions at Full Build out (2023)	
Source	**Project Emissions Based Upon SVP Electric Power Use** (Metric Tons Per Year of CO_2e)	**Estimated Project Emissions Based Upon California Average Emissions Rate for Electric Power** (Metric Tons Per Year of CO_2e)
Electricity Use	116,848	153,862
Mobile Sources – employees and visitors	435	435
Area Sources – landscaping	<1	<1
Water Use & Wastewater Generation	377	426
Waste Generation	235	235
Total	117,896	154,958

Source: Vantage 2017b, page 76

As shown in **GHG Table 5.7-3**, operation of the project would generate 117,896 to 154,958 metric tons CO_2e, depending on the power provider. This emissions estimate does not include efficiency measures that would be pursued as part of the project, nor does it reflect implementation of state and local measures to reduce GHG emissions (e.g., SB 350). In order to reduce GHG emissions and reduce the use of energy related to building operations, the project chillers would be installed with

variable frequency drives (VFD) to provide efficient operation. The project would comply with all applicable city and state green building measures, including Title 24, Part 6, California Energy Code baseline standard requirements for energy efficiency, based on the 2016 Energy Efficiency Standards requirements, and the 2016 California Green Building Standards Code, commonly referred to as CALGreen (California Code of Regulations, Part 11). In addition, the project would include four electrical vehicle charging stations that would serve nine electrical vehicle parking spots. Water use reduction measures would also be incorporated in the building design, including the use of recycled water in the cooling towers (City of Santa Clara IS/MND).

Conclusion

For stationary-source projects, the threshold is 10,000 metric tons per year (MT/yr) of CO_2e. Stationary-source projects include land uses that would accommodate processes and equipment that emit GHG emissions and would require BAAQMD permit to operate. If annual emissions of operational-related GHGs exceed these levels, the proposed project would result in a cumulatively considerable contribution of GHG emissions and a cumulatively significant impact to global climate change. For the McLaren Data Center Project, the project emissions are expected to be less than the 10,000 MTCO2e/yr threshold and would not be considered to be cumulatively significant.

b Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?

LESS THAN SIGNIFICANT IMPACT. The CAP, which is part of the Santa Clara General Plan, identifies a series of GHG emissions reduction measures to be implemented by development projects that would allow the city to achieve its GHG reduction goals in 2020. The measures center around seven focus areas: coal-free and large renewables, energy efficiency, water conservation, waste reduction, off-road equipment, transportation and land use, and urban heat island effect.

The CAP includes measures applicable to city government, existing development and new development projects in the city. Discussion of the project's conformance with the applicable reduction measures for new development in the CAP are provided below.

Energy Efficiency Measures

Overview: Power Usage Effectiveness During Operation

As discussed in the City of Santa Clara's IS/MND **"***Power Usage Effectiveness, or PUE, is a metric used to compare the efficiency of facilities that house computer servers. PUE is defined as the ratio of total facility energy use to Information Technology (IT) (i.e., server) power draw (e.g., PUE = Total Facility Source Energy/ IT Source Energy). For example, a PUE of two, means that the data center or laboratory must draw two watts of electricity for each watt of power consumed by the IT/server equipment. It is equal to the total energy consumption of a data center (for all fuels) divided by the energy consumption used for the IT equipment. The ideal PUE is one where all power drawn by the facility goes to the IT infrastructure.*

Vantage Data Centers, the project applicant, builds and manages data centers for tenants. The principle of Vantage Data Centers is that modern-day data center design should evolve in innovative ways that lead to dramatic gains in energy efficiency. All of these features have an impact on the power usage of a data center. With implementation of the proposed mechanical and electrical design

of the building and the anticipated data center occupancy, the PUE will be 1.5[12] at the proposed data center. The Uptime Institute conducted a study in 2014 and concluded that the average data center PUE in that year was 1.7, down from 1.89 in 2011[13]. The project would be below the 2014 average PUE (the most recent year for which data is available), resulting in a more efficient than average facility".

The City of Santa Clara's IS/MND states: "Measure 2.3, Data Centers, calls for completion of a feasibility study of energy efficient practices for new data center projects with an average rack power rating[14] of 15 kilowatts to achieve a PUE of 1.2 or lower.

The proposed project would have an average rack power rating range of 8-10 kilowatts. This would be below the criteria in Measure 2.3, and a formal feasibility study of energy efficient practices and achievement of a PUE of 1.2 or lower is not required".

Staff would like to note that the BAAQMD wrote a letter to the City of Santa Clara regarding the Mitigated Negative Declaration for the McLaren Data Center Project on March 8, 2017. The letter states: *"The MND concludes that this GHG impact will be less than significant impact because the project "would not conflict with the Santa Clara CAP (Climate Action Plan) or other plans, policies or regulations adopted for the purpose of reducing the emissions of GHG" (p. 81). The Air District and the State of California have established a long-term GHG reduction goal of 40% below 1990 levels by 2030. The MND itself notes on page 72 that the project is not eligible to use the CAP to evaluate full-build emissions to determine its significance under CEQA, because the CAP is based on 2020 GHG reduction goals and this project will not be completed before 2023. Therefore, the MND does not appear to provide the substantial evidence needed to justify a less than significant impact determination."*

BAAQMD staff recommended that *"the City require that all new land use projects include the most efficient GHG reduction strategies available at the time of project approval and construction. Thus, because the Project's GHG emissions are from electricity usage [of the MCD] ….. this Project could significantly reduce GHG emissions by purchasing all of its electricity from Santa Clara Green Power, which is available through Silicon Valley Power. The Project could further reduce its GHG impacts by installing solar panels over parking spaces and any roof area not being used for cooling towers or other equipment."*

Staff reviewed the City of Santa Clara's IS/MND and Green House Gas technical report and recommends that the McLaren Data Center incorporate these recommendations by the BAAQMD in order to be consistent with Measure 2.3 of the city's Climate Action Plan.

Water Conservation Measures. The City of Santa Clara's IS/MND states: *"Measure 3.1, Urban Water Management Plan targets, calls for a reduction in per capita water use to meet Urban Water Management Plan targets by 2020. As outlined in the City of Santa Clara's IS/MND Table 3.0-3 in Section 3.0, Project Description, development standards for water conservation would be applied to increase efficiency in indoor and outdoor water use areas. Furthermore, the project would comply with all applicable City and state water conservation (indoor and outdoor) measures, including Title 24, Part*

[12] Rosendin Electric. 2016. Letter to Nick Steketee. September 14. City of Santa Clara's Initial Study, Appendix E.

[13] Uptime Institute. 2014. 2014 Data Center Industry Survey. Available: <https://journal.uptimeinstitute.com/2014-data-center-industry-survey/>.

[14] 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.

6, California Energy Code baseline standard requirements for energy efficiency, based on the 2016 Energy Efficiency Standards requirements, and the 2016 California Green Building Standards Code, commonly referred to as CALGreen. Water conservation measures. These measures for the project would include:

- *site irrigation to be sourced from 100 percent non-potable water;*
- *use of recycled water in the cooling towers;*
- *water efficient landscaping with low usage plant material to minimize irrigation requirements; and*
- *use of ultra-low flow toilets and plumbing fixtures consistent with CalGreen mandatory measures for water reduction*".

Applicable General Plan Policies

The city adopted the Santa Clara 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 Santa Clara General Plan. In addition to the reduction measures in the Climate Action Plan, the Santa Clara General Plan includes goals and policies to address sustainability (see Appendix 8.13: Sustainability Goals and Policies Matrix in the*

Santa Clara General Plan) aimed at reducing the City's contribution to GHG emissions. For the project, implementation of policies that increase energy efficiency or reduce energy use would effectively reduce indirect GHG emissions associated with energy generation. The consistency of the project with the applicable land use, air quality, energy, and water policies in the Santa Clara General Plan is analyzed in ***GHG Table 5.7-4****. As shown, the project would be consistent with the applicable sustainability policies in the Santa Clara General Plan".*

GHG Table 5.7-4[15] Project Consistency With Santa Clara General Plan Sustainability Policies

Emission Reduction Policies	Project Consistency
Land Use Policies	
Encourage new developments proposed within a reasonable distance of an existing or proposed recycled water distribution system to utilize recycled water for landscape irrigation, industrial processes, cooling and other appropriate uses to reduce water use consistent with the CAP.	Consistent. The project would utilize recycled water for landscape irrigation and the cooling towers.
Encourage Transportation Demand Management strategies and the provision of bicycle and pedestrian amenities in all new development in order to decrease use of the single-occupant automobile and reduce vehicle miles traveled.	Consistent. The project would include bicycle and pedestrian amenities consistent with the city's requirements.
Air Quality Policies	
Encourage implementation of technological advances that minimize public health hazards and reduce the generation of air pollutants.	Consistent. The project would include four electrical vehicle charging stations.
Executive Order B-30-15 and SB 32 extended the goals of AB 32 and set a 2030 goal of reducing emissions 40 percent from 2020 levels. This Plan establishes a path that will get California to its 2030 target.	Consistent. Water conservation and energy efficiency measures included in the project would reduce GHG emissions associated with the generation of electricity.
Energy Policies	
Promote the use of renewable energy resources, conservation and recycling programs.	Consistent. 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 proposed building would limit water consumption. In addition, the project would have a "Cool Roof" utilizing reflective surfaces to reduce heat gains. Outside Air Economizers (OAE) will be utilized to cool the top floor of the proposed
Encourage new development to incorporate sustainable building design, site planning and construction, including encouraging solar opportunities.	

[15] Vantage 2017b, Table 4.7-4.

Reduce energy consumption through sustainable construction practices, materials and recycling.	buildings. The OAE controls would be configured to maximize free cooling.
Promote sustainable buildings and land planning for all new development, including programs that reduce energy and water consumption in new development.	
Land Use Policies	
Maximize the use of recycled water for construction, maintenance, irrigation and other appropriate applications.	Consistent. The project would utilize recycled water for landscape irrigation and in the cooling towers.

Bay Area 2010 Clean Air Plan

The City of Santa Clara's IS/MND states: "*The 2010 CAP includes performance objectives, consistent with the state's climate protection goals under AB 32 and SB 375, designed to reduce emissions of GHG emissions to 1990 levels by 2020 and 40 percent below 1990 levels by 2035. The 2010 CAP identifies a range of TCMs, Land Use and Local Impacts Measures, and Energy and Climate Measures that make up the Clean Air Plan's control strategy for emissions, including GHGs.*

Due to the relatively high electrical demand of the proposed data center, energy efficiency measures are included in the design and operation of the proposed on-site electrical and mechanical systems. This is in keeping with the general purpose of Energy Control Measure (ECM)-1 – Energy Efficiency in the 2010 CAP".

Plan One Bay Area/ California Senate Bill 375 – Redesigning Communities to Reduce Greenhouse Gases

The City of Santa Clara's IS/MND states: *"Under the requirements of SB 375, MTC and ABAG developed a SCS with the adopted Plan Bay Area to achieve the Bay Area's regional GHG reduction target. Targets for the MTC in the San Francisco Bay Area, originally adopted in September 2010 by ARB, include a seven percent reduction in GHG per capita from passenger vehicles by 2020 compared to emissions in 2005. The adopted target for 2035 is a 15 percent reduction per capita from passenger vehicles when compared to emissions in 2005. The emission reduction targets are for those associated with land use and transportation strategies only. Approximately 29 employees, including fourteen operations personnel, thirteen security personnel, and two janitors, would be employed at the project site. Security and operations personnel would be employed in shifts, resulting in a maximum of 16 employees on-site on a single day. As discussed in the City of Santa Clara's IS/MND Section 4.16, Transportation, the project would generate a maximum of 410 total daily trips, including vendors, clients, visitors, and employee trips. The number of net new project trips would likely be reduced when accounting for the removal of the trips to and from the project site that are currently generated by the approximately 60 existing employees at the project site. Due to the limited number of employees and visitors at the project site as well as the proposed TDM Program, the project would have less-than- significant traffic impacts during operation. Thus, the project would not contribute to a substantial increase in passenger vehicle travel within the region*".

Assembly Bill 32 Scoping Plan

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

As discussed above, the vast majority of the project's GHG emissions would result from energy use. Multiple AB 32 Scoping Plan measures address GHG emissions from energy. For example, the Cap-and-Trade Program, through the regulation of upstream electricity producers, will account for GHG emissions from the project and require emissions from covered sectors to be reduced by the amount needed to achieve AB 32's 2030 goal.

***Other Adopted Regulatory Programs (staff updated this section from what was in the* City of Santa Clara's IS/MND)**

The City of Santa Clara's IS/MND states: *"Policies outlined in the AB 32 Scoping Plan capture much of the state's framework for reducing GHG emissions. These programs will likely be extended beyond 2020 to address the State's 2030 GHG reduction goal. Senate Bill 350, which was adopted after preparation of the Assembly Bill 32 Scoping Plan, will also support California's long-term climate change objectives. Senate Bill 350 extends the State's Renewables Portfolio Standard from 33 percent in 2020 to 50 percent in 2030 and requires a doubling of statewide energy efficiency. In 2016, SVP's power mix included approximately 28 percent renewable power and the entire California electrical grid included approximately 25.5 percent renewable power (see* ***GHG Table 5.7-1****). There is no requirement that the fraction of renewable power increase linearly between 2020 and 2030, so estimating the operational GHG emissions in 2023 to account for the likely increasing renewable power in the supply is speculative. However, because the 2030 RPS is 50 percent in 2030, it is reasonable to assume that GHG emissions generated by project electricity consumption will continue to drop and will be consistent with California's climate goals for 2030 and Senate Bill 350. This point is particularly relevant to the project since the vast majority of its estimated GHG emissions would come from electricity consumption".*

Conclusion

With implementation of the efficiency measures to be implemented with the project and in combination with the green power mix utilized by SVP, GHG emissions related to the proposed project would not conflict with the Santa Clara CAP or other plans, policies or regulations adopted for the purpose of reducing the emissions of GHG. Stationary source emissions would also be less than BAAQMD's bright-line threshold of 10,000 MTCO2e/yr. Staff recommends that the McLaren Data Center incorporate the recommendations by the BAAQMD in order to be consistent with Measure 2.3 of the city's Climate Action Plan.

5.7.3 References

BAAQMD 2017a—Bay Area Air Quality Management District, 2017 Bay Area Clean Air Plan (CAP). April 19, 2017.

BAAQMD 2017b—Bay Area Air Quality Management District, California Environmental Quality Act, Air Quality Guidelines. Updated May 2017.

Vantage 2017b—Vantage Data Centers, LLC. Application for Small Power Plant Exemption: McLaren Backup Generating Facility (17-SPPE-1). Appendix B Part 1 (City of Santa Clara's IS/MND), dated December 2017. TN 222057

Vantage 2018a—Vantage Data Centers, LLC. Vantage Data Center's Revised SPPE Application for McLaren Backup Generating Facility. Air Quality Technical Report Replacement for MBGF Applicant for Small Power Plant Exemption: McLaren Backup Generating Facility, Appendix E-1, dated January 2018 (Ramboll 2017). TN 222104, docketed January 8, 2018.

Vantage 2018e—Vantage Data Centers, LLC. Vantage Data Center's Revised SPPE Application for McLaren Backup Generating Facility. Vantage Data Center's Revised SPPE Application for McLaren Backup Generating Facility - Air Quality and Public Health. TN 223484, docketed May 21, 2018.

5.8 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 for people residing or working in the project area?	☐	☐	☒	☐
f. For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?	☐	☐	☐	☒
g. Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	☐	☐	☐	☒
h. Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?	☐	☐	☐	☒

Environmental checklist established by CEQA Guidelines, Appendix G.

5.8.1 Setting

The McLaren Backup Generating Facility (MBGF) would be constructed within the boundaries of the McLaren Data Center (MDC) site. The MBGF would be a backup generating facility with a generation capacity of up to 98.7 MW to provide uninterruptible power supply to the MDC. The MBGF would consist of 47 diesel fired back up generators arranged in three generation yards. The project site is surrounded by industrial and commercial land uses. Each generator would integrate a dedicated diesel fuel tank with a capacity of 6,300 gallons.

5.8.2 Environmental Impacts and Mitigation Measures

a. Would the project create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?

LESS THAN SIGNIFICANT IMPACT. The MBGF would not routinely use, or dispose of, hazardous materials. No reportable quantities of acutely or extremely hazardous materials would be transported, stored, or used at the site.

During the construction phase of the project, the only hazardous materials used would be paints, cleaners, solvents, gasoline, motor oil, welding gases, and lubricants. Any impacts resulting from spills or other accidental releases of these materials would be limited to the site due to the small quantities involved, their infrequent use and hence reduced chances of release. Temporary containment berms would also be used to help contain any spills during the construction of the MBGF.

During the operational phase of the project, diesel fuel would be stored on-site but the generators would only use diesel fuel during emergencies, testing and maintenance. Since testing and maintenance is limited to no more than 50 hours of operation annually, routine deliveries of diesel fuel would be infrequent.

b. Would the project create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?

LESS THAN SIGNIFICANT IMPACT. The MBGF would not create a significant hazard to the public or environment due to an accidental release of diesel fuel. The diesel fuel would be stored in a belly tank underneath each generator. The belly tanks are capable of holding 6,300 gallons of diesel fuel. That is the amount of fuel needed for continuous 24-hour emergency operation of each generator. The potential for multiple double-walled tank failures simultaneously is extremely unlikely and therefore it is extremely unlikely that an accidental release of diesel fuel would create an offsite impact.

Each generator's integrated fuel tank would be double walled. The interstitial space between the walls of each tank would be continuously monitored electronically for the presence of liquids. The monitoring system would be electronically linked to an alarm system in the security office which would alert personnel if a leak were detected. Additionally, the generator units would be housed within an enclosure that prevents the intrusion of storm water.

The delivery of diesel fuel would happen on an as-needed basis by a tanker truck. Diesel delivery trucks would use wheel chocks to prevent the truck from leaving before complete disconnection of the transfer lines. An emergency pump shut-off would be utilized if a pump hose breaks during the fueling. In addition, spill catch basins would be located at each fill port of the diesel generators. The catch basin would be closed during fueling events to prevent the escape of any small spills.

c. Would the project emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?

NO IMPACT. There are no hazardous materials that would be emitted from the site at rates capable of creating offsite impacts and there are no schools within a one quarter mile radius of the MBGF.

d. Would the project be located on a site that is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?

NO IMPACT. The proposed MBGF would not be located on a listed hazardous waste site.

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 for people residing or working in the project area?

LESS THAN SIGNIFICANT IMPACT. The project would be located approximately 0.3 mile west of the Norman Y. Mineta San Jose International Airport. The MBGF would be within the airport influence area and subject to the Comprehensive Land Use Plan (CLUP) for the airport. The city of Santa Clara Mitigated Negative Declaration (MND) concluded that the project would be outside of all of the airport safety zones identified in the CLUP and the diesel exhaust stacks would not violate the airport's maximum height restriction. The addition of 16 generators to the project would not change the conclusions of the MND and the project's impact would continue to be less than significant.

f. For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?

NO IMPACT. The proposed project, MBGF, is not with the vicinity of a private airstrip.

g. Would the project impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?

NO IMPACT. There would be no impairment to an adopted emergency response plan or emergency evacuation plan.

h. Would the project expose people or structures to a significant risk of loss, injury, or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?

NO IMPACT. The proposed MBGF would be built on an existing industrial site that is located in Santa Clara. This site and the surrounding area are clear of substantial vegetation. Therefore there would be no impact from potential exposure to wildlife fires.

Previously Identified Mitigation Measures: See pages 86 and 87 of the IS/MND.

New Proposed Mitigation Measures: No additional mitigation measures are required beyond those already adopted by the city for the original project.

5.8.3 References

Vantage 2017 – DayZen, LLC. (TN 222041-8) docketed December 21, 2017. Application for Small Power Plant Exemption: McLaren Backup Generating Facility, Appendix C Part 1, dated December 2017

Vantage 2017 – DayZen, LLC. (TN 222041-9) docketed December 21, 2017. Application for Small Power Plant Exemption: McLaren Backup Generating Facility, Appendix C Part 2, dated December 2017

Vantage 2017 – DayZen, LLC. (TN 222041-10) docketed December 21, 2017. Application for Small Power Plant Exemption: McLaren Backup Generating Facility, Appendix D, dated December 2017

Vantage 2017 – DayZen, LLC. (TN222041-13) docketed December 21, 2017. Application for Small Power Plant Exemption: McLaren Backup Generating Facility, Appendix C Part 2, dated December 2017

Vantage 2017 – DayZen, LLC. (TN 222057) docketed December 26, 2017. Application for Small Power Plant Exemption: McLaren Backup Generating Facility, Appendix B Part 1, dated December 2017

5.9 Hydrology and Water Quality

Would the project:	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less than Significant Impact	No Impact
a. Violate Regional Water Quality Control Board water quality standards or waste discharge requirements?	☐	☐	☒	☐
b. Substantially deplete groundwater supplies or interfere substantially with groundwater discharge such that there would be a net deficit in the aquifer volume or a lowering of the local groundwater table level (i.e., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?	☐	☐	☒	☐
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 substantially increase the rate or amount of surface runoff in a manner that would result in substantial erosion or siltation on or off site?	☐	☐	☒	☐
d. Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner that would result in flooding on or off site?	☐	☐	☒	☐
e. Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?	☐	☐	☒	☐
f. Otherwise substantially degrade water quality?	☐	☐	☒	☐
g. Place housing within a 100-year flood hazard area as mapped on a Federal Flood Hazard Boundary or Flood Insurance Rate Map or other hazard delineation map?	☐	☐	☐	☒
h. Place within 100-year flood hazard area structures that would impede or redirect flood flows?	☐	☐	☐	☒
i. Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam.	☐	☐	☒	☐
j. Cause inundation by seiche, tsunami, or mudflow?	☐	☐	☐	☒

Environmental checklist established by CEQA Guidelines, Appendix G

5.9.1 Setting

Storm Drainage and Water Quality

The McLaren project (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 the Guadalupe River and east of San Tomas Aquino Creek.

The project site drains by a combination of surface flow and underground pipes (including 6-inch pipes and a 12-inch lateral) towards Mathew Street and ultimately discharges into a 33-inch storm drain under Mathew Street (City 2017). Storm water from the project site drains into the city of Santa Clara's storm water drain system, which discharges to San Tomas Aquino Creek and ultimately the 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 from urban uses typically contains conventional pollutants such as metals, pesticides, herbicides, oil, grease, asbestos, lead, and animal wastes.

The existing project site is currently developed and is approximately 96 percent impervious (City 2017).

Groundwater

The Santa Clara Valley groundwater basin is divided into four interconnected subbasins that border the southern San Francisco Bay. The Santa Clara Valley subbasin extends across the Santa Clara Valley in the region south of San Francisco Bay.

Seasonal fluctuations, drainage patterns, and other factors can affect the groundwater level. Based on the Seismic Hazard Zone Report 058 prepared by the Department of Conservation for San Jose West 7.5-Minute Quadrangle (2002), the historic shallowest depth to groundwater in the general site area is less than 10 feet bgs (CGS 2002). According to a recent geotechnical investigation of the site, groundwater was encountered between 6 to 11 feet below grade at the project site. Additionally, according to recent pore pressure dissipation tests conducted at the project site, groundwater was encountered between depths of 0.5 to 6.7 feet below grade at the project site (Murray 2016).

Flooding

The existing elevation of the project site is approximately 52 feet (NAVD88). Though the site is located near the Guadalupe River and San Tomas Aquino Creek, these waterways do not pose an obvious flooding risk. According to the Federal Emergency Management Agency's (FEMA) Flood Insurance Rate Map (FIRM) 06085C0227H, 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, areas of one percent chance of annual 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 not within an area mapped as vulnerable to sea level rise in the Santa Clara General Plan.

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 safely 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. San Tomas

Aquino Creek south of the project site is currently listed on the United States Environmental Protection Agency's Section 303(d) Listed Waters for California for trash.

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 greater than or equal to 65 percent impervious (per the city of Santa Clara Hydromodification Management Applicability Map). The project site is located in a catchment area that is greater than or equal to 65 percent impervious; thus, the project site is not subject to the hydromodification requirements of the Municipal NPDES permit.

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 one percent annual chance flood, or base flood. The Federal Insurance Rate Map (FIRM) is the official map created and distributed by Federal Emergency Management Agency (FEMA) for the National Flood Insurance Program (NFIP) 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.

The proposed project site is located within Zone X. Zone X is defined as areas of 0.2 percent annual chance of flood, areas of one percent chance of annual 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.

California Water Code, Sections 10910-10915

California Water Code, Sections 10910-10915 requires water service providers to evaluate stresses to the water supply service system caused by proposed project developments. The code sections require public water systems to prepare water supply assessments (WSA) for certain defined development projects subject to the California Environmental Quality Act (CEQA).

Staff determined that a WSA does not need to be prepared for the proposed project because it does not meet the definition of a "project" as defined in the code. The definition of a project is described below.

According to Section 10912,

(a) "Project" means any of the following:

(1) A proposed residential development of more than 500 dwelling units.

(2) A proposed shopping center or business establishment employing more than 1,000 persons or having more than 500,000 square feet of floor space.

(3) A proposed commercial office building employing more than 1,000 persons or having more than 250,000 square feet of floor space.

(4) A proposed hotel or motel, or both, having more than 500 rooms.

(5) (A) Except as otherwise provided in subparagraph (B), a proposed industrial, manufacturing, or processing plant, or industrial park planned to house more than 1,000 persons, occupying more than 40 acres of land, or having more than 650,000 square feet of floor area.

(B) A proposed photovoltaic or wind energy generation facility approved on or after the effective date of the amendments made to this section at the 2011-12 Regular Session is not a project if the facility would demand no more than 75 acre-feet of water annually.

(6) A mixed-use project that includes one or more of the projects specified in this subdivision.

(7) A project that would demand an amount of water equivalent to, or greater than, the amount of water required by a 500 dwelling unit project. [emphasis added]

(b) If a public water system has fewer than 5,000 service connections, then "project" means any proposed residential, business, commercial, hotel or motel, or industrial development that would account for an increase of 10 percent or more in the number of the public water system's existing service connections, or a mixed-use project that would demand an amount of water equivalent to, or greater than, the amount of water required by residential development that would represent an increase of 10 percent or more in the number of the public water system's existing service connections.

Though the proposed project meets none of the above classes of “Project,” staff reviewed other documents that provide guidance on the implementation of these sections of the Water Code. Further guidance for how to interpret these sections of the Water Code is provided in a California Department of Water Resources document titled “Guidebook for Implementation of Senate Bill 610 and Senate Bill 221 of 2001” (Guidebook) (DWR 2003). A helpful interpretive section on page 3 of the Guidebook, explains how to interpret item (1) above. It states that one dwelling unit typically consumes 0.3 to 0.5 acre-feet of water per year (DWR 2003). Therefore 500 dwelling units could be interpreted to mean 150 to 250 acre-feet per year of potable water. The proposed project would only use up to 64 acre-feet per year (City 2017). The proposed project therefore does not meet the criteria of item (1) described above.

The Guidebook also provides guidance about how to interpret other items in the list, but the one central theme is that WSAs are necessary for projects that increase the demand on the local system substantially. The Guidebook also emphasizes that WSAs are necessary in areas with a poorly understood water supply, or in an area where the project would increase the demand substantially, or 10-percent (DWR 2003). The project is located in a very well-studied service area with many service connections, but above all, the project is not expected to increase the demand on the service system.

5.9.2 Environmental Impacts and Mitigation Measures

a. Would the project violate any water quality standards or waste discharge requirements?

LESS THAN SIGNIFICANT IMPACT. The proposed project is 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 phase SWPPP, redevelopment of the site would not cause any increase in storm water runoff that would exceed the capacity of the existing storm drainage system. Construction and operation of the project would not alter the course of a stream or river. In addition, the Municipal NPDES permit requires that redevelopment not result in a net increase in storm water flow exiting the project site. As a result, runoff from the project site would not exceed the capacity of the local drainage system or be expected to significantly contribute to the degradation of storm water runoff quality.

The city of Santa Clara has already proposed mitigation measures **MM HYDRO-1.1** through **MM HYDRO-1.4** to address the potential impacts from the proposed project on storm water quality during construction. Energy Commission staff agrees these proposed mitigation measures would be appropriate to ensure compliance with the applicable regulations and ensure there would be no significant impacts.

The city of Santa Clara has also already proposed mitigation measures **MM HYDRO-2.1** through **MM HYDRO-2.3** to address the potential impacts from the proposed project on storm water quality during operation. Energy Commission staff also agrees these proposed mitigation measures would be appropriate to ensure compliance with the applicable regulations and ensure there would be no significant impacts.

With the implementation of the proposed mitigation measures, the impact from the project on water quality would be expected to be less than significant.

b. Would the project substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (i.e., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?

LESS THAN SIGNIFICANT IMPACT. Approximately 96 percent of the project site is currently covered with impervious surfaces. Therefore, the project site does not currently contribute to substantial recharging of the groundwater aquifers. The proposed project would result in less impervious area (74 percent), and therefore more onsite groundwater recharge (City 2017). The impact from the project on groundwater recharge would be expected to be less than significant.

The water system in the city is operated and maintained by the city's Water and Sewer Utility. This system is supplied with potable water from three sources: Santa Clara Valley Water District (SCVWD), which gets its water from the San Joaquin Delta, local surface water sources, and local groundwater; the San Francisco Public Utilities Commission (SFPUC), which gets its water from the Hetch Hetchy system; and 26 groundwater wells operated by the Santa Clara's Water and Sewer Utility. The three sources are used interchangeably or are blended together. In 2015, about 35 percent of the city's

potable water came from the imported treated water supplies (the SCVWD and SFPUC). Groundwater made up approximately 65 percent of the city's potable water supply in 2015. The water system in the city consists of more than 335 miles of distribution mains, the 26 groundwater wells discussed above, and seven storage tanks with approximately 28.8 million gallons of capacity. According to the 2015 Urban Water Management Plan (UWMP) prepared for the city, which the Santa Clara City Council approved and adopted on November 22, 2016, the citywide demand for potable water in 2015 was 17,620 acre-feet (City 2017).

The project would utilize about 440 acre-feet per year of recycled water and 64 acre-feet per year of potable water (City 2017). The project is utilizing recycled water for all construction, industrial, and landscaping activities to the maximum extent practicable. The use of recycled water rather than potable water would minimize the impact of the proposed project on local potable water supplies. The UWMP ***also concludes that the city is expected to meet future demands (UWMP 2016). The impact from the*** project on groundwater supplies would be expected to 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, in a manner, which would result in substantial erosion or siltation on or off site?

LESS THAN SIGNIFICANT IMPACT. See section (a) above.

d. 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 substantially increase the rate or amount of surface runoff in a manner that would result in flooding on or off site?

LESS THAN SIGNIFICANT *IMPACT.* This project is not expected to substantially alter local drainage patterns. Approximately 96 percent of the project site is currently covered with impervious surfaces. The proposed project would result in less impervious area (74 percent) and less runoff. The proposed on-site storm drainage system is expected to be sized adequately to convey water away from the site and to the city's storm drain system. The proposed project would therefore not contribute to a flooding hazard on or off-site.

e. Would the project create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems to provide substantial additional sources of polluted runoff?

LESS THAN SIGNIFICANT IMPACT. See section (a) above.

f. Would the project otherwise substantially degrade water quality?

LESS THAN SIGNIFICANT IMPACT. See section (a) above.

g. Would the project place housing within a 100-year floodplain, as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?

NO IMPACT. The *proposed* project would not include housing.

h. Would the project place within a 100-year floodplain structures that would impede or redirect flood flows?

NO IMPACT. The proposed project is not within the 100-year floodplain.

i. Would the project expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?

LESS THAN SIGNIFICANT IMPACT. There are no dams or levee systems within the immediate vicinity of the project site; however, the project site is within the dam failure inundation area for Lexington Reservoir (Leniham Dam). Lexington Reservoir is maintained by the SCVWD and the dam is continuously monitored for seepage and settling and inspected when an earthquake occurs. Due to the monitoring and inspection, the distance from the project site, and the nature of the on-site uses, proposed site improvements are not anticipated to result in a new substantial hazard from dam failure. While inundation resulting from dam failure could result in damage to structures, the probability of such a failure is extremely remote (City 2017). The impact resulting from a dam or levee failure would not be exacerbated by the proposed project, and therefore the impact of the proposed project would be expected to be less than significant.

j. Would the project cause inundation by seiche, tsunami, or mudflow?

NO IMPACT. 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.

Previously Identified Mitigation Measures: See pages 5-6 of the city of Santa Clara's IS/MND.

New Proposed Mitigation Measures: No additional mitigation measures are required beyond those already adopted by the city for the original project.

5.9.3 References

CEMA 2009 – Tsunami Inundation Map for Emergency Planning, Mountain View Quadrangle. Prepared by the California Emergency Management Agency. Published July 31, 2009.

CGS 2002– Seismic Hazard Zone Report for the San Jose West 7.5-Minute Quadrangle, Santa Clara County, California. Seismic Hazard Zone Report 058. California Department of Conservation, 2002.

City 2017 – McLaren Data Center Project, Proposed Mitigated Negative Declaration. Prepared by the City of Santa Clara. Prepared February, 2017.

DWR 2003 – Guidebook for Implementation of Senate Bill 610 and Senate Bill 221 of 2001. California Department of Water Resources. October 8, 2003.

Murray 2016 – Geotechnical Investigation, Vantage Data Centers 651, 725, 825 Matthew Street, Santa Clara, California. Prepared November, 2012.

Plan 2014– City of Santa Clara 2010-2035 General Plan. Approved December 9, 2014. Available at: http://santaclaraca.gov/government/departments/planning-inspection/planning-division/general-plan. Accessed: February 1, 2018.

UWMP 2016– City of Santa Clara 2015 Urban Water Management Plan. Prepared by the City of Santa Clara Water and Sewer Utilities. Adopted November 22, 2016.

5.10 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.	Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?	☐	☐	☒	☐
c.	Conflict with any applicable habitat conservation plan or natural community conservation plan?	☐	☐	☐	☒

Environmental checklist established by CEQA Guidelines, Appendix G.

5.10.1 Setting

The 8.97-acre project site is in an existing industrial area of the city of Santa Clara. The site is composed of three parcels that were previously developed with industrial warehouse, manufacturing, and office facility uses, and a surface parking area. The project site is bounded by Mathew Street to the south, the Southern Pacific Railroad to the east, and other industrial and commercial properties to the north and west. Following approval of the city's February 2017 Initial Study/Mitigated Negative Declaration (IS/MND) on the McLaren Data Center (MDC) project, some of the existing facilities were demolished and removed from the site to prepare for construction of the first data center building. Initial site grading has occurred to prepare for the first phase of construction of the MDC project.

The *City of Santa Clara 2010–2035 General Plan* (General Plan) was adopted on November 16, 2010 (City of Santa Clara 2010). The project site is designated Heavy Industrial, as shown on the Land Use Diagrams for the General Plan's three planning phases. The Heavy Industrial designation "allows primary manufacturing, refining, and similar activities. It also accommodates warehousing and distribution, as well as data centers."

The project site is zoned MH (Heavy Industrial) (Title 18, Chapter 18.50 of the city's Zoning Code). This zoning district is intended to encourage heavy industrial development. Permitted uses include manufacturing, processing, assembling, research, wholesale, or storage uses. Such uses shall not produce objectionable or offensive noise, smoke, odor, dust, noxious gases, vibrations, glare, heat, fire hazards, industrial wastes, or handling of explosives or dangerous materials. Permitted uses include outdoor storage and exposed mechanical appurtenances and incidental and accessory buildings and uses on the same lot with, and necessary for, the operation of any permitted use. The maximum permitted building height in this zoning district is 70 feet.

5.10.2 Environmental Impacts and Mitigation Measures

a. Would the project physically divide an established community?

NO IMPACT. Since approval by the city, the project developer has reconfigured the MDC project to consist of three, four-story data center buildings and an increased number of backup generators arranged in three generator yards. The McLaren Backup Generating Facility (MBGF) would be constructed within the boundaries of the approved MDC project. As described in the analysis for the MDC project, the project would not physically divide an established community.

The reconfigured project would not change the project boundaries or involve construction of new off-site elements that could divide the community; therefore, no impact would occur.

b. Would the project conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to, the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?

LESS THAN SIGNIFICANT IMPACT. On March 29, 2017, the city's Architectural Committee unanimously approved the MDC Architectural Review application and adopted the IS/MND (City of Santa Clara 2017a). The approval allows development of two, four-story data center buildings, two generator yards, an electric substation on the project site along Mathew Street, mechanical yard support areas, and surface parking lots.

The IS/MND states that the data center buildings to the rooftops will be 87.5 feet above ground surface. The project requires a "minor modification" to allow the height increase of up to 25 percent, which is subject to approval by the city's Zoning Administrator, in accordance with the Zoning Code (Title 18, Chapter 18.90 of the City's Zoning Code). The IS/MND determined that the MDC project would be consistent with General Plan land use policies (City of Santa Clara 2017b).

Based on the project developer's revised elevation drawings for the buildings, the height to the rooftop for the data center buildings has not been changed from the approved project. The Zoning Code defines height of buildings as a "vertical distance from the 'grade' to the highest point of the coping of a flat roof, or to the deck line of a mansard roof, or to the highest gable of a pitched or hipped roof" (Title 18, Chapter 18.06 of the City's Zoning Code). The mechanical screens along the tops of the data center buildings are not subject to the building height limits addressed in the Zoning Code. The MBGF generators will be configured in three generator yards; each generator will have a stack height of approximately 45 feet.

According to staff at the city's Community Development Department, a building permit application for the project was received on January 8, 2018, which is undergoing concurrent review by various city departments. Granting of the minor modification for the height increase for the data center buildings may be processed as review of the building permit proceeds. With approval of the zoning administrator modification, which staff presumes will occur, the project would be consistent with the existing zoning designation for the project site, and the impact would be less than significant. The IS/MND evaluates consistency of the MDC project with General Plan goals and policies. Staff has identified no new applicable land use plans or policies adopted to avoid or mitigate an environmental effect.

c. Would the project conflict with any applicable habitat conservation plan or natural community conservation plan?

NO IMPACT. The *Santa Clara Valley Habitat Plan* (Habitat Plan) study area covers approximately 519,500 acres, or 62 percent of Santa Clara County. The Habitat Plan includes approximately 100,000 acres in the northwest portion of the study area identified under the Urban Development category. The project site is at or just outside of the study area boundary where urban growth areas anticipated by approved or draft general plans are identified (Santa Clara Valley Habitat Agency 2012). Whether the project site is along or outside of the study area boundary, the "covered activities" for the Urban Development category include construction, maintenance, and use of various urban facilities.

The project site is within an existing industrial area that is surrounded by industrial and commercial uses. The project would not conflict with the Habitat Plan goals and strategies aimed at protection and recovery of natural resources, including endangered species, and no impact would occur.

Previously Identified Mitigation Measures: None.

New Proposed Mitigation Measures: None.

5.10.3 References

City of Santa Clara 2010 — Community Development Department, Planning Division. *City of Santa Clara 2010–2035 General Plan*. Chapter 5 Goals and Policies. Land Use Diagrams Phases I, II, and III. Available at: http://santaclaraca.gov/government/departments/community-development/planning-division/general-plan-and-specific-plans. Accessed January 25, 2018.

City of Santa Clara 2017a — City of Santa Clara Architectural Committee. Meeting Minutes. Wednesday, March 29, 2017. File No.(s) PLN2016-12246, Architectural Review; PLN2016-12502, Lot Line Adjustment; PLN2016-01023, IS/MND. Motion/Action adopted of IS/MND and approval of Architectural Review application. Available at: http://santaclaraca.gov/Home/ShowDocument?id=52002. Accessed January 25, 2018.

City of Santa Clara 2017b — Community Development Department, Planning Division. McLaren Data Center Project, File No(s): PLN2016-12246 / CEQ 2016-01023. Initial Study/Mitigated Negative Declaration. Pages 31–32 and 97–101. February 2017. Available at: http://santaclaraca.gov/Home/Components/BusinessDirectory/BusinessDirectory/167/3650?npage=2. Accessed February 1, 2018.

Santa Clara Valley Habitat Agency 2012 — Final Santa Clara Valley Habitat Plan, Santa Clara County, California. August 2012. Pages 2-1, 2-20 to 2-24, 2-39 to 2-42: Figures 2-2, 2-3, 2-4, and 2-5. Prepared for City of Gilroy, City of Morgan Hill, City of San Jose, County of Santa Clara, Santa Clara Valley Transportation Authority, Santa Clara Valley Water Agency. Prepared by ICF International. San Francisco, CA. Available at: https://scv-habitatagency.org/178/Santa-Clara-Valley-Habitat-Plan. Accessed February 1, 2018.

5.11 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.

5.11.1 Setting

Mineral Resources

The city of Santa Clara is in an area zoned MRZ-1 for aggregate materials by the State of California (CDC 1996). MRZ-1 zones are areas where adequate information indicates that no significant mineral deposits are present or where it is judged that little likelihood exists for their presence. The area is not known to support significant mineral resources of any type. The State Office of Mine Reclamation's list of mines (the AB 3098 List) regulated under the Surface Mining and Reclamation Act (SMARA) does not include any mines within the city (CDC 2016). No mineral resources are currently being extracted in the city (City of Santa Clara 2017).

Regulatory Setting

There are no governmental agency approvals or permits required to comply with the mineral resources-related laws, ordinances, regulations or standards.

5.11.2 Environmental Impacts and Mitigation Measures

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?

NO IMPACT. The project site is in a developed urban area and does not contain any known or designated mineral resources.

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?

NO IMPACT. The project site is in a developed urban area and does not contain any known or designated mineral resources.

Previously Identified Mitigation Measures: None.

New Proposed Mitigation Measures: None.

5.11.3 References

CDC, 1996, California Department of Conservation, *Revised Mineral Land Classification Map. Aggregate Resources Only. South San Francisco Bay Production-Consumption Region. Mountain View Quadrangle. Open-File Report 96-03.* Available: ftp://ftp.consrv.ca.gov/pub/dmg/pubs/ofr/OFR_96-03/OFR_96-03_Plate5.pdf .

CDC, 2016, California Department of Conservation, AB 3098 List. Avalable : http://www.consrv.ca.gov/omr/SMARA%20Mines/ab_3098_list/Pages/Index.aspx.

City of Santa Clara, 2017, McLaren Data Center Project Initial Study

5.12 Noise

Would the project:		Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less than Significant Impact	No Impact
a.	Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	☐	☐	☒	☐
b.	Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?	☐	☐	☒	☐
c.	A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?	☐	☐	☒	☐
d.	A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?	☐	☐	☒	☐
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 expose people residing or working in the project area to excessive noise levels?	☐	☐	☒	☐
f.	For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?	☐	☐	☐	☒

Environmental checklist established by CEQA Guidelines, Appendix G.

5.12.1 Setting

The project site is surrounded by industrial and commercial land uses, with the nearest residential land use located approximately 400 feet west of the project site boundary. The project site is designated as Heavy Industrial under the city of Santa Clara 2010-2035 General Plan (Santa Clara General Plan) and is zoned as MH (Heavy Industrial).

The city of Santa Clara's Mitigated Negative Declaration (MND) for the McLaren Data Center (MDC) site evaluated two generator yards and 32 generators as part of the MDC. The McLaren Backup Generating Facility, or MBGF, is an expansion of the backup generating facilities to include 15 additional generators located with an additional generator yard. This noise analysis evaluates all of the 47 generators, including the MDC and MBGF (referred to as the project).

Regulatory Background

Chapter 9.10 (noise ordinance) of the city of Santa Clara Municipal 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 for heavy industrial land use zones is 75 dBA Lmax (anytime), the exterior noise limit for commercial land uses it 65 dBA Lmax (daytime), and the exterior noise limit for residential land uses is 55 dBA Lmax (daytime). The city's noise limits for stationary noise sources are not applicable to emergency work, including the operation of emergency generators; however, the generators would be tested intermittently, and these tests are subject to the local noise regulations defined in the city's noise ordinance.

5.12.2 Environmental Impacts and Mitigation Measures

a. Would the project result in exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?

LESS THAN SIGNIFICANT IMPACT. The proposed emergency generators located in the three generation yards above would provide backup power to the data center buildings in the event that an equipment failure or other conditions result in an interruption of the electricity provided by Silicon Valley Power. As discussed above, the city's exterior noise limit for heavy industrial land use zones is 75 dBA Lmax (anytime), the exterior noise limit for commercial land uses it 65 dBA Lmax (daytime), and the exterior noise limit for residential land uses is 55 dBA Lmax (daytime). As described in the MND, the city's noise limits for stationary noise sources are not applicable to emergency work, including the operation of emergency generators. However, the generators would be tested intermittently, and these tests are subject to the local noise regulations defined in the city's noise ordinance.

The MND found that the noise from operating the generators for testing and maintenance would exceed the city's noise limits at the nearest land uses. Therefore, the MND adopted the following mitigation measure.

MM NOI-1.1: The project applicant shall prepare and implement measures to ensure that outdoor mechanical equipment does not generate noise levels in excess of the city's applicable noise standard for the applicable zoning category (i.e. 75 dBA noise standard at the nearest heavy industrial uses, 65 dBA at the nearest commercial land uses, and 55 dBA at the nearest residential land uses). All sound, noise, or vibration measurements shall be taken at the closest point to the noise or vibration source on the adjacent real property, or on any other property, affected by the noise or vibration. Measures included in this noise control plan that could help to accomplish this standard include, but are not limited to:

- Installing sound enclosures or barriers around noise- generating mechanical equipment (including but not limited to emergency generators and pumps). The generators may need to be fully enclosed to meet the applicable noise standards.
- Reducing the number of generators tested at once.
- Utilizing mufflers to reduce noise from mechanical equipment, and
- Utilizing quieter equipment (e.g. smaller, quieter generators) that meets this standard.

Prior to the issuance of an occupancy permit, the project applicant shall prepare a report, identifying measures that shall be implemented to ensure that exterior noise levels from mechanical equipment comply with the city's noise standards, to the satisfaction of the city of Santa Clara Director of Community Development.

This mitigation measure is appropriate and is adequately effective in reducing project noise. Staff concludes that with implementation of this mitigation measure, noise impacts from the operation of the generators would be reduced to less than significant levels. The additional generators proposed by the MBGF would be subject to this mitigation measure and, likewise, the noise impacts associated with the additional generators would be reduced to less than significant levels.

b. Would the project result in exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?

LESS THAN SIGNIFICANT IMPACT. The only construction work likely to produce vibration that could be potentially significant when perceived off site would be pile driving, but pile driving would not occur for this project (California Energy Commission 2018). Also, no vibration-sensitive land uses are in the proximity of the project site; the nearest residential receptor is roughly 400 feet away. Therefore, vibration impact from project demolition and construction would be less than significant. No significant vibration would be perceived offsite from project operation.

c. Would the project result in a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?

LESS THAN SIGNIFICANT IMPACT. With implementation of NOI-1.1, the project, including the MDC and MBGF, would comply with the city's noise standards and would not result in a substantial permanent increase in ambient noise levels in the project vicinity. With NOI-1.1 implemented, project noise impact would be less than significant.

d. Would the project result in a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?

LESS THAN SIGNIFICANT IMPACT. Because the area surrounding the project site consists of mostly industrial and some commercial land uses, with the nearest residence being approximately 400 feet away, the project's noise impacts related to its demolition and construction activities would not be significant. In addition, as no demolition or construction is proposed to occur on weekends and holidays, potential noise effects related to demolition and construction would be further reduced. The noise would not result in a substantial temporary or periodic increase in ambient noise levels.

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 expose people residing or working in the project area to excessive noise levels?

LESS THAN SIGNIFICANT IMPACT. The project site is located approximately 0.3 mile (1,750 feet) west of the Norman Y. Mineta San Jose International Airport, the nearest airport, and is located outside the Airport Noise Zone (the 65 CNEL contour, as set forth by state law) as defined in the Comprehensive Land Use Plan for the airport. Also, the project would comply with the city's noise standards. Thus, the project would not combine with this or any other nearby public airport to expose people to excessive noise levels.

f. For a project within the vicinity of a private air strip, would the project expose people residing or working in the project area to excessive noise levels?

NO IMPACT. The project site is not in the vicinity of a private airstrip.

New Proposed Mitigation Measures: No additional mitigation measures beyond that adopted in the city's IS/MND (NOI-1.1) are necessary to ensure that the project does not result in significant noise impacts.

5.12.3 References

California Energy Commission 2018—Data Clarification Questions and Responses for the McLaren Backup Generation Facility SPPE application review—Supplement for Geo/Paleo and Noise. June 2018. TN223773.

Vantage 2017—Vantage Data Centers, LLC. Application for Small Power Plant Exemption: McLaren Backup Generating Facility (17-SPPE-01). December 2017. TN22041-13.

Vantage 2017 – Vantage Data Centers, LLC. Application for Small Power Plant Exemption: McLaren Backup Generating Facility, Appendix B Part 1 (17-SPPE-01), December 2017. TN 222057.

5.13 Population and Housing

Would the project:	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less than Significant Impact	No Impact
a. Induce substantial 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 housing, necessitating the construction of replacement housing elsewhere?	☐	☐	☒	☐
c. Displace substantial numbers of people necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒

Environmental checklist established by CEQA Guidelines, Appendix G.

5.13.1 Setting

The McLaren Data Center (MDC) and McLaren Backup Generation Facility (MBGF) together constitute the proposed project. The following are the study areas for population and housing related project impacts:

- population influx and housing supply –
  - City of Santa Clara
- local workforce – residing within a two-hour commute for project construction and a one-hour commute for project operation.
  - San Jose-Sunnyvale-Santa Clara Metropolitan Statistical Area[3] (MSA) (San Benito and Santa Clara counties)

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).

Population and Housing Table 1 shows the historical and projected populations for the cities and communities within proximity of the project site, plus Santa Clara County. Population projections between 2017 and 2035 show a growth ranging from 10 to 27 percent or 0.6 to 11.5 percent per year in the cities within and around a 6-mile radius of the project site.

[3] A Metropolitan Statistical Area (MSA) contains a core urban area population of 50,000 or more, consists of one or more counties, and includes the counties containing the core urban area, as well as any adjacent counties that have a high degree of social and economic integration (as measured by commuting to work) with the urban core.

Population and Housing Table 1 Historical and Projected Populations

Area	2010[1]	2017[2]	2020[2]	2035[3]	Projected Population Change 2017-2035		
					Number	Percent (%)	Percent per Year (%)
Campbell	39,349	42,726	43,210	46,510	3,784	8.9	0.5
Cupertino	58,302	58,917	63,490	66,590	7,673	13.0	0.7
Milpitas	66,790	75,410	90,620	97,330	21,920	29.1	1.6
San Jose	945,942	1,046,079	1,028,450	1,283,845	237,766	22.7	1.3
Santa Clara	116,468	123,983	131,690	151,770	27,787	22.4	1.2
Sunnyvale	140,081	149,831	149,980	203,855	54,024	36.1	2.0
Santa Clara County	1,781,642	1,938,180	1,985,860[3] 2,018,257[4]	2,384,600[3] 2,337,470[4]	446,420*	23.0	1.3

Note: *The higher population projection is used for calculating population change.
Sources: [1]US Census 2010; [2]CA DOF 2017; [3]ABAG 2018; [4]CA DOF 2016.

According to the California Employment Development Department 2014-2040 Occupational Employment Projections for the San Jose-Sunnyvale-Santa Clara MSA, the 2024 projected employment for the construction and extraction occupations is 49,540, which is a 2.3 percent annual average percent change from 2014 estimated employment levels (40,320) (CA EDD 2016). The projected employment for general and operations managers is 19,930, which is a 1.2 percent annual average percent change from 2014 estimated employment levels (17,730). The projected employment for security guards is 9,140, which is a 0.8 percent annual average percent change from 2014 estimated employment levels (8,430). The projected employment for janitors is 17,060, which is a 0.9 percent annual average percent change from 2014 estimated employment levels (15,630).

Population and Housing Table 2 presents housing supply data for the project area. Year 2017 housing estimates indicated 29,309 vacant housing units within Santa Clara County representing a vacancy rate of 4.4 percent (CA DOF 2017).

Population and Housing Table 2 Housing Supply Estimates in the Project Area

Housing Supply		2017	
		Total	Vacant
Campbell	Number	17,832	928
	Percent	100	5.2
Cupertino	Number	21,064	1,428
	Percent	100	6.8
Milpitas	Number	21,532	513
	Percent	100	2.4
San Jose	Number	332,574	11,360
	Percent	100	3.4
Santa Clara	Number	46,535	2,363
	Percent	100	5.1
Sunnyvale	Number	58,308	3,308
	Percent	100	5.7
Santa Clara County	Number	661,875	29,309
	Percent	100	4.4

Source: CA DOF 2017.

5.13.2 Environmental Impacts and Mitigation Measures

a. Would the project induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?

LESS THAN SIGNIFICANT IMPACT. Construction of the project would employ an average of 100 workers per month and reach a peak workforce of 300 (DayZen2017m, p. 126 and California Energy Commission 2018). Construction phasing of the project would change from four phases, which was analyzed in the city of Santa Clara Initial Study/Mitigated Negative Declaration (IS/MND), to three phases (DayZen2017l, p.1-4). The timing of the phasing for full build-out of the project depends on the ultimate demand for the data center services. At this time, Phases 1 and 2 would be constructed within 2018 and 2019. Construction of Phase 1 would take approximately 15 months and Phase 2 would take approximately 12 months. Phase 3 would take approximately 15 months, with completion in 2022. It is possible that the timing of project phases would result in times when there is no construction on site.

Construction of the MBGF portion of the project would employ approximately 10-15 workers, including a crane operator (DayZen2017l, p.2-7). The construction workers for the MBGF are a subset of the total estimated number of construction workers evaluated for the MDC in the city of Santa Clara's IS/MND. The previously analyzed MDC included 32 backup generators. The increase in the number of generators proposed in the MBGF application for Small Power Plant Exemption (SPPE) did not result in additional construction personnel over the previously analyzed MDC (California Energy Commission 2018). Construction of the MBGF portion of the project would occur in three phases, each phase lasting six months. Construction of each phase would not be continuous for the entire six months.

The applicant anticipates all of the construction workforce for the project would come from the greater Bay Area. As shown in the "Setting" sub-section of this analysis, there is a large local construction workforce in the San Jose-Sunnyvale-Santa Clara MSA, thus, the construction workforce would not likely seek temporary lodging closer to the project site.

The operations workforce for the MBGF would be a subset of the MDC workforce (California Energy Commission 2018). Full build-out of the project is anticipated to employ approximately 29 employees, including 14 operations personnel, 13 security personnel, and 2 janitors (DayZen2017m, p. 127). The applicant anticipates all of the operations workforce would come from the greater Bay Area. As shown in the "Setting" sub-section of this analysis, there is a sufficient local operations workforce in the San Jose-Sunnyvale-Santa Clara MSA. The operations workforce would not likely relocate closer to the project site. If some operations workers were to relocate, housing data shows a vacancy rate of 4.4 percent in Santa Clara County and 5.1 percent in the city of Santa Clara. A 5-percent vacancy is a largely industry-accepted minimum benchmark for a sufficient amount of housing available for occupancy (Virginia Tech 2006). The housing counts in the project area indicate a sufficient supply of available housing units within the project area for the possible few operations workers that seek housing closer to the project.

While the project includes 47 backup generators, they would directly serve the MDC portion of the project and would not be an extension of infrastructure which could result in indirect population growth.

Staff concludes the project's construction and operations workforce would not directly or indirectly induce a substantial population growth in the project area.

b. Would the project displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?

LESS THAN SIGNIFICANT IMPACT. The project is proposed on an industrial site, thus would not displace housing. The applicant anticipates all of the operations workforce for the project would be drawn from the greater Bay Area. Operations workforce would not likely relocate closer to the project site. If some operations workers were to move closer to the project and seek housing, there is a sufficient housing supply for the new operations workers with an approximate 4.4 percent vacancy in Santa Clara County and 5.1 percent in the city of Santa Clara. The project would not result in the need for construction of replacement housing elsewhere.

c. Would the project displace substantial numbers of people necessitating the construction of replacement housing elsewhere?

NO IMPACT. No population would be displaced as the project would be constructed on an industrial site.

Previously Identified Mitigation Measures: None were identified by the city in the IS/MND.

New Proposed Mitigation Measures: No additional mitigation measures are necessary.

5.13.3 References

ABAG 2018 – Association of Bay Area Governments, March 15, 2018, https://abag.ca.gov/

CA DOF 2016 – California Department of Finance Demographic Research Unit, P-1: State Population Projections (2010-2060): Total Estimated and Projected Population for California and Counties: July 1, 2010 to July 1, 2060 in 5-year Increments, 2016 baseline, http://www.dof.ca.gov/Forecasting/Demographics/Projections/

CA DOF 2017 – California Department of Finance, *E-5 Population and Housing Estimates for Cities, Counties and the State — January 1, 2011-2017*, with 2010 Benchmark, May 1, 2017, http://dof.ca.gov/Forecasting/Demographics/Estimates/E-5/

CA EDD 2016 – Employment Development Department, State of California, Labor Market Information Division, 2014-2024 Occupational Employment Projections, San Jose-Sunnyvale-Santa Clara Metropolitan Statistical Area, (San Benito and Santa Clara Counties), published December 2016, http://www.labormarketinfo.edd.ca.gov/data/employment-projections.html#Long

California Energy Commission 2018—Compilation of Data Clarification Questions and Responses for the McLaren Backup Generation Facility SPPE application review. June 2018. TN223744.

US Census 2010 – United States Census Bureau, P1: TOTAL POPULATION - Universe: Total population, 2010 Census Summary File 1, http://factfinder2.census.gov/faces/nav/jsf/pages/index.xhtml

Vantage 2017—Vantage Data Centers, LLC. Application for Small Power Plant Exemption: McLaren Backup Generating Facility (17-SPPE-1). December 2017. TN22041-13.

Virginia Tech 2006 – Virginia Tech, *Virginia Tech Housing Needs and Market Analysis, Thomas Jefferson PDC*, Center for Housing Research Virginia Tech, October 2006, http://www.vchr.vt.edu/pdfreports/tjhousingreportfinalrev3.pdf

5.14 Public Services

PUBLIC SERVICES Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for any of the public services:	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less than Significant Impact	No Impact
a. Fire protection?	☐	☐	☒	☐
b. Police protection?	☐	☐	☒	☐
c. Schools?	☐	☐	☐	☒
d. Parks?	☐	☐	☒	☐
e. Other public facilities?	☐	☐	☒	☐

Environmental checklist established by CEQA Guidelines, Appendix G.

5.14.1 Setting

The McLaren Data Center (MDC) and McLaren Backup Generation Facility (MBGF) together constitute the proposed project. The following are the study areas for public services related project impacts:

- fire protection, police protection, parks, and other public facilities (libraries).
  - city of Santa Clara
- schools
  - Santa Clara Unified School District

The project would be served by the public service providers discussed below.

Fire Protection

Fire protection would be provided by the Santa Clara Fire Department (SCFD) and emergency medical response would be provided by Rural Metro through a contract with Santa Clara County Emergency Medical Services. The department currently has 10 fire stations consisting of 8 engines, 2 trucks, 1 rescue/light unit, 3 ambulances, 1 hazardous materials unit, and 1 command vehicle. The department has approximately 130 fire service personnel (DayZen2017m, p. 118).

Police Protection

Police protection would be provided by the Santa Clara Police Department (SCPD). The police department has a mutual aid agreement with surrounding jurisdictions for extreme emergencies (DayZen2017m, p.118). Staff includes 231 full-time employees (155 sworn officers and 76 civilians) and varying number of part-time or per diem employees, community volunteers, police reserves, and chaplains. In 2016, there were 89,065 calls for service (50,211 police; 28,374 self-initiated police calls for service; 10,480 fire calls for service) dispatched through the communications center. There is one headquarters and the Northside Substation. (SCPD 2018)

Schools

The project is in the Santa Clara Unified School District. This district includes 18 elementary, 4 middle, 2 high schools, 2 continuation high schools, and 1 adult education school (Cardan 2018). The school district had an enrollment of 15,409 students in the 2016/2017 year (CDE 2017).

Parks

The city of Santa Clara has 1 community park, 5 mini/pocket parks, 25 neighborhood parks, 3 public open space areas, 3 recreational facilities, recreational trails, and 10 joint use facilities for a total of approximately 299 acres (SC Parks & Rec 2014). The closest parks to the project site are Reed Street Dog Park (located 0.3-mile south of the project site) and Larry J. Marsalli Park (located 0.6-mile south of the project site) (DayZen2017m, p.119).

Other Public Facilities

The Santa Clara City Library has three branches to serve the city of Santa Clara. The closest library to the project site is the Mission Library Family Reading Center, which is approximately 1.5 miles south of the project site (SC Library 2018).

5.14.2 Environmental Impacts and Mitigation Measures

Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for any of the public services:

a) Fire protection?

LESS THAN SIGNIFICANT IMPACT. The project is within SCFD district 1 (SCFD 2018). The closest fire station (station 1) is approximately one-mile south of the project site (777 Benton Street).

The SCFD uses the nationally recognized National Fire Protection Association 1710 response standard. Using a model based on services provided 90 percent of the time, the SCFD standard is 4 minutes for the first-arriving unit for 90 percent of high-level emergency calls. The SCFD standard is less than 8 minutes for paramedic units for 90 percent of calls. The SCFD is currently meeting the SCFD response time standard for high-level emergency calls but is only meeting the response time standard for paramedic units for 85 percent of calls. (California Energy Commission 2018)

The 29 employees that would be generated by the project would have a negligible effect on the service populations of the fire stations that serve the project site. The project would be completed in conformance with the Santa Clara Municipal Fire and Environmental Code to reduce potential fire hazards (DayZen2017m, p. 120).

b) Police Protection?

LESS THAN SIGNIFICANT IMPACT. The project would be served by headquarters (601 El Camino Real), which is approximately 1.3 miles southeast of the project site.

As of 2013, the SCPD is serving a population of approximately 119,075 residents, resulting in a ratio of 1.22 officers per 1,000 residents. The SCPD also serves a daytime population of approximately 204,852 residents and employees, resulting in a ratio of 0.71 officers per 1,000 residents and employees.

The goal of the SCPD is to increase staffing to improve its ratio of 1.22 officers per 1,000 residents to reach the national average of 1.7 officers per 1,000 residents. The SCPD's response time standard is 3 minutes or less for 90 percent of high-priority calls, as outlined in the General Plan. Currently, the SCPD has an average response time of 3 minutes 35 seconds to high-priority calls for service, resulting in a response time that is slightly higher than the standard. Currently, the SCPD requires additional police officers and support staff to meet the SCPD's response time goals. (California Energy Commission 2018)

The 29 employees that would be generated by the project would have a negligible effect on the service populations of the police stations that serve the project site. The entire project site would be secured by fencing and also include security cameras and secure lobby entrances with full-time coverage to monitor the site and provide support services which would further minimize criminal activity (DayZen2017m, p.120 and DayZen2017l p. 4-51).

c) Schools?

NO IMPACT. The California Government Code sets forth the exclusive methods of considering and mitigating impacts on school facilities. Section 65995 expressly provides that "[t]he payment or satisfaction of a fee, charge, or other requirement levied or imposed pursuant to Section 17620 of the Education Code in the amount specified in Section 65995 … are hereby deemed to be full and complete mitigation of the impacts of any legislative or adjudicative act, or both, involving but not limited to, the planning, use, or development of real property, or any change in governmental organization… on the provision of adequate school facilities."

In the 2011 California Court of Appeal 5th District decision in Chawanakee Unified School District v. County of Madera, et.al., the court held that in addition to prohibiting mitigation of impacts on school facilities beyond statutory school fees, the provisions of SB 50 excuses the consideration and mitigation of a project's direct impacts on school facilities, including a school district's ability to accommodate enrollment. However, the court held that indirect impacts of the project "on parts of the physical environment that are not school facilities are not excused from being considered and mitigated." For example, a project's indirect impacts on traffic, air quality, and noise levels related to school attendance or construction of school facilities must be considered and mitigated in an agency's CEQA document (DWK 2011, KTMJ 2011, and RMM 2011).

The project is in the Santa Clara Unified School District (District). District Board Policy (BP 7211 Facilities: Developer Fees) allows the Board of Trustees to establish, levy and collect developer fees on residential, commercial and industrial construction within the district. The current school impact fee for the District is $0.56 per square foot of covered, enclosed commercial/industrial space. These fees would be collected at the time the building permits are requested from the city of Santa Clara.

The project would not have indirect impacts that would relate to school attendance or school facilities.

d) Parks?

LESS THAN SIGNIFICANT IMPACT. Santa Clara Parks and Recreation Department has a parkland service standard of 2.53 acres per 1,000 residents (SC Parks & Rec 2014). The city has approximately 299 acres of parkland that meet the city's park facility standards. California Department of Finance population estimates for 2017 in the city of Santa Clara show a population of 123,983 (DOF 2017). Based on this estimate, approximately 15 acres would be needed to meet their park facility standards.

The applicant anticipates that construction and operations workers for the project would be drawn from the greater Bay Area (California Energy Commission 2018). The construction and operations workforce would not likely relocate closer to the project site. If some operations workers were to relocate, the few new residents would likely have a negligible increase in the usage of or demand for parks or other recreational facilities.

e) Other Public Facilities?

LESS THAN SIGNIFICANT IMPACT. The applicant anticipates that construction and operations workers for the project would be drawn from the greater Bay Area (California Energy Commission 2018). The construction and operations workforce would not likely relocate closer to the project site. If some operations workers were to relocate, the few new residents would likely have a negligible increase in the usage of or demand for libraries.

Previously Identified Mitigation Measures: None were identified by the city in the IS/MND.

New Proposed Mitigation Measures: No additional mitigation measures are necessary.

5.14.3 References

CA DOF 2017 – California Department of Finance, *E-5 Population and Housing Estimates for Cities, Counties and the State — January 1, 2011-2017*, with 2010 Benchmark, May 1, 2017. http://dof.ca.gov/Forecasting/Demographics/Estimates/E-5/

CDE 2017 – California Department of Education, Educational Demographics Unit, Data Quest, Select District Level Data for the year 2016 - 2017, <http://dq.cde.ca.gov/dataquest>.

California Energy Commission 2018—Compilation of Data Clarification Questions and Responses for the McLaren Backup Generation Facility SPPE application review. June 2018. TN223744.

DWK 2011 – Dannis Woliver Kelley, *Recent CEQA Decision Chawanakee Unified School District v. County of Madera*, The Point- Education Law Bulletin, Volume 2011, Client Bulletin No. 13 - July 11, 2011.

KTMJ 2011 – Chelsea R. Olson, *Indirect Impacts On School Facilities Must be Considered and Mitigated Under CEQA*, Kronick Moskovitz Tiedmann & Girard Legal Alerts, Bulletin No. 975577.2, July 8, 2011, http://www.kmtg.com/node/757

RMM 2011 – Remy, Moose, Manley, *Fifth District Holds That, Unlike Impacts on School Facilities, a Development's Indirect Impacts on the Non-School Physical Environment Are Not Excused from Being Considered and Mitigated in an EIR*, June 28, 2011, http://www.rmmenvirolaw.com/2011/06/fifth-district-holds-that-unlike-impacts-on-school-facilities-a-developments-indirect-impacts-on-the-non-school-physical-environment-are-not-excused-from-being-considered-and-mitigated-in-a/

SC Library 2018 – Santa Clara City Library, Accessed January 8, 2018. http://santaclaraca.gov/government/departments/library/about-the-library

5.15 Recreation

		Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less than Significant Impact	No Impact
a.	Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	☐	☐	☒	☐
b.	Does the project include recreational facilities or require the construction or expansion of recreational facilities, which might have an adverse physical effect on the environment?	☐	☐	☒	☐

Environmental checklist established by CEQA Guidelines, Appendix G.

5.15.1 Setting

The McLaren Data Center (MDC) and McLaren Backup Generation Facility (MBGF) together constitute the proposed project. The study area for recreation-related project impacts is the city of Santa Clara.

The city has one community park, five mini/pocket parks, 25 neighborhood parks, three public open space areas, three recreational facilities, recreational trails, and 10 joint use facilities for a total of approximately 299 acres (SC Parks & Rec 2014). The closest parks to the project site are Reed Street Dog Park (located 0.3-mile south of the project site) and Larry J. Marsalli Park (located 0.6-mile south of the project site) (DayZen2017m, p.119).

5.15.2 Environmental Impacts and Mitigation Measures

a. Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?

LESS THAN SIGNIFICANT IMPACT. The project would employ 29 operations workers at the MDC, some of whom would work at the MBGF (California Energy Commission 2018). The applicant estimates that all of the operations workers would be drawn from the greater Bay Area. The operations workers would not likely relocate closer to the project; however, if some operations workers did move closer to the project, they would not likely increase the use of existing parks or recreational facilities to the extent that substantial physical deterioration of the park or facility would occur.

b. Does the project include recreational facilities or require the construction or expansion of recreational facilities, which might have an adverse physical effect on the environment?

LESS THAN SIGNIFICANT IMPACT. The project does not propose recreational facilities and it would not require the construction or expansion of recreational facilities as all of the operations workers would not likely relocate closer to the project. Also, if some operations workers did move closer to the project, they would not likely require the construction or expansion of recreational facilities.

Previously Identified Mitigation Measures: None were identified by the city in the IS/MND.

New Proposed Mitigation Measures: No additional mitigation measures are necessary.

5.15.3 References

California Energy Commission 2018—Compilation of Data Clarification Questions and Responses for the McLaren Backup Generation Facility SPPE application review. June 2018. TN223744.

SC Parks & Rec 2014 – City of Santa Clara Park and Recreation Facilities Final Development Impact Fee Study, June 25, 2014, prepared by Willdan Financial Services. http://santaclaraca.gov/Home/ShowDocument?id=18463

Vantage 2017 – DayZen LLC (TN 222057) docketed December 26, 2017. Application for Small Power Plant Exemption: McLaren Backup Generating Facility, Appendix B Part 1, dated December 2017.

5.16 Transportation and Traffic

Would the project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less than Significant Impact	No Impact
a. Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?	☐	☐	☒	☐
b. Conflict with an applicable congestion management program, including, but not limited to, level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways?	☐	☐	☒	☐
c. Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?	☐	☐	☐	☒
d. Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	☐	☐	☒	☐
e. Result in inadequate emergency access?	☐	☐	☒	☐
f. Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities?	☐	☐	☒	☐

Environmental checklist established by CEQA Guidelines, Appendix G.

5.16.1 Setting

The proposed project would be located in the city of Santa Clara on an approximately nine-acre site at 651, 725, and 825 Mathew Street. Direct access to the project site would be from three gated driveways along the Mathew Street cul-de-sac. Lafayette Street, a major arterial roadway that intersects with Mathew Street, would provide local access to the project site. Regional access would be provided by numerous urban roadways and freeways in the vicinity of the project, including U.S. Highway 101 and Central Expressway, an east-west expressway six lanes in width near the project site.

Other nearby transportation infrastructure includes the Union Pacific Railroad tracks, which lie adjacent to the eastern side of the project site in a north-south orientation, and the Norman Y. Mineta San Jose International Airport, located approximately 0.3 mile east of the site. The project site has no direct access to transit, bicycle, or pedestrian facilities.

Regulatory Background

The city of Santa Clara's level of service (LOS) standard, a measure of effectiveness for describing traffic flow and level of congestion on roadways, is LOS D or better for intersections during the AM and PM peak traffic periods. City intersections included as part of the Santa Clara County Congestion Management Plan (CMP) are expected to meet an LOS of "E" or better, unless they were already operating at LOS F as of 1991. In that case, LOS F is acceptable (VTA 2015).

The Santa Clara Valley Transportation Authority (VTA), which produces the CMP, requires a traffic impact analysis for a project that would generate 100 or more net new peak hour vehicle trips during the AM or PM peak period (VTA 2015). According to the city of Santa Clara's IS/MND for the original project, the city generally uses the same threshold to determine whether a traffic impact analysis is necessary.

5.16.2 Environmental Impacts and Mitigation Measures

a. Would the project conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?

b. Would the project conflict with an applicable congestion management program, including, but not limited to, level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways?

LESS THAN SIGNIFICANT IMPACT.

Construction Traffic Impacts

The city of Santa Clara's Initial Study/Mitigated Negative Declaration (IS/MND) for the originally proposed MDC states that during a typical construction day, there would be approximately 65 construction workers on-site and 17 construction truck trips. Assuming each construction worker commuted individually, adding these numbers together would mean that a typical construction day would generate approximately 82 total daily roundtrips, or approximately 164 daily one-way trips.

The city's IS/MND stated that peak construction would be anticipated to occur during demolition for Phases 1 and 3 and would generate a maximum of 330 daily truck roundtrips, or 660 daily one-way truck trips, and approximately 15 worker roundtrips[3], or 30 worker one-way trips. Total daily one-way trips would be 690 during peak construction. Many of the construction worker trips would be expected to occur prior to the morning and evening peak hours, in accordance with typical construction schedules. Truck trips would occur throughout the day and would be scheduled for off-peak hours whenever possible.

The city stated in its IS/MND that the number of construction-generated trips would not constitute a significant amount of additional traffic and would not be expected to reduce existing LOS to an unacceptable level. Energy Commission Traffic staff agrees with this statement, given that: many of the traffic trips would occur during off-peak periods; construction traffic is temporary; and typical daily construction traffic is fairly small. Furthermore, part of the peak period for construction has likely already passed, given that it was expected to occur during demolition phases, and the structures at 725 Mathew Street have already been demolished.

Although the amended project submitted to the Energy Commission includes addition of another building and associated back-up generators, per communication with the applicant, the project's additional square footage would not increase the number of construction workers (California Energy Commission 2018). Thus, the construction traffic impacts of the project would be similar to those from

[3] The peak number of workers on-site during construction would be 300, but this would not coincide with the larger number of truck trips during peak construction.

the original MDC and the conclusions of the city's IS/MND would still apply. However, it is expected that the additional square footage could increase the duration of construction, which is currently unknown and would depend on the demand for data center services[4] (California Energy Commission 2018). Increasing the duration of construction, while extending the duration of construction traffic, would not cause any significant traffic impacts because LOS would not be degraded to unacceptable levels, and construction traffic would be temporary and at fairly low levels on a typical construction day. Construction traffic generated by the project would not be expected to conflict with the LOS standards established by the city of Santa Clara and the VTA's CMP.

Impacts to the road network would be less than significant.

Operations Traffic Impacts

During operation, the project would employ approximately 29 people, with a maximum of 16 employees on-site each day. These employees, as well as visitors and deliveries to the site, would generate operations trips.

The city's IS/MND used the Institute of Transportation Engineers (ITE) Trip Generation Manual to estimate the number of peak hour operations trips that would be generated by the originally proposed MDC. The estimated number of peak hour operations trips based on the type of project (Data Center, ITE Code 160) and size of the originally proposed project (413,000 gross square feet) was 37 one-way trips during the AM peak hour and 37 one-way trips during the PM peak hour. The IS/MND included a traffic impact analysis for these trips, although one was not required because the project would generate less than 100 peak hour trips. The traffic impact analysis found that for the five selected study intersections, project operation would not degrade LOS to unacceptable levels. Peak hour intersection LOS during project operation would meet the city of Santa Clara's LOS standard of "D" or better, and the intersections included as part of the CMP would meet the CMP LOS standard of "E" or better.

The amended project would increase the building footprint from 413,000 gross square feet to 541,000 gross square feet. The applicant did not provide an updated traffic analysis. However, based on the ITE Trip Generation Manual, the amended project would generate approximately 49 one-way trips during the AM peak hour and 49 one-way trips during the PM peak hour. Project operations trips would generate less than 100 peak hour trips and would not require a traffic analysis.

Staff reviewed the traffic analysis for the original project included as part of the city's IS/MND and noted that the intersection of Lafayette Street and Central Expressway operated at LOS E, the CMP LOS standard, before the project and during project operation. Staff evaluated whether the LOS could degrade to an unacceptable level of "F" during operation of the new larger project, which would generate more trips according to the ITE Trip Generation Manual. However, given that LOS F is associated with an intersection delay of more than 80 seconds, and that the intersection's worst delay during operation of the original project was 62.5 seconds during the PM peak hour, less than a second more than the delay for existing conditions, the new larger project would not generate enough traffic to increase intersection delay to an LOS of "F". The LOS would remain at "E" and would therefore be acceptable.

[4] Although the exact timeline for construction is unknown, the applicant estimated in communications with staff that Phases 1 and 2 would be constructed in 2018 and 2019.

All other intersections currently operate well within city of Santa Clara and CMP LOS standards and would remain at an acceptable LOS during operation of both the original project and the amended project. Operations traffic would have less than significant impacts on traffic LOS.

As discussed in the city's IS/MND, although the project would generate less than significant traffic impacts, the project would include a Transportation Demand Management (TDM) Program to reduce vehicle trips by encouraging the use of public transit, carpooling, biking, walking, and telecommuting, in accordance with the Transportation Demand Management policies of the city's General Plan (SC 2010). The applicant proposed a TDM Program that includes: pre-tax deductions for employee transit costs; flexible work schedules, with the option to telecommute; bike parking and storage; showers for people biking or walking to the facility; video conferencing software; preferred carpool/vanpool parking; and on-site food and beverages to reduce vehicle trips. Staff supports this measure to reduce vehicle trips, although no mitigation is required. Impacts would be less than significant.

Pedestrian and Bicycle Facilities

There are no sidewalks or bike lanes in the immediate vicinity of the project site (VTA 2018a). The nearest sidewalk is located at the west side of Lafayette Street, and the nearest crosswalks are at the controlled intersection of Mathew Street and Lafayette Street. Project construction and operation would take place on-site and would not obstruct any of the limited pedestrian or bicycle facilities in the area or interfere with any future pedestrian or bike plans for the area. Traffic increases generated by the project would be less than significant and would not have significant impacts on pedestrians or bicyclists. Impacts would be less than significant.

Transit

The project site is not directly served by transit. However, there are many nearby transit services, including Caltrain and Altamont Corridor Express rail service, and local bus, light rail, and shuttle service provided by VTA (VTA 2015, VTA 2018). Construction and operation of the project would occur on-site and would not physically obstruct any transit facilities. Construction and operation of the project also would not delay transit services because the project would not generate enough vehicle trips during the peak hour to significantly impact LOS, thereby delaying bus or shuttle service.

Construction and operation of the project could slightly increase the demand for transit if construction workers, employees, and/or visitors used nearby rail or bus service to commute to the site. However, the slight increase in demand would not delay or overburden these facilities. Impacts would be less than significant.

Overall, project impacts to measures of effectiveness for travel, as discussed above, would be less than significant.

c. Would the project result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?

NO IMPACT. The project would not generate additional air traffic and would not encroach on airport land, as the nearest airport, San Jose International Airport, is 0.3 mile away. The project would not result in a change in air traffic patterns.

d. Would the project substantially increase hazards because of a design feature or incompatible uses?

LESS THAN SIGNIFICANT IMPACT.

Obstruction Hazards to Aviation

The Federal Aviation Administration (FAA) establishes a maximum structure height of 212 feet above mean sea level (AMSL) at the project site (SCCALUC 2016). The highest point of the proposed MDC, the top of the rooftop chiller stack, is approximately 120 feet above ground level (AGL). Even when accounting for the varying 40 to 75-foot elevation of the project site above mean sea level, the MDC, at 120 feet AGL, would not exceed the FAA's height limit of 212 AMSL. The project also does not meet the 200-foot threshold for FAA notification and review per Title 14, Part 77, Section 77.9 of the Code of Federal Regulations. Because the height of the project would not exceed the FAA's height limitation of 212 feet or require FAA review, project structures would not be expected to pose an obstruction hazard to aircraft.

Plume Hazards to Aviation

The project's emergency standby generators and air-cooled chillers would discharge thermal plumes, high-velocity columns of hot air, during operation. Thermal plume velocities would be greatest at the discharge points, with plume velocities decreasing with increasing altitude. Plume velocities would also be highest during certain weather conditions, such as cool temperatures and calm winds. High velocity thermal plumes have the potential to affect aviation safety, and the FAA has amended the Aeronautical Information Manual to establish thermal plumes as potential flight hazards (FAA 2015). Aircraft flying through thermal plumes may experience significant air disturbances, such as turbulence and vertical shear. The FAA manual advises that, when able, a pilot should fly upwind of smokestacks and cooling towers to avoid encountering thermal plumes.

Staff uses a peak vertical plume velocity of 10.6 meters per second (m/s) (5.3 m/s average plume velocity) as a screening threshold for potential impacts to aviation. Based on a literature search, this velocity generally defines the point at which aircraft begin to experience severe turbulence.

As part of its recent application, the applicant modeled plume velocity for the project's emergency standby generators and air-cooled chillers to determine whether the project's thermal plumes would exceed 10.6 m/s peak velocity at altitudes where aircraft could fly. The applicant's analysis, which was independently reviewed and accepted by Energy Commission Air Quality staff, states that under the worst-case scenario of cool air and calm winds, and under the worst-case calculation methodology, thermal plume peak vertical velocity would exceed 10.6 m/s up to altitudes of approximately 91 feet AGL for the emergency standby generators and 139 feet AGL for the chillers. Aircraft would not be expected to fly at such low altitudes, especially given that the FAA Part 77 airspace surface at the project site starts at 212 feet AMSL, higher than the altitudes which would experience hazardous thermal plumes (SCCALUC 2016).

The only airport safety zone within which the project is located is the traffic pattern zone, defined as an area routinely overflown by aircraft operating in the traffic pattern. According to the airport's comprehensive land use plan, in the traffic pattern zone, "The potential for aircraft accidents is relatively low and the need for land use restrictions is minimal" (SCCALUC 2016).

The project would not be hazardous to air traffic because the physical height of the project and the maximum height of the thermal plumes would be 1) below the FAA's Part 77 airspace surface, and maximum structure height, of 212 feet AMSL, and 2) below the 200-foot threshold that triggers FAA review; in addition, the project site is not located within a critical safety zone.

The project would not increase any other hazards. All construction would occur on-site and would not result in any hazards to motorists, bicyclists, or pedestrians. Impacts would be less than significant.

e. Result in inadequate emergency access?

LESS THAN SIGNIFICANT IMPACT. The proposed project would not physically block any access roads or result in traffic congestion which could significantly compromise timely access to this facility or any other location.

f. Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities?

LESS THAN SIGNIFICANT IMPACT. The city's IS/MND did not identify any conflicts between the original project and any policies, plans, or programs supporting alternative transportation. The conclusions remain the same for the proposed project. Improvements would occur on-site and would not physically interfere with any mode of alternative transportation. Construction and operation of the project could slightly increase the demand for transit, bicycle, or pedestrian facilities if construction workers, employees, and/or visitors chose these modes of transportation to arrive at the site. However, the slight increase in demand would not delay or overburden these facilities.

Previously Identified Mitigation Measures: None. Although page 127 of the city of Santa Clara's IS/MND includes discussion of implementing a TDM Program to reduce project trips, mitigation is not required.

New Proposed Mitigation Measures: None

5.16.3 References

California Energy Commission 2018—Compilation of Data Clarification Questions and Responses for the McLaren Backup Generation Facility SPPE application review. June 2018. TN223744.

FAA 2015 – Federal Aviation Administration, Aeronautical Information Manual, Chapter 7. Safety of Flight, Section 5: Potential Flight Hazards, Subsection 7-5-15: Avoid Flight in the Vicinity of Exhaust Plumes (Smoke Stacks and Cooling Towers), December 10, 2015, https://www.faa.gov/air_traffic/publications/media/aim.pdf, accessed August 2017.

SC 2010 – City of Santa Clara 2010-2035 General Plan, adopted November 16, 2010, http://santaclaraca.gov/government/departments/community-development/planning-division/general-plan-and-specific-plans, accessed February 2018.

SCCALUC 2016 – Santa Clara County Airport Land Use Commission, Norman Y. Mineta San Jose International Airport Comprehensive Land Use Plan for Santa Clara County, https://www.sccgov.org/sites/dpd/DocsForms/Documents/ALUC_SJC_CLUP.pdf, accessed January 2018.

VTA 2015 – Santa Clara Valley Transportation Authority, 2015 Congestion Management Program, http://vtaorgcontent.s3-us-west-1.amazonaws.com/Site_Content/FINAL%202015%20CMP%20-%20Main%20Document.pdf, accessed January 2018.

VTA 2018 – Santa Clara Valley Transportation Authority, Bus and Rail Map, http://www.vta.org/getting-around/maps/bus-rail-map, accessed January 2018.

VTA 2018a – Santa Clara Valley Transportation Authority, Santa Clara Valley Bikeways Map, http://www.vta.org/sfc/servlet.shepherd/version/download/068A0000001Fc3F, accessed January 2018.

5.17 Tribal Cultural Resources

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.

5.17.1 Setting

The proposed McLaren Data Center (MDC) and McLaren Backup Generating Facility (MBGF) (collectively the "project") would be located in the Santa Clara Valley, an area within the traditional territory of the California Native American Costanoan cultural group. The Santa Clara Valley was formed by the Santa Cruz and Gavilan Mountains on the west and the Diablo Range on the east. The Santa Clara Valley is a structural valley, i.e., it was created by the uplifting mountains, as opposed to erosional forces (NPS 2007; SFEI 2010).

The proposed project would be located in the western Santa Clara Valley, within the watersheds created by the Guadalupe River and creeks emanating from the western mountains (SFEI 2010: Figure 1). Historically, the Guadalupe River was about 1 mile east of the proposed project site, and an unnamed slough was about 1,900 feet southeast of the proposed project site. An analysis of historic maps and field notes identifies the area of the proposed project as having been a "wet meadow" historically, with willow groves along the sloughs that crossed the valley (SFEI 2010). Elevation at the proposed project site is 49.25 feet above sea level. About 15,000 years ago, the coast was about 25 kilometers farther west from where it is today, and slowly rose over time to its current level (Moratto 1984: 219).

The geologic map of Santa Clara County shows the area of the proposed project as Quaternary (Holocene) alluvium (Qha) (Graymer et al. 2006 2006). The age and depositional nature of these deposits are such that the project area retains the potential for unknown, buried tribal cultural resources despite minor previous ground-disturbing activities at the proposed site.

The proposed project site is located north of downtown Santa Clara, in an industrial area at 651 through 825 Mathew Street. Land use in the area is primarily industrial and commercial, with railroad tracks east of the proposed project area and Mathew Street to the south.

An iteration of the MDC portion of the project was approved by the city of Santa Clara in 2017 and the initial phase of construction started prior to submission of the Small Power Plant Exemption (SPPE) application to the Energy Commission for the MBGF portion of the project. This first phase included demolition of existing structures and grading of the western portion of the project area at 725 and 825 Mathew Street.

Regulatory Setting

California Native American Tribes, Lead Agency Tribal Consultation Responsibilities, and Tribal Cultural Resources

Assembly Bill 52 (AB 52) amended the California Environmental Quality Act (CEQA) to define California Native American tribes, lead agency responsibilities to consult with California Native American tribes, and tribal cultural resources. A "California Native American tribe" is a "Native American tribe located in California that is on the contact list maintained by the Native American Heritage Commission (NAHC) for the purposes of Chapter 905 of the Statutes of 2004" (Pub. Resources Code, § 21073). Lead agencies implementing CEQA are responsible to conduct tribal consultation with California Native American tribes about tribal cultural resources within specific time frames, observant of tribal confidentiality, and if tribal cultural resources could be impacted by project implementation, 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 California Register of Historical Resources (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 the aforesaid criteria, the lead agency shall consider the significance of the resource to a California Native American tribe. (Pub. Resources Code, § 21074[a].)

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

21083.2(h) may also be a tribal cultural resource if they conform to the criteria of Public Resources Code, section 21074(a).

AB52 also amended CEQA to state 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).

California *Environmental Quality Act: California Register of Historical Resources*

CEQA provides a significant regulatory overlap between tribal cultural resources and historical resources. CEQA requires the lead agency to evaluate tribal cultural resources by determining whether they meet several sets of specified criteria that make such resources eligible to the CRHR. Those tribal cultural resources eligible to the CRHR are historical resources. The evaluation then influences the analysis of potential impacts to historical resources and the mitigation(s) that may be required to ameliorate any such impacts.

CEQA and the CEQA Guidelines define significant cultural resources under two regulatory definitions, of which tribal cultural resources have the potential to be either: historical resources or 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 CRHR," or "a resource listed in a local register of historical resources or identified as significant in a 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 National Register of Historic Places (NRHP) and California Registered Historical Landmarks from No. 770 onward (Pub. Resources Code, §5024.1[d]).

Under CEQA, a resource is usually considered to be historically significant if it meets the criteria for listing in the CRHR. In addition to being at least 50 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 our history;
- Criterion 2, is associated with the lives of persons significant in our past;
- Criterion 3, embodies the distinctive characteristics of a type, period, 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 to history or prehistory.

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 make a determination as to 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 it does not qualify as a historical resource (Cal. Code Regs., tit. 14, §15064.5[c][3]). Archaeological artifacts, objects, or sites are considered unique archaeological resources if it can be clearly demonstrated that, without merely adding to the current body of knowledge, there is a high probability that it 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 (CEQA defines historical resources to be a part of 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 significances of any potentially impacted historical resource(s);
- how the historical resource(s) significance is manifested physically and perceptually;
- appraisals of those aspects of a 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.

The State CEQA Guidelines at Title 14, California Code of Regulations, section 15064.5(b), define a substantial adverse change as "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."

General Plan Policy

The city of Santa Clara General Plan does not have any goals or policies specifically directed to tribal cultural resources. However, there is significant overlap between tribal cultural resources and historical resources, and the **Cultural Resources** section of this document (Section 5.5) details those policies of the general plan relevant to tribal cultural resources.

The Criteria for Local Significance

The city of Santa Clara does not have any criteria for local significance specifically directed to tribal cultural resources. However, there is significant overlap between tribal cultural resources and historical resources, and the **Cultural Resources** section of this document (Section 5.5) details those criteria for local significance that are relevant for tribal cultural resources.

Tribal Cultural Resources

Tribal cultural resources are a category of resources recently introduced into the CEQA by AB 52. 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 CRHR, or are included on a local register of historic resources as defined in Subdivision K of section 5020.1 of the Public Resources Code.

Tribal cultural resources can be prehistoric, ethnographic, or historic. Tribal cultural resources eligible for the CRHR are considered historical resources, and more information regarding historical resources can be found in the Cultural Resources section (4.5) of this document.

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. The Costanoan language is similar to Miwok, and is part of the Utian language family within the Penutian stock. Tamyen (Santa Clara Costanoan) was spoken around the southern end of San Francisco Bay and the lower Santa Clara Valley (and would have been spoken by those in the area of the proposed project).

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. There were two tribelets in close proximity to the proposed project site, San José Cupertino and Santa Clara; both are presumably Tamyen speakers. (Levy 1978: Figure 1). Kroeber (1976: Figure 42) indicates that two settlements may have been within a few miles of the project site on the Guadalupe River, *Tamie-n* near Santa Clara, and *Ulis-tak* farther north near the 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 practiced a type of slash and burn agriculture 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 1978:491).

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 1978:492).

Bodies were either buried or cremated on the day of death. The Chalon and Rumsen groups likely practiced inhumation, while the Chochenyo and Ramaytush usually cremated their dead. Cremations also entailed burning the deceased's property (Kroeber 1976: 469; Levy 1978: 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 pinon pine nuts. The Miwok obtained olivella shells from the Costanoans. Warfare was conducted both between Costanoan tribelets and also between the Costanoans and the Esselen, Salinan, and Northern Valley Yokuts (Davis 1961:19; Levy 1978:488).

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

A total of seven Spanish missions were established in Costanoan territory between 1770 and 1797. By 1810 the last Costanoan village was subsumed within the mission system. 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 Asiss, 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 1978:486).
More detailed prehistoric and historic context statements can be found in the **Cultural Resources** section (5.5) of this document.

Native American Consultation

Energy Commission staff contacted the Native American Heritage Commission (NAHC) on January 2, 2018 to obtain a search of the Sacred Lands File and a list of tribes who could potentially be interested in the project. The NAHC responded January 18, 2018 (Lienert 2018) that results of the Sacred Lands File search were negative and provided a list of six California Native American Tribes to contact. Staff sent letters to these groups on January 16th and 22nd of 2018 (Tribal Cultural Resources Table 1). Follow-up phone calls were made on February 15, 2018.

Tribal Cultural Resources Table 1 California Native American Tribes Contacted for this Project

Tribe	Cultural Affiliation	Response to date
Amah Mutsun Tribal Band	Ohlone/Costanoan, Northern Valley Yokuts	No response
Amah Mutsun Tribal Band of Mission San Juan Bautista	Ohlone/Costanoan	No response
Northern Valley Yokuts Tribe	Ohlone/Costanoan, Northern Valley Yokuts, Bay Miwok	No response
Muwekma Ohlone Indian Tribe of the SF Bay Area	Ohlone/Costanoan	No response
The Ohlone Indian Tribe	Ohlone/Costanoan, Bay Miwok, Plains Miwok, Patwin	No response
Indian Canyon Mutsun Band of Costanoan	Ohlone/Costanoan	No response

Summary of Tribal Cultural Resources

No tribal cultural resources were identified in the IS/MND for the MDC or in the SPPE application. A record search was conducted by the city's archaeologist and staff submitted a data request for this information but did not receive a complete record search. Due to a lack of information, staff conducted a record search at the Northwest Information Center at Sonoma State University in April 2018. The record search indicated that 184 cultural resources studies were conducted within one mile of the proposed project area, none in the proposed project area. Two studies (Holman 2000, Holman and Alexander 2008), including subsurface archaeological testing, were conducted on parcels within 0.25 miles of the proposed project area. Neither study found buried cultural resources or features during testing.

A total of six prehistoric cultural resource sites, potential tribal cultural resources, were documented within one mile of the proposed project area, the closest of which is about 0.3 miles away. The Old Mission Site, P-43-000433, consisted of a prehistoric lithic scatter and habitation debris, as well as historic components from the Mission period. The CRHR eligibility of this site is unknown. Other prehistoric sites within one mile of the proposed project area include sites with burials and habitation debris.

5.17.2 Environmental Impacts and Mitigation Measures

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)?

NO IMPACT. There will not be any impacts to tribal cultural resources that are listed in the CRHR or other state registers, NRHP, or local register of historical resources.

(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?

LESS THAN SIGNIFICANT WITH MITIGATION INCORPORATED. A total of six prehistoric cultural resource sites, potential tribal cultural resources, were documented within one mile of the proposed project area, the closest of which is about 0.3 miles away. The Old Mission Site, P-43-000433, consisted of a prehistoric lithic scatter and habitation debris, as well as historic components from the Mission period. The CRHR eligibility of this site is unknown. Other prehistoric sites within one mile of the proposed project area include sites with burials and habitation debris.

Consultation with California Native American tribes did not result in the identification of any tribal cultural resources that could be impacted by the proposed project.

However, background research suggests that the proposed project area is located in an area near several ethnographically known villages in addition to several archaeological sites that have provided valuable information regarding the prehistory of the region (Kroeber 1976: Figure 42; Milliken et al. 2007: 102).

The geologic Map of Santa Clara County shows the area of the proposed project as Quaternary (Holocene) alluvium (Qha) (Graymer et al. 2006). The age and depositional nature of these deposits are such that the project area retains the potential for unknown, buried cultural resources despite previous ground-disturbing activities at the proposed site. Boring logs conducted for the proposed project indicate that these alluvial deposits are present to at least 65 feet below the ground surface, and that fill deposits in the area of proposed extensive ground disturbance are limited to one to three feet below the ground surface (Murray Engineers 2016).

Due to the extent of ground-disturbing activities as part of the proposed project, there is potential to impact as-yet unknown, buried cultural resources that could be considered tribal cultural resources, in those parts of the project site that contain native, undisturbed sediments. Based on the buried resource potential of the proposed project area, staff recommends that monitoring for archaeological and tribal cultural resources continue after grading activities regardless of whether or not cultural resources are found during grading.

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 be considered tribal cultural resources. If these resources were to be exposed or destroyed, it would be considered a significant impact. Implementation of Energy Commission staff's recommended mitigation measures MM TCR-1.1 through MM TCR-1.4 would reduce the impacts to unknown tribal cultural resources to less than significant.

Previously Identified Mitigation Measures: None.

New Proposed Mitigation Measures: Staff recommends that the following specific mitigation measures should be printed out on all construction documents and implemented during construction to avoid significant impacts on subsurface tribal cultural resources. These proposed mitigation measures mirror those recommended by staff for cultural resources in section 5.5 of this document.

MM TCR-1.1: A Secretary of the Interior-qualified archaeologist and a Native American cultural resources monitor shall be on site to monitor grading of native soil once all pavement is removed from the project site. The project applicant shall submit the name and qualifications of the selected archaeologist and Native American monitor to the 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:

- Traditional 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 15064.5.
- Ability to advocate for the preservation in place of Native American cultural features through knowledge and understanding 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 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. The archaeologist shall monitor full-time all grading and ground disturbing activities in native soils associated with 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 a summary of monitoring results shall be provided to the 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.

MM TCR-1.2: In the event that prehistoric or historic resources are encountered during on-site construction activities, all activity within a 50-foot radius of the find shall be stopped, the Director of Community Development shall be notified, and a Secretary of the Interior-qualified archaeologist shall examine the find, and record the site, including field notes, measurements, and photography for a Department of Parks and Recreation 523 Primary Record form. The archaeologist, in consultation with the Native American monitor, shall make a recommendation regarding eligibility for the California Register of Historical Resources, a determination if the resource is also a tribal cultural resource, data recovery, curation, or other appropriate mitigation. Ground disturbance within the 50-foot radius can resume once these steps are taken and the Director of Community Development has concurred with the recommendations. Within 30 days of the completion of construction or cultural resources monitoring, whichever comes first, a report of findings documenting any cultural resource finds, recommendations, data recovery efforts, and other pertinent information gleaned during cultural resources monitoring shall be submitted to the Director of Community Development. Once finalized, this report shall be submitted to the Northwest Information Center at Sonoma State University.

MM TCR-1.3: In the event that human remains are discovered during on-site construction activities, all activity within a 50-foot radius of the find shall be stopped. The Santa Clara County Coroner shall be notified and shall make a determination as to whether the remains are of Native American origin or whether an investigation into the cause of death is required. If the remains are determined to be Native American, the Coroner shall notify the Native American Heritage Commission. All actions taken under this mitigation measure shall comply with Health and Human Safety Code § 7050.5(b).

MM TCR-1.4: Prior to and for the duration of ground disturbance, the project owner shall provide Worker Environmental Awareness Program training to all existing and any new employees. This training should include: a discussion of applicable laws and penalties under the laws; samples or visual aids of artifacts that could be encountered in the project vicinity, including what those artifacts may look like partially buried, or wholly buried and freshly exposed; and instructions to halt work in the vicinity of any potential cultural resources discovery.

5.17.3 References

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NPS 2007— National Park Service. Santa Clara County: California's Historic Silicon Valley: Early History. Electronic resource https://www.nps.gov/nr/travel/santaclara/history.htm. Accessed January 31, 2018.

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5.18 Utilities and Service Systems

UTILITIES AND SERVICE SYSTEMS Would the project:	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less than Significant Impact	No Impact
a. Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?	☐	☐	☒	☐
b. Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	☐	☐	☒	☐
c. Require or result in the construction of new stormwater drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	☐	☐	☒	☐
d. Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?	☐	☐	☒	☐
e. Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	☐	☐	☒	☐
f. Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?	☐	☐	☒	☐
g. Comply with federal, state, and local statutes and regulations related to solid waste?	☐	☐	☒	☐

Environmental checklist established by CEQA Guidelines, Appendix G.

5.18.1 Setting

Potable Water Supply

The project would be supplied with potable water provided by the city of Santa Clara, through a 10-inch supply line located beneath Mathew Street. The potable water system gets water from three sources: Santa Clara Valley Water District (SCVWD), the San Francisco Public Utilities Commission (SFPUC), and 26 groundwater wells operated by the city's Water and Sewer Utility. The three sources are used interchangeably or are blended together. In 2015, about 35 percent of the city's potable water came from the imported treated water supplies (the SCVWD and SFPUC). Groundwater made up approximately 65 percent of the city's potable water supply in 2015. The water system in the city consists of more than 335 miles of distribution mains, the 26 groundwater wells, and seven storage tanks with approximately 28.8 million gallons of water capacity. According to the 2015 Urban Water Management Plan (UWMP) prepared for the city, which the Santa Clara City Council approved and adopted on November 22, 2016, the citywide demand for potable water in 2015 was 17,620 acre-feet (City 2017).

Recycled Water Supply

Recycled water is supplied from South Bay Water Recycling (SBWR), which provides advanced tertiary treated water from the San Jose – Santa Clara Regional Wastewater Facility (formerly known as the San Jose/Santa Clara Water Pollution Control Plant). In 2015, recycled water purchased from the SBWR made up approximately 17 percent of the overall water use in the city (UWMP 2016). The city of Santa Clara uses recycled water for the non-potable needs of businesses, industries, parks, and schools located along pipeline routes. According to the 2015 UWMP, the citywide recycled water demand in 2015 was 3,529 acre-feet (UWMP 2016). A 12-inch recycled water line is located under Mathew Street and would be available to serve the proposed project (City 2017).

Wastewater Service

The city of Santa Clara Departments of Public Works and Water and Sewer Utilities are responsible for the wastewater collection system within the city. Wastewater is collected by sewer systems in Santa Clara and is conveyed by pipelines to the San Jose-Santa Clara Regional Wastewater Facility (Regional Wastewater Facility). The Regional Wastewater Facility is owned jointly by the cities of San Jose and Santa Clara and is operated by the city of San Jose's Department of Environmental Services. The Regional Wastewater Facility provides primary, secondary, and tertiary treatment of wastewater. The Regional Wastewater Facility treats an average of 110 million gallons of wastewater per day (mgd), which is 57 mgd (or 35 percent), under its 167-mgd treatment capacity. Approximately 13 percent of the Regional Wastewater Facility's effluent flows to SBWR's adjacent pump station for non-potable uses and the remainder flows into San Francisco Bay. The Regional Wastewater Facility's current Wastewater Discharge Requirements (WDRs) were issued by the San Francisco Regional Water Quality Control Board September of 2014.

Storm Sewer Service

The city of Santa Clara owns and maintains the municipal storm drainage system in the vicinity of the project site. The project site drains by a combination of surface flow and underground pipes (including 6-inch pipes and a 12-inch lateral) towards Mathew Street and ultimately discharges into a 33-inch storm drain under Mathew Street (City 2017). Storm water from the project site drains into the city of Santa Clara's storm water drain system, which discharges to San Tomas Aquino Creek and ultimately the San Francisco Bay.

Solid Waste

Solid waste and recycling collection for businesses at commercial and institutional properties in the city of Santa Clara is provided by Mission Trail Waste Systems through a contract with the city. Newby Island Landfill, located in San José, provides disposal capacity to nearby cities, including San José, Milpitas, Santa Clara, Cupertino, Los Altos, and Los Altos Hills. The city of Santa Clara has an arrangement with the owners of the Newby Island Landfill to provide disposal capacity for the city through 2024, as well as other landfills located outside of the county, according to the city's General Plan. The Santa Clara County Integrated Waste Management Plan estimates there is adequate waste capacity through its planning horizon of 2024. The Newby Island Landfill has a permit to accept a maximum of 3,260 tons of solid waste per day and has a remaining disposal capacity of 21.2 million cubic yards (cy). Solid waste and recycling collection for businesses at commercial and institutional properties in the icty of Santa Clara is provided by Mission Trail Waste Systems through a contract with the city. Demolition and construction activities for the project would result in a temporary increase in solid wastes which would be disposed of in available facilities according to the chemical nature of their constituents. Operations would lead to long-term waste generation. The applicant has discussed the potential nature and sources of these wastes and how to dispose of them without impacts on human or environmental health.

Regulatory Background

Federal Clean Water 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 the proposed project by complying with applicable NPDES permits from the SWRCB or the San Francisco Bay RWQCB. The Regional Wastewater Facility complies with the Clean Water Act through its current NPDES Wastewater Discharge Requirements (WDRs), which were issued by the San Francisco Regional Water Quality Control Board September of 2014.

California Water Code, Sections 10910-10915

California Water Code, Sections 10910-10915 requires water service providers to evaluate stresses to the water supply service system caused by proposed project developments. The code sections require public water systems to prepare water supply assessments (WSA) for certain defined development projects subject to the California Environmental Quality Act (CEQA).

Staff determined that a WSA does not need to be prepared for the proposed project because it does not meet the definition of a "project" as defined in the code. The definition of a project is described below.

According to Section 10912,

(a) "Project" means any of the following:

(1) A proposed residential development of more than 500 dwelling units.

(2) A proposed shopping center or business establishment employing more than 1,000 persons or having more than 500,000 square feet of floor space.

(3) A proposed commercial office building employing more than 1,000 persons or having more than 250,000 square feet of floor space.

(4) A proposed hotel or motel, or both, having more than 500 rooms.

(5) (A) Except as otherwise provided in subparagraph (B), a proposed industrial, manufacturing, or processing plant, or industrial park planned to house more than 1,000 persons, occupying more than 40 acres of land, or having more than 650,000 square feet of floor area.

(B) A proposed photovoltaic or wind energy generation facility approved on or after the effective date of the amendments made to this section at the 2011-12 Regular Session is not a project if the facility would demand no more than 75 acre-feet of water annually.

(6) A mixed-use project that includes one or more of the projects specified in this subdivision.

(7) A project that would demand an amount of water equivalent to, or greater than, the amount of water required by a 500 dwelling unit project.

(b) If a public water system has fewer than 5,000 service connections, then "project" means any proposed residential, business, commercial, hotel or motel, or industrial development that would account for an increase of 10 percent or more in the number of the public water system's existing service

connections, or a mixed-use project that would demand an amount of water equivalent to, or greater than, the amount of water required by residential development that would represent an increase of 10 percent or more in the number of the public water system's existing service connections.

Though the proposed project meets none of the above definitions of "Project," staff reviewed other documents that provide guidance on the implementation of these sections of the Water Code. Further guidance for how to interpret these sections of the Water Code is provided in a California Department of Water Resources document titled "Guidebook for Implementation of Senate Bill 610 and Senate Bill 221 of 2001" (Guidebook) (DWR 2003). A helpful interpretive section on page 3 of the Guidebook explains how to interpret item (1) above. It states that one dwelling unit typically consumes 0.3 to 0.5 acre-feet of water per year (DWR 2003). Therefore 500 dwelling units could be interpreted to mean 150 to 250 acre-feet per year of potable water. The proposed project would only use up to 64 acre-feet per year (City 2017). The proposed project therefore does not meet the criteria of item (1) described above and therefore is not a "Project" as defined in the code.

The Guidebook also provides guidance about how to interpret other items in the list, but the one central theme is that WSAs are necessary for projects that increase the demand on the local system substantially. The Guidebook also emphasizes that WSAs are necessary in areas with a poorly understood water supply, or in an area where the project would increase the demand substantially, or 10-percent (DWR 2003). The project is located in a very well-studied service area with many service connections, but above all, the project is not expected significantly increase the demand on the service system.

California Energy Efficiency Standards for Residential and Nonresidential Buildings—Green Building Code (2011), Title 24 Update (2014)

The California Green Buildings Standards Code applies to planning, design, operation, construction, use, and occupancy of newly constructed buildings and requires installation of energy- and water-efficient indoor infrastructure. The related waste management plan is required to allow for diversion of 50 percent of the generated waste away from the landfill.

City of Santa Clara General Plan

The Santa Clara General Plan includes numerous policies related to utilities and service systems. With respect to waste, General Plan Policy 5.10.1-P8 aims to increase to an 80 percent reduction for solid waste tonnage by 2020, or as consistent with the Climate Action Plan (Plan 2014, City 2017).

Santa Clara City Code

According to Santa Clara City Code Section 8.25.285, applicants seeking building or demolition permits for projects greater than 5,000 sf are required to recycle at least 50 percent of its discards (City 2017).

5.18.2 Environmental Impacts and Mitigation Measures

a. Would the project exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?

LESS THAN SIGNIFICANT IMPACT. The project's wastewater flow would be treated by the Regional Wastewater Facility, which is monitored by the San Francisco Bay RWQCB to ensure compliance with the facility's NPDES wastewater discharge permit. The Regional Wastewater Facility is permitted to treat the industrial and sanitary waste flows that would be generated by the project. Further, as

discussed below, the Regional Wastewater Facility has capacity to accommodate the project's estimated wastewater flow. Therefore, the project would not cause the Regional Wastewater Facility to exceed its wastewater treatment requirements of the San Francisco Bay RWQCB.

b. Would the project require, or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?

LESS THAN SIGNIFICANT IMPACT. The Regional Wastewater Facility treats an average of 110 mgd, which is 57 mgd less than its 167 mgd treatment capacity. The project would generate approximately up to 449,315 gpd of wastewater under worst possible conditions. The expected project discharge is 190,000 gpd, or 0.19 mgd. With implementation of the proposed project, the Regional Wastewater Facility would not increase the need for wastewater treatment beyond the capacity of the Regional Wastewater Facility. Therefore, the Regional Wastewater Facility has the ability to treat wastewater generated by the project and the impact to wastewater treatment facilities would be less than significant.

c. Would the project require, or result in the construction of, new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?

LESS THAN SIGNIFICANT IMPACT. Approximately 96 percent of the project site is currently covered with impervious surfaces. The proposed project would result in less impervious area (74 percent) and likely less storm water runoff. The project would also have to comply with the city's municipal storm water permit, which would additionally reduce the likelihood that the project would result in an increase in storm water discharge from the site. The impact from the project on storm water system capacity would be expected to be less than significant.

d. Are sufficient water supplies available to serve the proposed project from existing entitlements and resources, or would new or expanded entitlements be needed?

LESS THAN SIGNIFICANT IMPACT. The water system in the city is operated and maintained by the city's Water and Sewer Utility. This system is supplied with potable water from three sources: Santa Clara Valley Water District (SCVWD), the San Francisco Public Utilities Commission (SFPUC), and 26 groundwater wells operated by the city's Water and Sewer Utility. The three sources are used interchangeably or are blended together. In 2015, about 35 percent of the city's potable water came from the imported treated water supplies (the SCVWD and SFPUC). Groundwater made up approximately 65 percent of the city's potable water supply in 2015. The water system in the city consists of more than 335 miles of distribution mains, the 26 groundwater wells discussed above, and seven storage tanks with approximately 28.8 million gallons of capacity. According to the 2015 Urban Water Management Plan (UWMP) prepared for the city, which the Santa Clara City Council approved and adopted on November 22, 2016, the citywide demand for potable water in 2015 was 17,620 acre-feet (City 2017). The UWMP also concludes that the city is expected to meet future demands (UWMP 2016). Additionally, the proposed project's demand is unlikely to be significantly greater than the uses of the existing landowners.

The project would utilize about 440 acre-feet per year of recycled water and 64 acre-feet per year of potable water (City 2017). The project is utilizing recycled water for all construction, industrial, and landscaping activities to the maximum extent practicable. The use of recycled water rather than

potable water would minimize the impact of the proposed project on local potable water supplies. The impact from the project on water supplies would be expected to be less than significant.

e. Would the project result in a determination by the wastewater treatment provider that serves or may serve the Proposed Project that it has adequate capacity to serve the Proposed Project's projected demand in addition to the provider's existing commitments?

LESS THAN SIGNIFICANT IMPACT. According to the Sanitary Sewer Capacity Evaluation, the proposed project would not significantly increase wastewater discharge from the site relative to baseline conditions. The evaluation also concludes there is adequate capacity in the wastewater conveyance system for the flows that would be generated by the project and no improvements would be needed (RMC 2017). The impact from the proposed project on wastewater system capacity would be less than significant.

f. Would the project be served by a landfill with sufficient permitted capacity to accommodate the Proposed Project's solid waste disposal needs?

LESS THAN SIGNIFICANT IMPACT. The Newby Island Landfill in San Jose (with a remaining capacity of 21.2 million cubic yards) would provide adequate disposal space for the solid waste associated with the project's demolition, construction, and for operations through 2024. Operating the project would generate approximately 140 pounds of solid waste per day which according to the applicant would amount to an increase of only 0.002 percent of the maximum daily amount of solid waste allowed at the Newby Island Landfill. The impact resulting from the proposed project on landfill capacity would be less than significant.

g. Would the project comply with federal, state, and local statutes and regulations related to solid waste?

LESS THAN SIGNIFICANT IMPACT. The project's solid wastes are proposed for disposal in keeping with the Federal Clean Water Act against area or point-source pollution. Such wastes are also proposed for disposal in keeping with the state of California's and City of Santa Clara's requirements for safe waste handling and disposal.

Previously Identified Mitigation Measures: None.

New Proposed Mitigation Measures: None.

5.18.3 References

City 2017. McLaren Data Center Project, Proposed Mitigated Negative Declaration. Prepared by the city of Santa Clara. Prepared February, 2017

DWR 2003. Guidebook for Implementation of Senate Bill 610 and Senate Bill 221 of 2001. California Department of Water Resources. October 8, 2003.

Plan 2014. City of Santa Clara 2010-2035 General Plan. Approved December 9, 2014. Available at: http://santaclaraca.gov/government/departments/planning-inspection/planning-division/general-plan. Accessed: February 1, 2018.

RMC 2017 Sanitary Sewer Capacity Evaluation for the McLaren Data Center Development at 651, 725-795, and 825 Mathew Street (APN: 224-40-001, 224-40-002, and 224-40-011). Prepared by RMC Water and Environment, January 20, 2017.

UWMP 2016 City of Santa Clara 2015 Urban Water Management Plan. Prepared by the City of Santa Clara Water and Sewer Utilities. Adopted November 22, 2016.

WPCP 2013 San Jose/Santa Clara Water Pollution Control Plant. Plant Master Plan. Prepared November 2013.

5.19 Mandatory Findings of Significance

MANDATORY FINDINGS OF SIGNIFICANCE	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less than Significant Impact	No Impact
a. Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal, or eliminate important examples of the major periods of California history or prehistory?	☐	☒	☐	☐
b. Does the project have impacts that are individually limited, but cumulatively considerable? (*Cumulatively considerable* means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects.)	☐	☐	☒	☐
c. Does the project have environmental effects that would cause substantial adverse effects on human beings, either directly or indirectly?	☐	☐	☒	☐

Environmental checklist established by CEQA Guidelines, Appendix G.

a. Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal, or eliminate important examples of the major periods of California history or prehistory?

LESS THAN SIGNIFICANT WITH MITIGATION INCORPORATED. As described in section **5.4 Biological Resources**, the project property is within an established urbanized industrial zone in the city of Santa Clara and the vegetation on the property is limited to an expanse of ornamental, non-native shrubs along the eastern boundary. No special-status plant species were located on site; therefore, the proposed project would not reduce the number or restrict the range of any rare or endangered plant species. Areas impacted by construction and operation of the proposed project contain no natural or sensitive habitats. Therefore, the proposed project would not cause a fish or wildlife population to drop below self-sustaining levels, or threaten to eliminate a plant or animal community.

The site and surrounding area do not support wildlife species or migratory wildlife corridors, however the non-native volunteer shrubs along the east side of the project site could provide potential suitable nesting habitat for migratory birds. The city's Initial Study and Mitigated Negative Declaration adopted for the original configuration of the McLaren Data Center (MDC) includes **MM BIO-1.1**, which requires the owner to conduct pre-construction nesting surveys for birds that would be covered by the Migratory Bird Treaty Act (MBTA) and California Fish and Game Code on the site and immediate vicinity if construction activity is to occur during the breeding season. If nests are discovered, appropriate non-disturbance buffers would be established and maintained during construction until such time as the nest is no longer active. With this mitigation measure, impacts to avian species covered by the MBTA and Fish and Game Code would be avoided.

Historical resources, as defined by CEQA, are not known to be present in the project area. Due to the extent of ground-disturbing activities as part of the proposed project, there is potential to impact unknown, buried archaeological resources in those parts of the project area that encounter native, undisturbed sediments. If these resources were to be exposed or destroyed, it would be considered a significant impact. As detailed in section **5.5 Cultural Resources**, implementation of modified mitigation measures **MM CR-1.1** through **MM CR-1.3 and new mitigation measure MM CR-1.4** would reduce the impacts to unknown cultural resources to less than significant. The proposed project therefore is unlikely to eliminate important examples of major periods of California history or prehistory.

Tribal cultural resources, as defined by CEQA, have been identified in the project area. As described in section **5.17 Tribal Cultural Resources**, a total of six prehistoric cultural resource sites, potential tribal cultural resources, were documented within one mile of the proposed project area, the closest of which is about 0.3 miles away. The Old Mission Site, P-43-000433, consisted of a prehistoric lithic scatter and habitation debris, as well as historic components from the Mission period. 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 be considered tribal cultural resources. Implementation of Energy Commission staff's recommended mitigation measures **MM TCR-1.1** through **MM TCR-1.4** would reduce the impacts to unknown tribal cultural resources to less than significant. The proposed project therefore is unlikely to eliminate important examples of major periods of California history or prehistory.

b. Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, effects of other current projects, and the effects of probable future projects.)

LESS THAN SIGNIFICANT IMPACT. Section 15130(a) of the CEQA Guidelines establishes that a cumulative impact analysis should determine whether the proposed project, in combination with other approved or foreseeable projects, would result in a significant cumulative impact, and, if so, whether the project's contribution to the significant cumulative impact would be cumulatively considerable. The CEQA Guidelines requires a cumulative analysis to include either a list of past, present and probable future projects, or a projection approach using adopted local, regional or statewide plans.

In accordance with Section 15130(b)(1)(b) of the CEQA Guidelines, the cumulative analysis for this project uses the projection approach to evaluate cumulative impacts relying on the city of Santa Clara's Final Environmental Impact Report for its 2010-2035 General Plan (General Plan EIR). The General Plan EIR was developed using assumed average densities and intensities applied to vacant land and sites with redevelopment/intensification potential, identified as "Areas of Potential Development" (SC GP 2014). Not all areas may develop within the General Plan horizon; however, the General Plan projections quantify the best estimate of the potential effects of development based on a combination of reasonable assumptions.

The initial study prepared by the city of Santa Clara for the McLaren Data Center (MDC) determined the project to be consistent with the city's 2010-2035 General Plan (General Plan) and city code. The initial study also concluded the MDC would not result in cumulative impacts. As discussed in Energy Commission staff's analysis, with implementation of mitigation measures adopted in the city's initial study and additional measures proposed by staff, the project (which includes the McLaren Backup

Generating Facility) would be consistent with adopted city plans and ordinances. Because the project would comply with all applicable laws, ordinances, regulations and standards, the cumulative impacts of the project are accounted for in the General Plan.

Included below is a discussion of the potentially significant cumulative impacts identified in the city's General Plan EIR and the project's contribution to those impacts.

Less Than Significant Cumulative Impacts

The General Plan EIR concluded that there would be less than significant cumulatively considerable impacts on:

- Aesthetics
- Agriculture and Forestry Resources
- Biological Resources
- Cultural Resources
- Geology and Soils
- Hazards and Hazardous Materials
- Hydrology and Water Quality
- Land Use / Planning
- Mineral Resources
- Public Services
- Parks and Recreation

CEQA section 15130(d) states that "[n]o further cumulative impacts analysis is required when a project is consistent with a general, specific, master or comparable programmatic plan where the Lead Agency determines that the regional or area-wide cumulative impacts of the proposed project have already been adequately addressed." Given that the project (with mitigation) would have a less than significant impact on these resources, the project's contribution to these impacts would not be singularly or cumulatively considerable and are not discussed further.

Potentially Significant Cumulative Impacts

The General Plan EIR identified the following potentially significant environmental impacts:

- Population and Housing
- Air Quality / Greenhouse Gas Emissions
- Utilities and Service Systems (Solid Waste)
- Noise (Traffic)

The project, in combination with future development in the city of Santa Clara, may have a significant cumulative impact to these environmental resources. The following discussion describes how the project's contribution to these impacts would be less than cumulatively considerable.

Population and Housing

The General Plan EIR identified significant land use impacts from the build-out of the General Plan land use designations. The General Plan EIR concluded that the proposed land uses would create a regional jobs/housing imbalance, as workers who are unable to live near their employment would commute long distances from outlying areas. As described in section **5.13 Population and Housing**, the project would not displace any people or housing, or necessitate construction of replacement housing elsewhere. Full build-out of the project is anticipated to require approximately 29 employees. The project's construction and operation workforce would not directly or indirectly induce a substantial population growth in the project area. Therefore, the project's contribution to this cumulative impact would not be cumulatively considerable.

Air Quality / Greenhouse Gas (GHG) Emissions

The Bay Area Air Quality Management District's *California Environmental Quality Act, Air Quality Guidelines* states that for stationary-source projects, the GHG emissions threshold is 10,000 metric tons per year of carbon dioxide equivalent (CO_2e). If annual operating emissions of GHGs exceed these levels, the proposed project would result in a cumulatively considerable contribution to GHG emissions and a cumulatively significant impact to global climate change. The project's GHG emissions are expected to be less than the 10,000 metric tons per year threshold of CO_2e and would not be considered cumulatively significant.

Utilities and Service Systems

As stated in section **5.18 Utilities and Service Systems**, the city of Santa Clara has available landfill capacity at the Newby Island Landfill in the city of San Jose through 2024. The current landfill impacts are addressed within an ongoing Integrated Waste Management Plan of the city of Santa Clara to provide waste disposal services. The project would generate waste as a result of demolition of the existing buildings and minimal operational waste as data centers typically require very little equipment turnover. Additionally, the project does not include a residential component and would not generate any increases in the supply and demand of utility services and infrastructure. Therefore, the project's contribution to this cumulative impact would not be cumulatively considerable.

Noise

The General Plan EIR anticipates substantial increase in roadway noise levels from the build-out of the General Plan. The noise impacts associated with increased traffic volumes would be significant and likely unavoidable. As discussed in section **5.16 Transportation/Traffic**, traffic from the project would not have a significant impact on surrounding roadways and the transportation network. The project would contribute vehicle trips during the construction period as hauling trucks remove debris and deliver construction materials to the project site. These trips would be temporary in nature; therefore, they would not significantly add to average traffic volumes. The 29 operational employees would generate minimal daily trips and would not substantially increase the traffic volume in the project area. The project's contribution to this cumulative impact would not be cumulatively considerable.

c. Does the project have environmental effects, which would cause substantial adverse effects on human beings, either directly or indirectly?

LESS THAN SIGNIFICANT IMPACT. The proposed project would not cause substantial adverse effects on human beings either directly or indirectly. The proposed project would result in temporary impacts to human health during construction, including changes to air quality, exposure to geologic hazards,

noise, and exposure to hazardous materials. As discussed in section **5.3 Air Quality**, with implementation of the proposed mitigation measure **MM AIR-1.1**, the project would result in a less than significant impact related to dust emissions during project construction. As discussed in section **5.6 Geology and Soils**, implementation of seismic design guidelines in the current California Building Code and project-specific recommendations in a final geotechnical engineering report would ensure the project would not expose people or property to significant impacts associated with geologic or seismic conditions onsite. The proposed project would result in temporary noise impacts to humans during construction. As discussed in section **5.12 Noise**, construction-related noise impacts would be less than significant with implementation of mitigation measure **MM NOI-1.1**. As discussed in section **5.8 Hazards and Hazardous Materials**, hazards impacts would be less than significant with implementation of mitigation measures **MM HAZ-1.1** through **MM HAZ-1.3**. These measures would protect on-site workers from exposure to asbestos and lead-based paint during demolition of existing buildings. No additional impacts to human beings would occur during operation and maintenance activities.

5.19. References

SC GP 2010 – City of Santa Clara General Plan 2035, Available: http://santaclaraca.gov/government/departments/community-development/planning-division/general-plan-and-specific-plans

Accessed: February 8, 2018

SC EIR 2011 – City of Santa Clara General Plan Integrated Final EIR, Available: http://santaclaraca.gov/government/departments/community-development/planning-division/general-plan-and-specific-plans

Accessed: February 8, 2018

Vantage 2017—Vantage Data Centers, LLC. Application for Small Power Plant Exemption: McLaren Backup Generating Facility (17-SPPE-1). December 2017. TN22041-13.

Vantage 2018—Vantage Data Centers, LLC. Vantage Data Center's Revised SPPE Application for McLaren Backup Generating Facility. May 21, 2018. TN# 223483.

5.20 Environmental Justice

5.20.1 Setting

Environmental Justice Figure 1 shows 2010 census blocks in a six-mile radius of McLaren Data Center (MDC) and McLaren Backup Generating Facility (MBGF) (together, project) with a minority population greater than or equal to 50 percent (US Census 2010). The population in these census blocks represents an environmental justice (EJ) population based on race and ethnicity as defined in the United States Environmental Protection Agency's Guidance on Considering Environmental Justice During the Development of Regulatory Actions (US EPA 2015).

Based on California Department of Education data in **Environmental Justice Table 1** and presented in **Environmental Justice Figure 2**, staff concludes that the percentage of those living in the school districts of Campbell Union, San Jose Unified, and Luther Burbank (in a six-mile radius of the project site) and enrolled in the free or reduced price meal program is larger than those in the reference geography, and thus are considered an EJ population based on a low income population as defined in *Guidance on Considering Environmental Justice During the Development of Regulatory Actions*.

Environmental Justice Table 1Low Income Data within the Project Area

SCHOOL DISTRICTS IN SIX-MILE RADIUS	Enrollment Used for Meals	Free or Reduced Price Meals	
Berryessa Union Elementary	7,296	2,358	32.3%
Cambrian	3,514	538	15.3%
Campbell Union	7,465	3,101	41.5%
Cupertino Union	18,598	790	4.2%
Luther Burbank	520	452	86.9%
Milpitas Unified	10,260	3,303	32.2%
Moreland	4,780	1,375	28.8%
San Jose Unified	32,004	14,344	44.8%
Santa Clara Unified	15,409	5,509	35.8%
Sunnyvale	6,536	2,005	30.7%
REFERENCE GEOGRAPHY			
Santa Clara County	273,290	98,603	36.1%

Source: CDE 2017.

5.20.2 Environmental Impacts and Mitigation Measures

The following technical areas discuss impacts to EJ populations: **Aesthetics**, **Air Quality**, **Hazards and Hazardous Materials**, **Hydrology and Water Quality**, **Land Use and Planning, Noise**, **Population and Housing**, **Transportation and Traffic**, **Tribal Cultural Resources**, **Utilities and Service Systems**, and **Mandatory Findings of Significance**.

Aesthetics. *NO IMPACT.* EJ populations may experience disproportionate visual impacts if the siting of visually intrusive or degrading projects, particularly unmitigated industrial facilities, occurs within or near EJ communities to a greater extent than within the community at large.

As depicted in **Environmental Justice Figure 1**, the project site is located in an area with a high minority population. However, as stated in the aesthetics section, the proposed buildings would be visually similar to the surrounding land uses which primarily include heavy industrial and commercial and would be compatible with the mixed visual character and quality of the surrounding area. In addition, the proposed buildings and site improvements would be subject to the City of Santa Clara's design review process to ensure that the project would not adversely affect the visual quality of the project area and would conform to current architectural and landscaping standards. Implementation of the proposed project would not substantially degrade the existing visual quality or character of the site or its surroundings and, therefore, would not have the potential to adversely affect the high minority population in which the project site is located.

As depicted in **Environmental Justice Figure 2**, the project site is located approximately ½ mile west of the nearest low-income population. This low-income population area would not fall within the project's foreground viewshed or visual sphere of influence.

Air Quality. *LESS THAN SIGNIFICANT IMPACT.* Staff identified the potential public health impacts (i.e. cancer and non-cancer health effects) which could affect the EJ population represented in **Environmental Justice Figure 1** and **Figure 2**. These potential public health risks were evaluated quantitatively based on the most sensitive population, which includes the EJ population, by conducting a health risk assessment. The results were presented by level of risks. The potential construction and operation risks are associated with exposure to diesel particulate matter (DPM), total organic gases (TOG) in diesel exhaust, and evaporative and exhaust TOGs from gasoline vehicles. The toxic air contaminants (TACs) from TOG include 1,3-Butadiene, Acetaldehyde, Benzene, Ethylbenzene, Formaldehyde, n-Hexane, Methanol, Methyl Ethyl Ketone, Napthalene, Propylene, Styrene, Toluene, and Xylene. Staff concluded that no one (including the public, off-site nonresidential workers, recreational users, and EJ populations) would experience any acute or chronic cancer or non-cancer effects of health significance during construction and operation of the project. Therefore, construction and operation of the project would not cause significant adverse direct or indirect public health impacts from the project's toxic air emissions and no additional mitigation is needed. Likewise, the project would not cause disproportionate public health impacts on sensitive populations, such as the EJ population represented in **Environmental Justice Figure 1** and **Figure 2**.

LESS THAN SIGNIFICANT IMPACT. The analysis considers the most sensitive and most protective of the population which includes the EJ population, therefore the conclusions staff has come to would include that of the EJ population. Staff evaluated project impacts concluding that air quality impacts during the construction of the project would be less than significant with mitigation incorporated and air quality impacts for all criteria pollutants during operation of both the MDC and MBGF would be less than significant. Staff reviewed the applicant's computer modeling analysis of the impact of the proposed project on health-based federal and state of California ambient air quality standards and conducted additional independent analysis. Staff concludes that both construction and operational emissions from the project would not cause or contribute to a violation of any state or federal ambient air quality standard, or conflict with applicable plans and programs to attain or maintain ambient air quality. Based on these conclusions, the project would not cause disproportionate air quality impacts for sensitive populations like the EJ population represented in **Environmental Justice Figure 1** and **Figure 2**.

Hazards and Hazardous Materials. *LESS THAN SIGNIFICANT IMPACT.* EJ populations may experience disproportionate hazards and hazardous materials impacts if the storage and use of hazardous materials within or near EJ communities occur to a greater extent than within the community at large. A

disproportionate impact upon the EJ population resulting from the planned storage and use of hazardous materials on the site is extremely low. Diesel fuel to run the emergency generators is the hazardous material that the project site would have in greatest quantity. The total quantity would be divided up and stored in many separate double-walled containers (one for each generator) with proper spill controls. Therefore, the likelihood of a spill of sufficient quantity to impact the surrounding community and EJ population would be very unlikely, thus is considered less than significant.

Hydrology and Water Quality. *LESS THAN SIGNIFICANT IMPACT.* A disproportionate hydrologic or water quality impact on an EJ population could occur if a project required substantial groundwater resources or contributed significantly to surface water or groundwater quality degradation.

As determined in the Hydrology and Water Quality section, the project would utilize recycled waste water as its primary source for industrial supply water. The use of recycled water would preserve potable water for other uses. The use of recycled water by the proposed project would therefore not result in a disproportionate impact to the local EJ population.

The project is not expected to contribute significantly to surface water or groundwater degradation. The project would be required to comply with the Clean Water Act by controlling the discharge of pollutants in storm water during its construction and operation phases. The project would implement modern operational phase storm water controls that would improve upon the site's existing storm water discharge controls. The project is therefore expected to provide a long-term water quality benefit and would not result in a disproportionate impact to the local EJ population. The project's hydrology and water quality impacts would be reduced to less than significant for all the area's population, including the EJ population.

Land Use and Planning. *NO IMPACT*. A disproportionate land use impact on an EJ population could occur if a project would physically divide the established community of an EJ population or if a project near an EJ population would conflict with applicable land use plans, policies, or regulations adopted for the purpose of avoiding or mitigating environmental impacts on a population.

Staff concludes the project would not divide an existing community, as the site is on land designated and zoned for industrial uses and is generally surrounded by industrial uses and commercial uses. The project would be consistent with the city of Santa Clara General Plan land use designation and with approval of the zoning administrator minor modification to allow a building height increase up to 25 percent; the project would be consistent with the zoning district. No conflicts with plans, policies, or related land use regulations would occur.

Staff concludes that the project would not pose significant individual impacts relating to land use and planning; therefore, no disproportionate impacts on the EJ population would occur either.

Noise. *LESS THAN SIGNIFICANT IMPACT.* EJ populations may experience disproportionate noise impacts if the siting of unmitigated industrial facilities occurs within or near EJ communities to a greater extent than within the community at large. As depicted in **Environmental Justice Figure 1** and **Figure 2**, the project site is within an area having an EJ population. Because the area surrounding the site is primarily industrial and warehouse commercial uses with few individual residences located 400–475 feet west of the site, potential impacts would not be disproportionate.

Demolition and construction activities would increase existing noise levels at the adjacent commercial and industrial land uses, but they would be temporary and intermittent. In addition, demolition and

construction would not occur on weekends and holidays in compliance with the Santa Clara City Code, Section 9.10.040. Therefore, potential noise effects related to demolition and construction would not result in a significant noise impact on the area's population, including the EJ population.

LESS THAN SIGNIFICANT IMPACT. The noise from operating the facility (MDC and MBGF combined) would exceed the City of Santa Clara's noise limits at the nearest land uses. Therefore, in its noise analysis for this project, staff has adopted noise mitigation measure NOI-1.1 as described in the city's Mitigated Negative Declaration (MND) for the MDC site. NOI-1.1 requires the project to prepare and implement appropriate sound attenuation measures to ensure that its outdoor mechanical equipment does not generate noise in excess of the city's limits. Also in its noise analysis, staff recommends that NOI-1.1 include both the MDC and MBGF. With this mitigation measure implemented for the entire facility, project noise would comply with the city's noise limits, and thus, its noise impacts would be reduced to less than significant for all the area's population, including the EJ population.

Population and Housing. *LESS THAN SIGNIFICANT IMPACT*. Because the study area used in this analysis for impacts related to population influx and housing supply includes Campbell, Cupertino, Milpitas, San Jose, Sunnyvale, Santa Clara, and Santa Clara County, staff considered the project's population and housing impacts on the EJ population living in these geographic areas.

The potential for population and housing impacts is predominantly driven by the temporary influx of non-local construction workers seeking lodging closer to a project site. For the project, the construction workers would be drawn from the greater Bay Area and thus would not likely seek temporary lodging closer to the project site. The operations workers are also anticipated to be drawn from the greater Bay Area and would not likely seek housing closer to the project site. If some operations workers were to relocate closer to the project site, there would be sufficient housing in the project area.

A population and housing impact could disproportionately affect an EJ population if the project were to displace minority or low income residents from where they live, causing them to find housing elsewhere. If this occurs, an EJ population may have a more difficult time finding replacement housing due to racial biases and possible financial constraints. As the project would not displace any residents or remove any housing, there would be no disproportionate impact to EJ populations from this project.

Transportation and Traffic. *LESS THAN SIGNIFICANT IMPACT*. Significant reductions in levels may significantly impact EJ populations. In particular, an impact to bus transit, pedestrian facilities, or bicycle facilities could cause disproportionate impacts to low-income communities, as low-income residents more often use these modes of transportation. However, all transportation and traffic impacts, including impacts to alternative transportation, would be less than significant, and therefore would cause less than significant impacts to EJ populations. Likewise, transportation and traffic impacts would not be disproportionate.

Tribal Cultural Resources. *NO IMPACT*. Staff considered environmental justice populations in its analysis of the project. Staff did not identify any Native American environmental justice populations that either reside within 6 miles of the project or that rely on any subsistence resources that could be impacted by the proposed project.

Utilities and Service Systems. *LESS THAN SIGNIFICANT IMPACT.* A disproportionate utility or service system impact on an EJ population could occur if a project required substantial water resources or significantly impacted wastewater treatment facility and landfill capacity.

As determined in the Utilities and Service Systems section, the project would utilize recycled waste water as its primary source for industrial supply water. The use of recycled water would preserve potable water for other uses. The use of recycled water by the proposed project would therefore not result in a disproportionate impact to the local EJ population.

There is also significant remaining capacity at the local landfill and wastewater treatment facilities that would be utilized by the project. No changes or expansion to the landfill or wastewater treatment facility would be needed to accommodate this project. The project would also be required to comply with state and local regulations that apply to construction and operation waste. These regulations would require that wastes are managed to meet waste diversion goals and protect public health and safety. The project would therefore not have a disproportionate impact on the EJ population.

The project's Utilities and Service Systems impacts would be reduced to less than significant for all the area's population, including the EJ population.

Mandatory Findings of Significance. *LESS THAN SIGNIFICANT IMPACT.* Staff analysis concluded that cumulative project impacts would be less than significant. Cumulative impacts would be less than significant for both the general population and the EJ population.

5.20.3 References

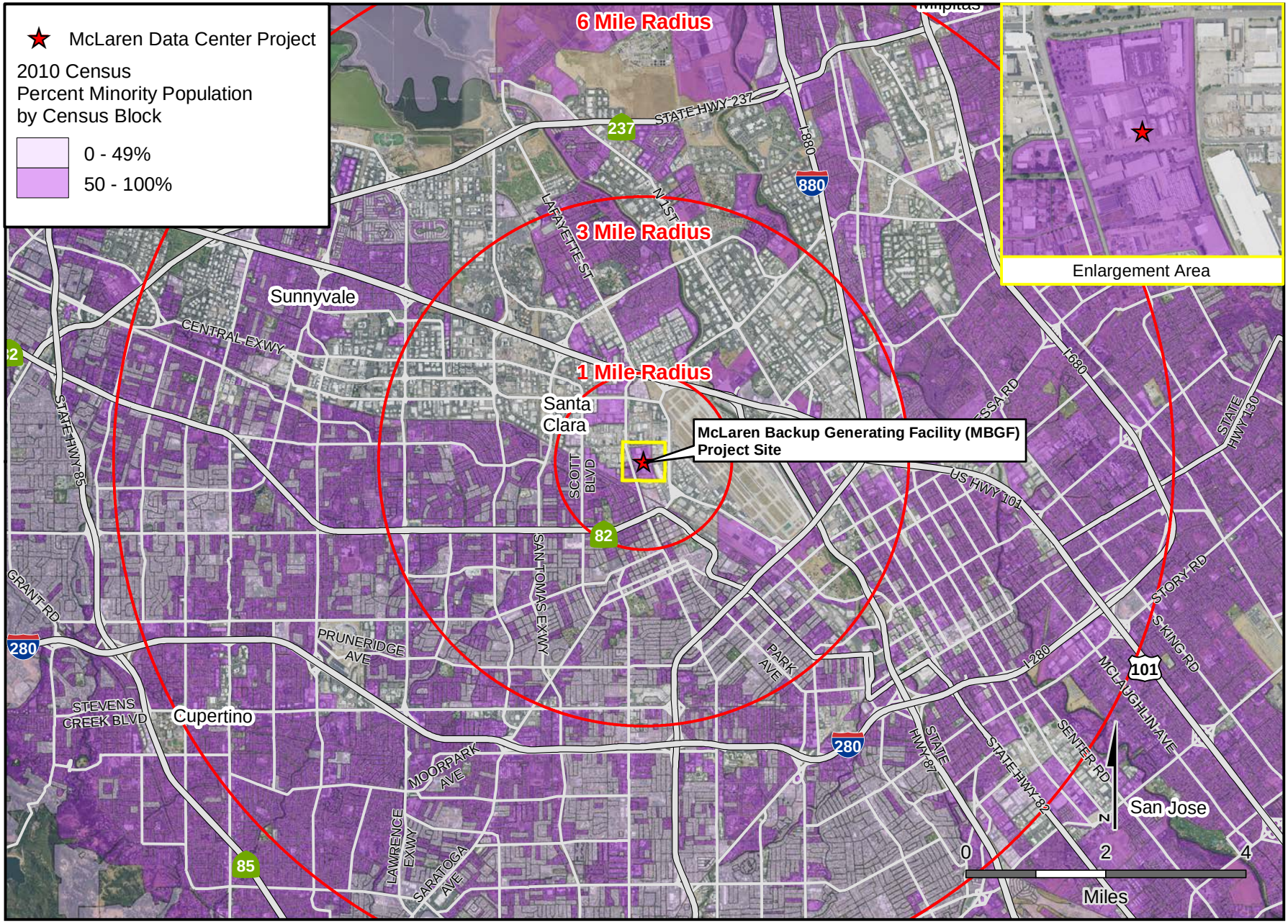
CDE 2017 – California Department of Education, DataQuest, Free or Reduced Price Meals, District level data for the year 2016-2017, http://dq.cde.ca.gov/dataquest/

US Census 2010 – United States Census Bureau, QT-PL-Race, Hispanic or Latino, Age, and Housing Occupancy: 2010 – Census Redistricting Data (Public Law 94-171) Summary File, Tables P1, P2, P3, P4, H1, http://factfinder2.census.gov/faces/nav/jsf/pages/index.xhtml

US EPA 2015 – United States Environmental Protection Agency, Guidance on Considering Environmental Justice During the Development of Regulatory Actions, May 2015, https://www.epa.gov/environmentaljustice/guidance-considering-environmental-justice-during-development-action

ENVIRONMENTAL JUSTICE - FIGURE 1

McLaren Backup Generating Facility (MBGF) - Census 2010 Minority Population by Census Block



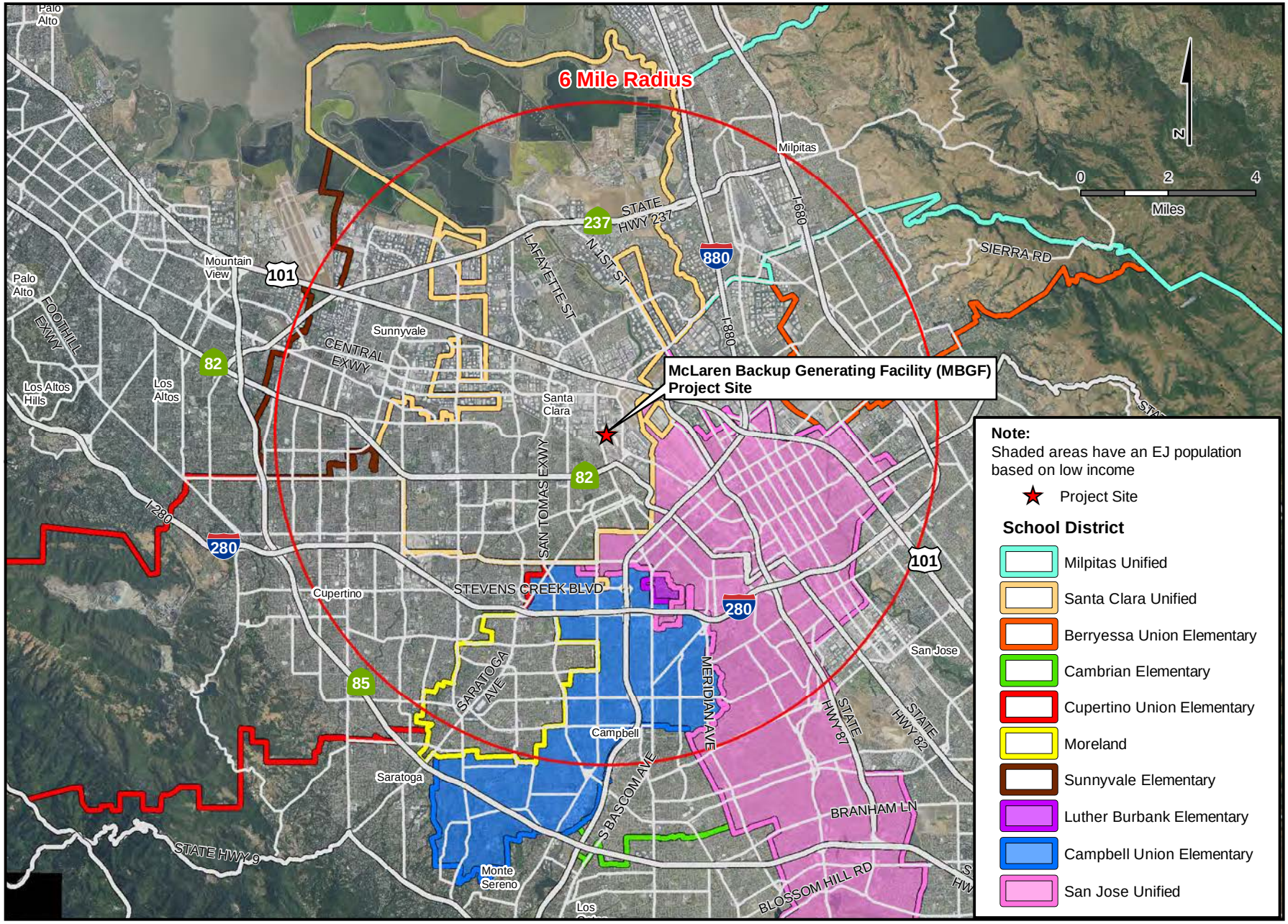
ENVIRONMENTAL JUSTICE

CALIFORNIA ENERGY COMMISSION - SITING, TRANSMISSION AND ENVIRONMENTAL PROTECTION DIVISION

SOURCES: Census 2010 PL 94-171 Data

ENVIRONMENTAL JUSTICE - FIGURE 2

McLaren Backup Generating Facility (MBGF) - Environmental Justice Population Based on Low Income



ENVIRONMENTAL JUSTICE

CALIFORNIA ENERGY COMMISSION - SITING, TRANSMISSION AND ENVIRONMENTAL PROTECTION DIVISION

SOURCES: TIGER Data, S1701 ACS 5-Year Estimates, CA Dept. of Education Quest

5.21 Energy Resources

5.21.1 Setting

The Energy Commission is required to make findings as to whether energy use by the McLaren Backup Generating Facility (MBGF) would cause significant adverse impacts on the environment, as defined in the California Environmental Quality Act, Appendix F. If the Energy Commission finds that the MBGF consumption of energy would create a significant adverse impact, it must determine whether there are any feasible mitigation measures that could eliminate or minimize the impacts. An adverse impact can be considered significant if it results in adverse effects on local and regional energy supplies and energy resources.

5.21.1.1 Regulatory Setting

No Federal, State, or local laws, ordinances, regulations and standards (LORS) apply to energy resources for this project.

5.21.2 Environmental Impacts and Mitigation Measures

The MBGF would consist of a total of 47 diesel-fired emergency backup engine generators that would be used exclusively to provide backup generation to support the McLaren Data Center (MDC). Each generator would have a net continuous output capacity of 1.93 MW, totaling 90.5 MW. In addition, the MBGF would include three life safety emergency generators capable of generating 600 KW each, to support fire suppression and other emergency operations. These generators would also be diesel-fired but would not provide power supply for the project. Staff has verified the output capacity of these generators by studying their product sheets (Caterpillar Model 3516E). The backup generators would operate for short periods for testing and exercising purposes and otherwise would not operate unless there is an interruption of the utility supply. None of the generators would be interconnected to the electrical transmission grid and therefore no electricity could be delivered off site.

The combined total number of hours of operation for reliability purposes (i.e.; testing and maintenance) for all of the engines is limited to approximately 50 hours per generator annually (MBGF 2017a, SPPE § 3.1). At this rate, the total quantities of diesel fuel used for all the engines operating at full load would be approximately 10,870 barrels per year (bbl/yr). Compared to California's diesel fuel capacity of approximately 326,538,000 bbl/yr, this rate is insignificant (0.003 percent).

Therefore, the project would not have a significant adverse effect on local and regional energy supplies, it would not create a significant adverse impact on energy resources, and no mitigation measures are needed. No mitigation measures are necessary and none are proposed.

5.21.3 References

Vantage 2017—Vantage Data Centers, LLC. Application for Small Power Plant Exemption: McLaren Backup Generating Facility (17-SPPE-1). December 2017. TN22041-13.

Vantage 2018—Vantage Data Centers, LLC. Vantage Data Center's Revised SPPE Application for McLaren Backup Generating Facility. May 21, 2018. TN# 223483.

Section 6

Authors and Reviewers

6. Authors and Reviewers

Lead Agency—California Energy Commission

Technical Staff /Section Authors
John Hope (Aesthetics)
Jeanine Hinde (Agriculture/Forestry, Land Use)
Jacque Leyva, Wenjun Qian, Ann Chu (Air Quality, Greenhouse Gas)
Tia Taylor (Biology)
Matt Braun/Melissa Mourkas (Cultural Resources, Tribal Cultural Resources)
Garry Maurath (Paleontology, Geology/Soils, Minerals)
Brett Fooks (Hazards/Hazardous Materials, Public Services)
Mike Conway (Hydrology/Water Resources, Utilities/Service Systems)
Shahab Khoshmashrab (Noise, Energy Resources)
Lisa Worrall (Population/Housing, Public Services, Recreation, Environmental Justice)
Andrea Koch (Traffic/Transportation)
Obed Odoemelam (Waste, Transmission)
Scott Polaske (Cumulative Impacts/Mandatory Findings)

Supervision and Management
Gerry Bemis, Air Quality Unit Supervisor
Jon Hilliard, Biology Unit Supervisor
Tom Gates, Cultural Unit Supervisor
Paul Marshall, Engineering Unit Supervisor
Geoff Lesh, Engineering Unit Supervisor
Steve Kerr, Land Use Unit Supervisor
Jonathan Fong, Land Use Unit Supervisor
Mark Hesters, Transmission Unit Supervisor
Eric Knight, Environmental Office Manager
Matt Layton, Engineering Office Manager
Chris Davis, Siting Office Manager
Shawn Pittard, Deputy Director—Siting, Transmission and Environmental Protection

Project Management/Legal
Leonidas Payne, Siting Project Manager
Jared Babula, Staff Counsel

Appendix A

City of Santa Clara - Proposed Mitigated Negative Declaration and Initial Study

DOCKETED

Docket Number:	17-SPPE-01
Project Title:	McLaren Backup Generating Facility
TN #:	222057
Document Title:	Application for Small Power Plant Exemption for McLaren Backup Generating Facility - Appendix B Part 1
Description:	*** THIS DOCUMENT SUPERSEDES TN 222041-2 ***
Filer:	Patty Paul
Organization:	DayZen LLC
Submitter Role:	Applicant Representative
Submission Date:	12/26/2017 9:59:48 AM
Docketed Date:	12/26/2017

McLaren Data Center Project

PROPOSED MITIGATED NEGATIVE DECLARATION (MND)

Pursuant to the California Environmental Quality Act (CEQA) Division 13, Public Resources Code

City of Santa Clara
1500 Warburton Avenue
Santa Clara, CA 95050
(408) 615-2450

Project Description

The project site is 8.97 acres (390,900 square feet [sf]) and located at 651, 725, and 825 Mathew Street in Santa Clara, California (refer to Figures 2.0-1, 2.0-2, and 2.0-3). The project site is comprised of three parcels used for industrial warehouse, manufacturing, and office purposes as well as associated surface parking. The existing buildings on the project site have a total footprint of approximately 147,600 sf. There are no trees and limited landscaping present on the project site. The westernmost portion of the project site is the 0.26-acre APN 224-40-011 (located at 825 Mathew Street). Vehicle ingress and egress for this parcel is provided by one gated driveway along Mathew Street. The central portion of the project site is the 4.36-acre APN 224-40-002 (located at 725 Mathew Street). Vehicle ingress and egress to this parcel is provided by one gated driveway along Mathew Street. The easternmost portion of the project site is the 4.35-acre APN 224-40-001 (located at 651 Mathew Street). Vehicle ingress and egress to this parcel is provided by one gated driveway along Mathew Street. APNs 224-40-001 and 224-40-002 were developed as canneries in the late 1940s. The limited landscaping includes several non-native volunteer shrubs, including Canary Island date palm, Mexican avocado, tree of heaven, and silk tree. The project site is primarily surrounded by industrial and commercial land uses (refer to Figure 2.0-3). The project site is located approximately 0.3 mile west of the Norman Y. Mineta San Jose International Airport.

The project proposes to demolish existing industrial warehouse, manufacturing, and office facilities, as well as associated surface parking. In their place, the project applicant would construct two four-story, 206,500-gross square feet (gsf) data center buildings (a total of 413,000 gsf) and a paved surface parking lot that would become a new Vantage Data Center campus. The project would also include an approximately 36,200-sf Silicon Valley Power (SVP) substation along Mathew Street. The project would be constructed in four phases. Building A in the western portion of the project site would be developed during Phase 1 (southern portion of the building) and Phase 2 (northern portion of the building) (refer to Figures 3.0-1 and 3.0-2). The construction of the electrical substation would primarily occur during Phase 1. Building B in the eastern portion of the project site would be developed during Phase 3 (southern portion of the building) and Phase 4 (northern portion of the building) (refer to Figures 3.0-3 and 3.0-4). The first story of each building would include between approximately 44,100 and 44,300 sf of support facilities for electrical rooms, storage rooms, meeting rooms, break rooms, restrooms, the building lobby, and an outdoor chiller equipment space. Floor plans for the second, third, and fourth floors of Buildings A and B are depicted in Figures 3.0-5 and 3.0-6, respectively. The second floor of the proposed buildings would each include approximately 35,200 sf of space for two data rooms and approximately 18,900 sf for storage and office space. The third and fourth floors would each include approximately 50,200 sf of space for two data rooms and 3,900 sf of space for storage. Buildings A and B would each include one 15-megawatt (MW) data room and one 12-MW data room. The average projected peak load demand for the data halls is 22 MW for Phases 1 and 3, and 17 MW for Phases 2 and 4. The projected critical demand for the

entire project is 54 MW and the total projected demand is 76 MW. The height of Buildings A and B to the top of the metal screen would be approximately 107.5 feet above ground surface (refer to Figures 3.0-7, 3.0-8, and 3.0-9).

Vehicle ingress and egress would be provided by four new gated driveways along Mathew Street. The central entry would provide the main passenger vehicle and pedestrian access to the site, while the east and west entries would be intended for service vehicles related to loading and deliveries. Service vehicles would drive around the north portion of the project site and exit through the middle exit driveway. The landscaped central access drive would be flanked by Building A to the west and Building B to the east. There would be a 26-foot wide loop road around the project site for fire access and general circulation. Approximately 162 parking spots would be provided within the project site. In addition, ten Class I bicycle locker spaces and six Class II bicycle rack spaces would be provided on site.

The project site is designated as Heavy Industrial under the City of Santa Clara 2010-2035 General Plan (Santa Clara General Plan) and is zoned as MH (Heavy Industrial). The Heavy Industrial designation allows primary manufacturing, refining and similar activities. It also accommodates warehousing and distribution, as well as data centers. The maximum permitted floor area ratio (FAR) 0.45.

Determination

A Mitigated Negative Declaration (MND), City File No. PLN2016-12246 / CEQ 2016-01023, is proposed by the City of Santa Clara for the project. This Initial Study and supporting documents have been prepared to determine if the project would result in potentially significant or significant impacts to the environment (**Exhibit A, Initial Study**). The 23 mitigation measures that have been identified are listed in **Table 1** below. The supporting technical reports that constitute the record of proceedings upon which a determination is made are available for public review at the City of Santa Clara Planning Division at 1500 Warburton Avenue, Santa Clara, CA 95050, between 8:00 am and 5:00 pm, Monday through Friday.

TABLE 1
Summary of Mitigation Measures

Environmental Factor	Mitigation Measure	Level of Environmental Impact
Air Quality	**MM AIR-1.1:** *Implement BAAQMD Basic Construction Mitigation Measures to Reduce Construction-Related Emissions.* The project applicant shall require all construction contractors to implement the basic construction mitigation measures recommended by BAAQMD, which would reduce fugitive dust emissions to a less-than-significant level. Emission reduction measures shall include, at a minimum, the following measures. Additional measures may be identified by BAAQMD or contractor as appropriate. • All exposed surfaces (e.g., parking areas, staging areas, soil piles, graded areas, and unpaved access roads) shall be watered two times per day. • All haul trucks transporting soil, sand, or other loose material offsite shall be covered. • All visible mud or dirt track-out onto adjacent public roads shall be removed using wet power vacuum street sweepers at least once per day. The use of dry power sweeping is prohibited.	Less Than Significant Impact with Mitigation

TABLE 1 Summary of Mitigation Measures		
Environmental Factor	**Mitigation Measure**	**Level of Environmental Impact**
	• All vehicle speeds on unpaved surfaces shall be limited to 15 mph. • All roadways, driveways, and sidewalks to be paved shall be completed as soon as possible. Building pads shall be laid as soon as possible after grading unless seeding or soil binders are used. • Idling times shall be minimized either by shutting equipment off when not in use or reducing the maximum idling time to 5 minutes (as required by the California airborne toxics control measure Title 13, Section 2485 of California Code of Regulations [CCR]). Clear signage shall be provided for construction workers at all access points. • All construction equipment shall be maintained and properly tuned in accordance with manufacturer‘s specifications. All equipment shall be checked by a certified visible emissions evaluator. • A publicly visible sign shall be posted with the telephone number and name of the person to contact at the lead agency regarding dust complaints. This person shall respond and take corrective action within 48 hours. BAAQMD’s phone number shall also be visible to ensure compliance with applicable regulations.	
Biological Resources	**MM BIO-1.1:** The following measures shall be implemented prior to and during ground disturbance and preliminary grading activities at the project site. • Avoidance of Nesting Bird Season. To the extent feasible, construction shall be scheduled outside the avian nesting season to avoid impacts on nesting birds (including raptors) protected under the MBTA and CFGC. The nesting season for birds in Santa Clara County generally extends from January 1 through September 1. • Pre-construction/Pre-disturbance Surveys for Nesting Birds. If construction activities cannot be scheduled outside of the nesting season noted above, pre-construction surveys for nesting birds shall be completed by a qualified biologist to identify any active nests that could be disturbed during project implementation. Surveys shall be completed no more than 7 days prior to the initiation of ground disturbance and preliminary grading. During this survey, the biologist shall inspect the volunteer shrubs along the eastern perimeter of the project site. If an active nest is found sufficiently close to work areas to be disturbed by these activities, the biologist shall determine the extent of a disturbance-free buffer zone to be established around the nest (typically 250 feet for raptors and 50 to 100 feet for other species), to ensure that no nests of species protected by the MBTA and CFGC will be disturbed during project construction. • A report indicating the result of the survey and any designated buffer zones shall be submitted to the satisfaction of the Director of Community Development prior to the start of ground disturbance, grading, and/or tree removal activities.	Less Than Significant Impact with Mitigation

TABLE 1 Summary of Mitigation Measures		
Environmental Factor	**Mitigation Measure**	**Level of Environmental Impact**
Cultural Resources	**MM CR-1.1:** A qualified archaeologist shall be on site to monitor grading of native soil once all pavement is removed from the project site. The project applicant shall submit the name and qualifications of the selected archeologist to the Director of Community Development prior to the issuance of a grading permit. After monitoring the grading phase, the archaeologist shall make recommendations for further monitoring if it is determined that the site has cultural resources. Recommendations for further monitoring shall be implemented during any remaining ground-disturbing activities. If the archaeologist determines that no resources are likely to be found on site, no additional monitoring shall be required. A letter report summarizing the results of the initial monitoring during site grading and any recommendations for further monitoring shall be provided to the Director of Community Development prior to onset of building construction. **MM CR-1.2:** In the event that prehistoric or historic resources are encountered during on-site construction activities, all activity within a 50-foot radius of the find shall be stopped, the Director of Community Development shall be notified, and a qualified archaeologist or paleontologist shall examine the find and make appropriate recommendations. Recommendations could include collection, recordation, and analysis of any significant cultural materials. A report of findings documenting any data recovery during monitoring shall then be submitted to the Director of Community Development. **MM CR-1.3:** In the event that human remains are discovered during on-site construction activities, all activity within a 50-foot radius of the find shall be stopped. The Santa Clara County Coroner shall be notified and shall make a determination as to whether the remains are of Native American origin or whether an investigation into the cause of death is required. If the remains are determined to be Native American, the Coroner shall notify the Native American Heritage Commission (NAHC) immediately. Once NAHC identifies the most likely descendants, the descendants shall make recommendations regarding proper burial, which shall be implemented in accordance with Section 15064.5(e) of the CEQA Guidelines. **MM CR-2.1:** 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 recovery of fossil remains in a timely manner. Fossil remains collected during the monitoring and salvage portion of the mitigation program shall be	Less Than Significant Impact with Mitigation

TABLE 1 Summary of Mitigation Measures		
Environmental Factor	**Mitigation Measure**	**Level of Environmental Impact**
	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 shall be prepared that outlines the results of the mitigation program. The City shall be responsible for ensuring that the paleontologist's recommendations regarding treatment and reporting are implemented.	
Geology and Soils	**MM GEO-1.1:** All excavation and grading work shall be scheduled in dry weather months, or the construction sites shall be weatherized to withstand or avoid erosion. **MM GEO-1.2:** Stockpile and excavated soils shall be covered with secured tarps or plastic sheeting. **MM GEO-1.3:** Vegetation in disturbed areas shall be replanted as quickly as possible.	Less Than Significant Impact with Mitigation
Hazards and Hazardous Materials	**MM HAZ-1.1:** In accordance with federal, state, and local regulations, ACM and ACCM must be removed by a licensed asbestos abatement contractor from the structures prior to renovation/demolition. **MM HAZ-1.2:** Disturbance to unidentified suspect ACMs not mentioned in this report should be avoided until a certified asbestos building inspector can survey and assess the disposition of such materials. **MM HAZ-1.3:** During demolition activities, all building materials containing LBP should be performed by a contractor who has the experience and expertise in LBP abatement, handling, and disposal. Construction work where an employee may be occupationally exposed to lead in any amount must comply with 29 CFR 1926.62 (8 CCR 1532.1 in California). Additionally, lead containing waste must be characterized and profiled for proper disposal according to applicable federal, State and local regulations.	Less Than Significant Impact with Mitigation
Hydrology and Water Quality	**MM HYDRO-1.1:** Prior to construction of the project, the City shall require the project applicant and/or contractors for the project to submit a Storm Water Pollution Prevention Plan (SWPPP) and a Notice of Intent (NOI) to the State of California Water Resource Quality Control Board to control the discharge of storm water pollutants including sediments associated with construction activities. Along with these documents, the project applicant may also be required to prepare an Erosion Control Plan. The Erosion Control Plan may include Best Management Practices (BMPs) as specified in the California Storm Water Best Management Practice Handbook (such as silt fences/straw waddles around the perimeter of the site, regular street cleaning, and inlet protection) for reducing impacts on the City's storm drainage system from construction activities. The SWPPP shall include control measures during the construction period for: • Soil stabilization practices, • Sediment control practices, • Sediment tracking control practices, • Wind erosion control practices, and • Non-storm water management and waste management and disposal control practices	Less Than Significant Impact with Mitigation

TABLE 1 Summary of Mitigation Measures		
Environmental Factor	**Mitigation Measure**	**Level of Environmental Impact**
	MM HYDRO-1.2: Prior to issuance of a grading permit, the project applicant and/or contractors shall be required to submit copies of the NOI and Erosion Control Plan (if required) to the Department of Public Works. The project applicant and/or contractors shall also be required to maintain a copy of the most current SWPPP on-site and provide a copy to any City representative or inspector on demand. **MM HYDRO-1.3:** The project shall comply with City of Santa Clara ordinances, including erosion- and dust-control during site preparation and grading, and maintaining adjacent streets free of dirt and mud during construction. **MM HYDRO-1.4:** The project shall comply with municipal NPDES permit issued to the City of Santa Clara. **MM HYDRO-2.1:** When the construction phase is complete, a Notice of Termination (NOT) for the General Permit for Construction shall be filed with the RWQCB and the City of Santa Clara. The NOT shall document that all elements of the SWPPP have been executed, construction materials and waste have been properly disposed of, and a post-construction stormwater management plan is in place as described in the SWPPP for the project site. **MM HYDRO-2.2:** All post-construction Treatment Control Measures (TCMs) shall be installed, operated, and maintained by qualified personnel. On-site inlets shall be cleaned out a minimum of once per year, prior to the wet season. **MM HYDRO-2.3:** The property owner/site manager shall keep a maintenance and inspection schedule and record to ensure the TCMs continue to operate effectively for the life of the project. Copies of the schedule and record must be provided to the City upon request and must be made available for inspection on-site at all times. **MM HYDRO-2.4:** During operation of the project, the project shall comply with the requirements outlined in the approved Water Quality Pump System Maintenance Plan prepared for the project.	
Noise	**MM NOI-1.1:** The project applicant shall prepare and implement measures to ensure that outdoor mechanical equipment does not generate noise levels in excess of the City's applicable noise standard for the applicable zoning category (i.e. 75 dBA noise standard at the nearest heavy industrial uses, 65 dBA at the nearest commercial land uses, and 55 dBA at the nearest residential land uses). All sound, noise, or vibration measurements shall be taken at the closest point to the noise or vibration source on the adjacent real property, or on any other property, affected by the noise or vibration. Measures included in this noise control plan that could help to accomplish this standard include, but are not limited to: • Installing sound enclosures or barriers around noise-generating mechanical equipment (including but not limited to emergency generators and pumps). The generators may need to be fully enclosed to meet the applicable noise standards. • Reducing the number of generators tested at once.	Less Than Significant Impact with Mitigation

TABLE 1 Summary of Mitigation Measures		
Environmental Factor	**Mitigation Measure**	**Level of Environmental Impact**
	• Utilizing mufflers to reduce noise from mechanical equipment, and • Utilizing quieter equipment (e.g. smaller, quieter generators) that meets this standard. Prior to the issuance of an occupancy permit, the project applicant shall prepare a report, identifying measures that shall be implemented to ensure that exterior noise levels from mechanical equipment comply with the City's noise standards, to the satisfaction of the Director of Community Development.	

Original Signed — February 10, 2017

Gloria Sciara, AICP, Development Review Officer — Date
City of Santa Clara

Exhibit A

Initial Study

McLaren Data Center Project

File No(s): PLN2016-12246 / CEQ 2016-01023

City of Santa Clara

February 2017

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Printed copies of this document contain the Appendices on CD on the back page.

SECTION 1.0 INTRODUCTION AND PURPOSE

This Initial Study (IS) of environmental impacts is being prepared to conform to the requirement of the California Environmental Quality Act (CEQA), the CEQA Guidelines (California Code of Regulations 15000 et. seq.), and the regulations and policies of the City of Santa Clara. The purpose of this document is to provide objective information regarding the environmental consequences of the proposed project to the decision makers who will be reviewing and considering the project. The City of Santa Clara is the Lead Agency for the project under CEQA.

This IS evaluates the potential environmental impacts that might reasonably be anticipated to result from the construction of two four-story, 206,500-gross square feet (gsf) data center buildings (a total of 413,000 gsf) and a paved surface parking lot that would become a new Vantage Data Center campus on an approximately 8.97-acre site. The project would also include an approximately 36,200-sf Silicon Valley Power (SVP) substation along Mathew Street.

All documents referenced in this IS are available for public review in the Department of Community and Development at Santa Clara City Hall, 1500 Warburton Avenue, during normal business hours.

SECTION 2.0 PROJECT INFORMATION

2.1 PROJECT TITLE

McLaren Data Center Project

2.2 PROJECT LOCATION

The project site is located at 651, 725, and 825 Mathew Street in Santa Clara (see Figures 2.0-1, 2.0-2, and 2.0-3). The site is bordered by Mathew Street to the south, the Southern Pacific Railroad to the east, and other commercial and industrial properties to the north and west. The project site is located approximately 0.3 mile west of the Norman Y. Mineta San Jose International Airport.

2.3 LEAD AGENCY CONTACT

City of Santa Clara
Yen Han Chen, Associate Planner
Community Development Department
1500 Warburton Avenue
Santa Clara, CA 95050
Phone: (408) 615-2450

2.4 PROPERTY OWNER/PROJECT APPLICANT

Vantage Data Centers
Spencer Meyers
2805 Bowers Avenue
Santa Clara, CA 95051
Phone: (408) 473-3321

2.5 ASSESSOR'S PARCEL NUMBERS

The project site includes Assessor's Parcel Numbers (APNs) 224-40-011 (0.26 acre), 224-40-002 (4.36 acres), and 224-40-001 (4.35 acres).

2.6 ZONING DISTRICT AND GENERAL PLAN DESIGNATIONS

Zoning District: *MH-Heavy Industrial*

General Plan Designation: *Heavy Industrial*

2.7 PROJECT-RELATED APPROVALS, AGREEMENTS, AND PERMITS

A lot line adjustment is proposed as part of the project and the project would retain the lots. The project applicant is requesting a zoning administrator modification to allow for a height increase of up to 25 percent. In addition, the project will be subject to review by the City's Architectural Committee and will be subject to an Authority to Construct permit or Permit to Operate from the Bay Area Air Quality Management District.

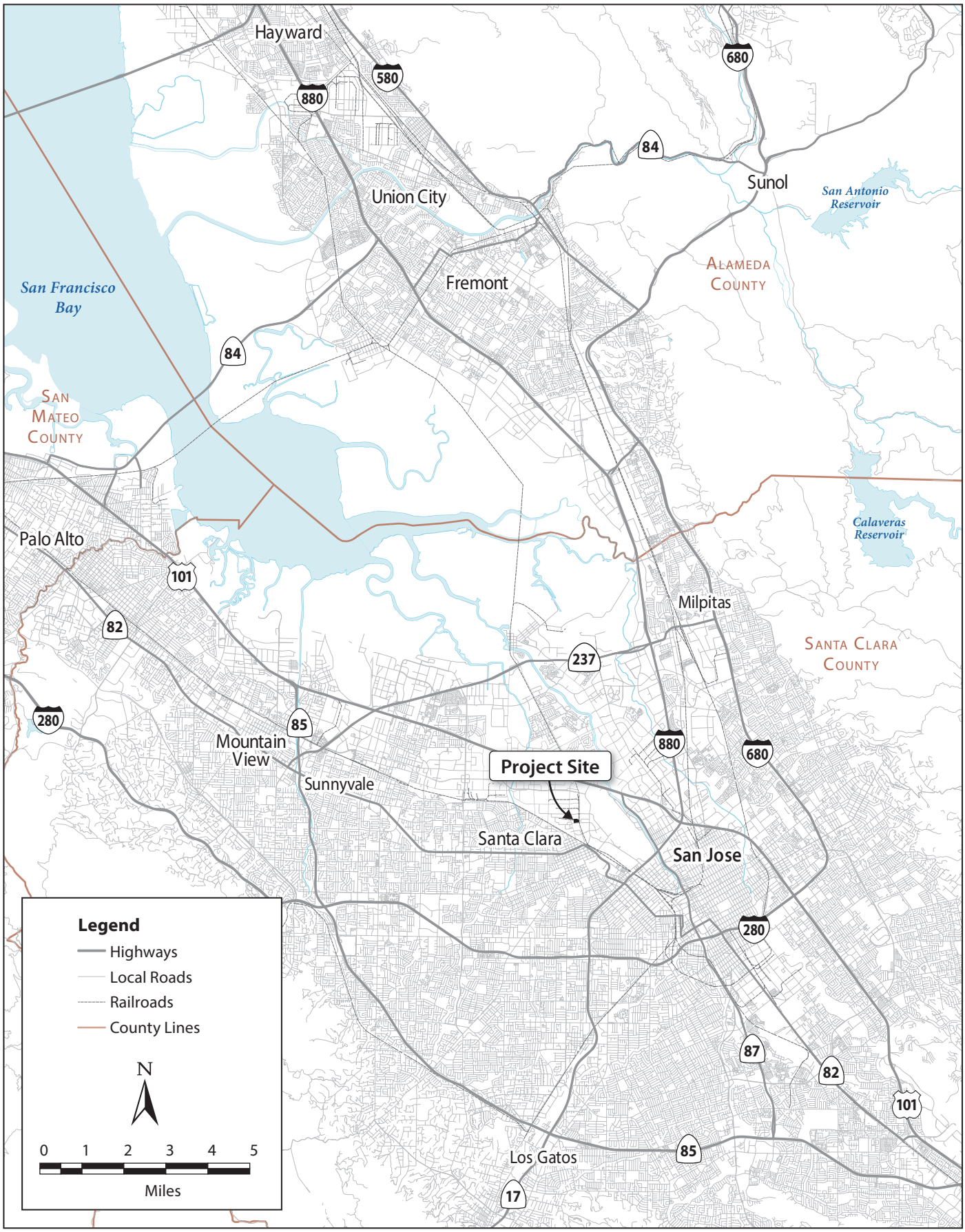

Figure 2.0-1
Regional Map

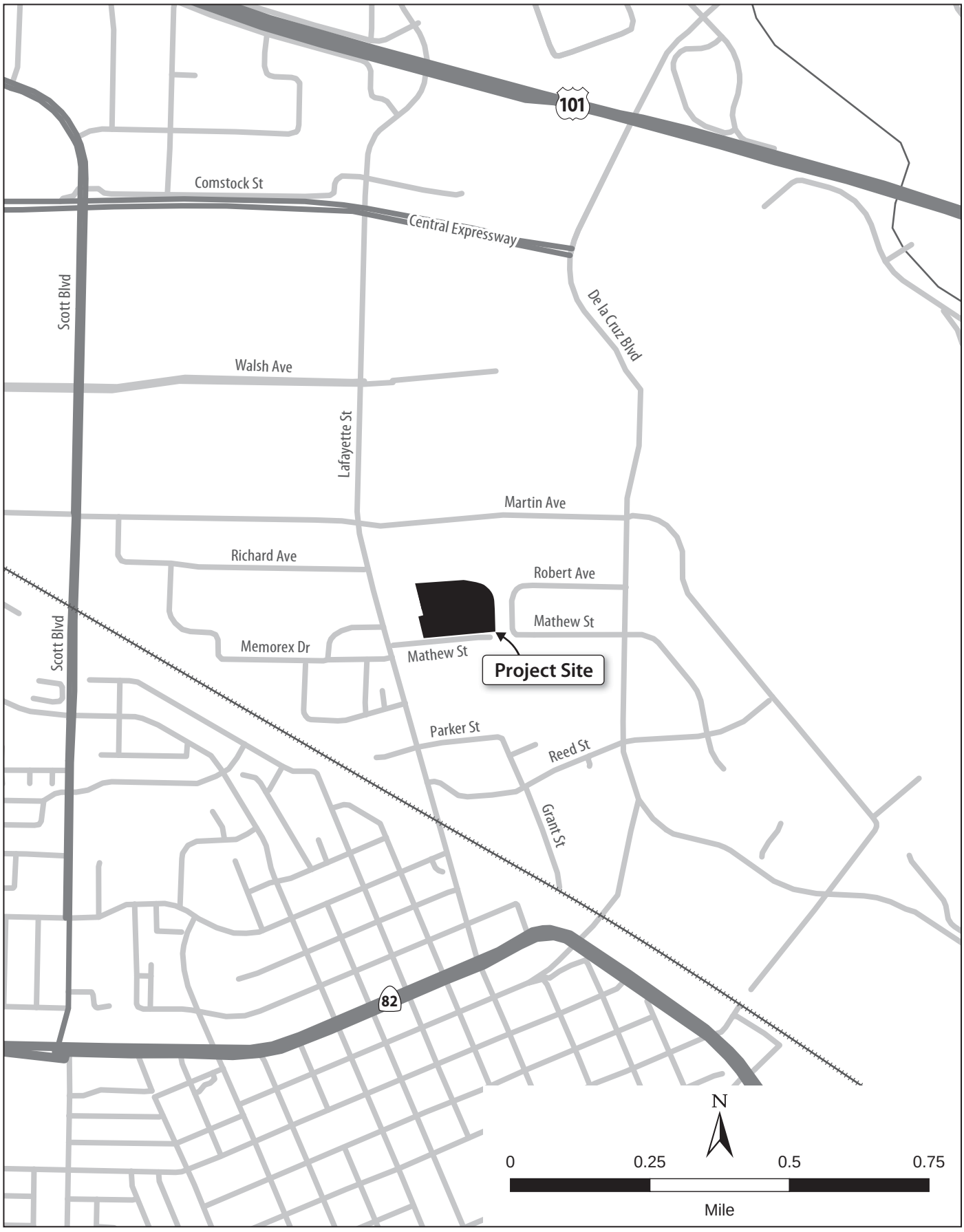

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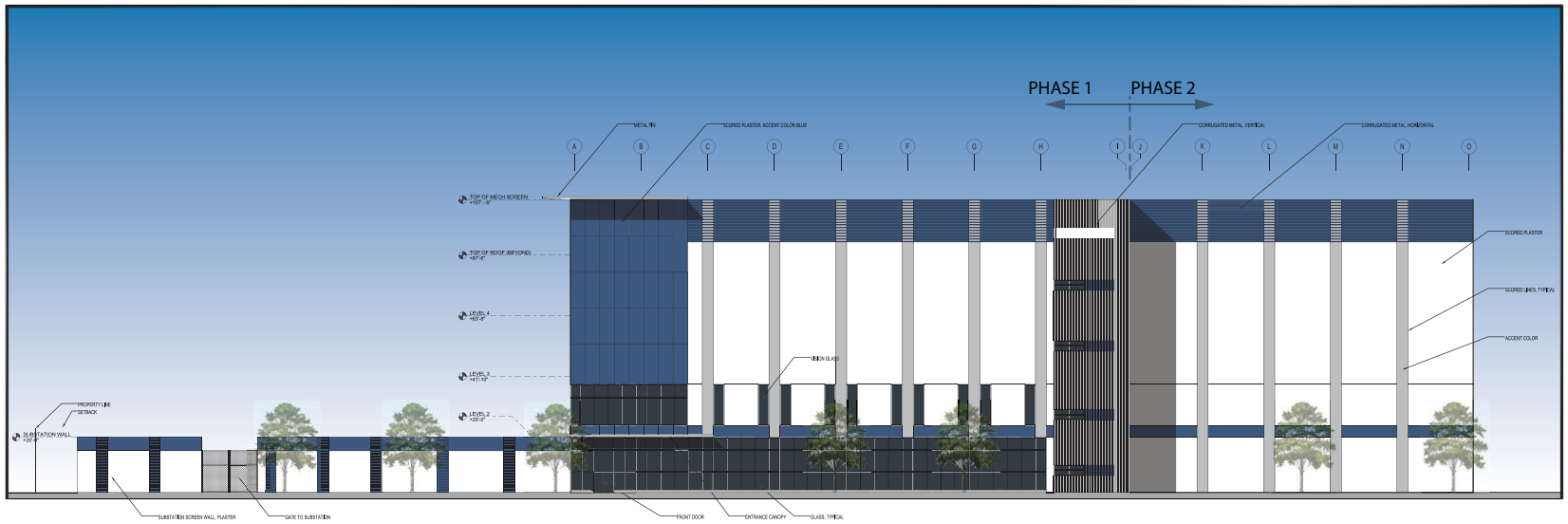
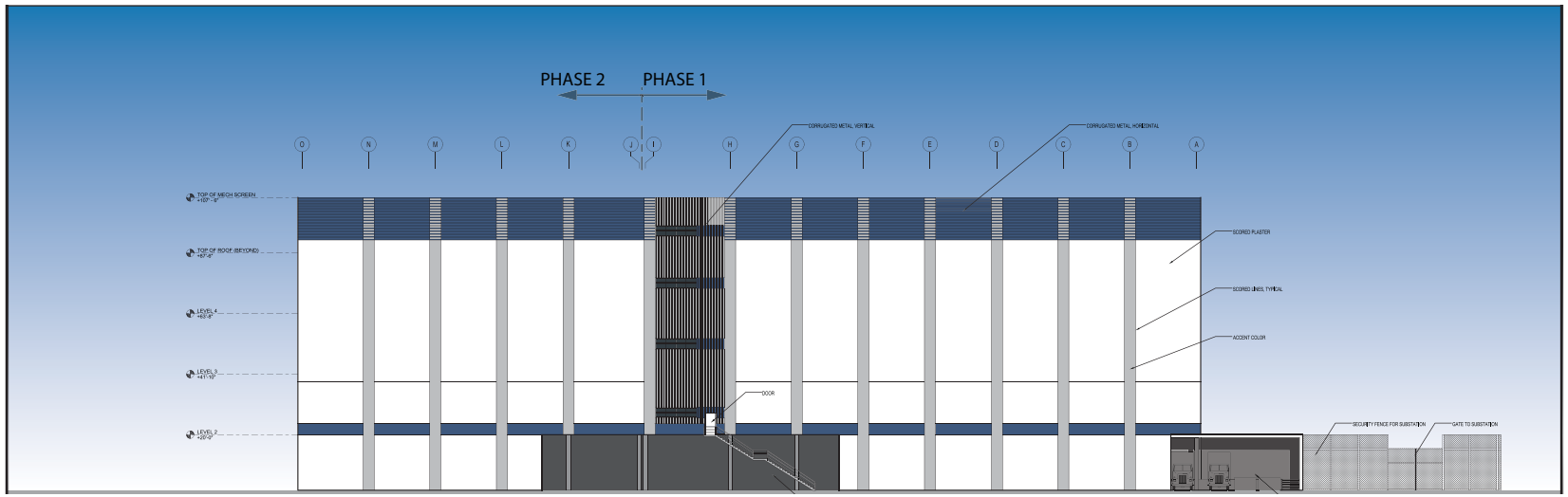
Figure 2.0-2
Vicinity Map



East Elevation



West Elevation

0 50 100

Feet

Source: CAC Architects, 2016.

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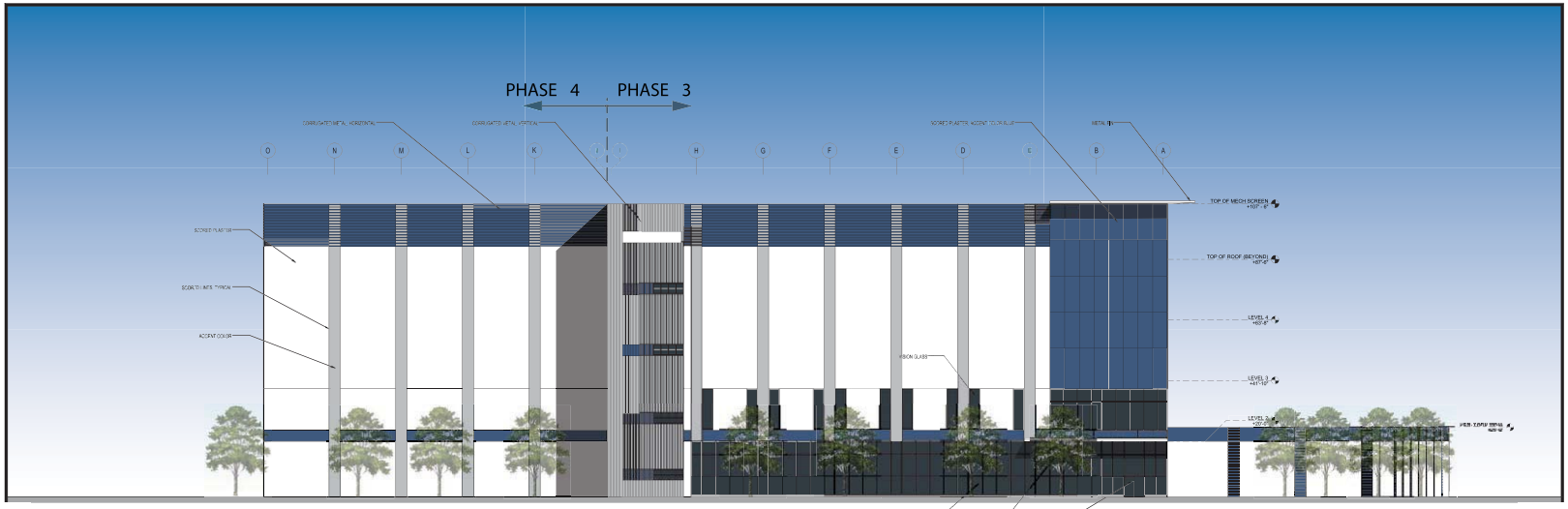
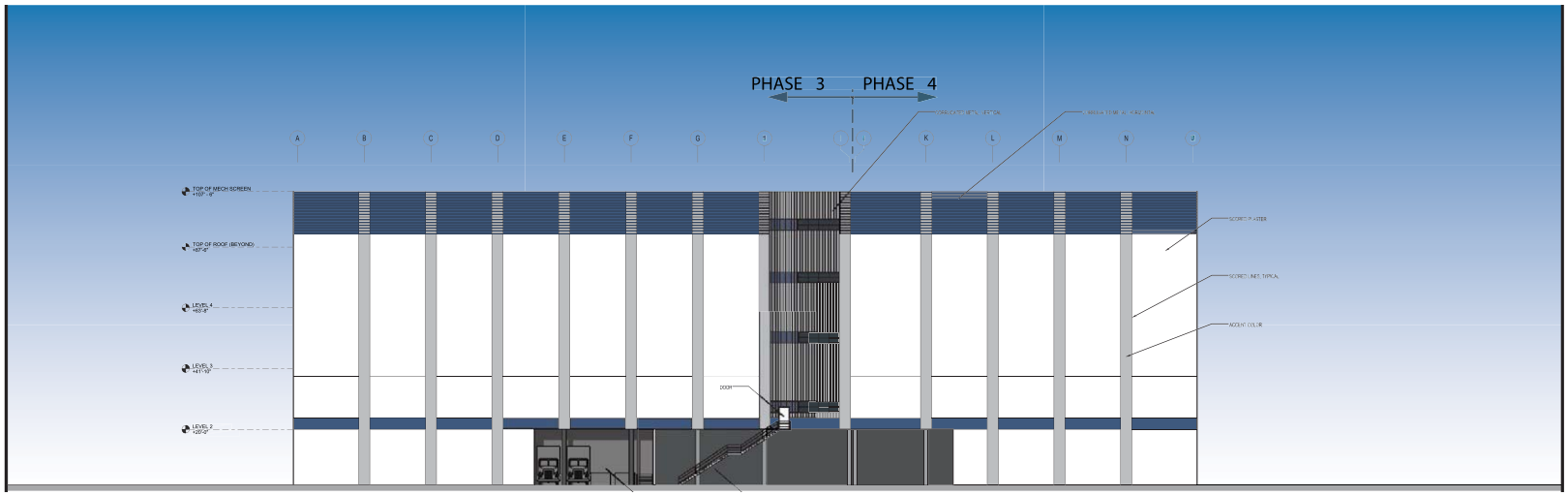
Figure 3.0-7
Building A East and West Elevations



West Elevation



East Elevation

0 50 100

Feet

Source: CAC Architects, 2016.

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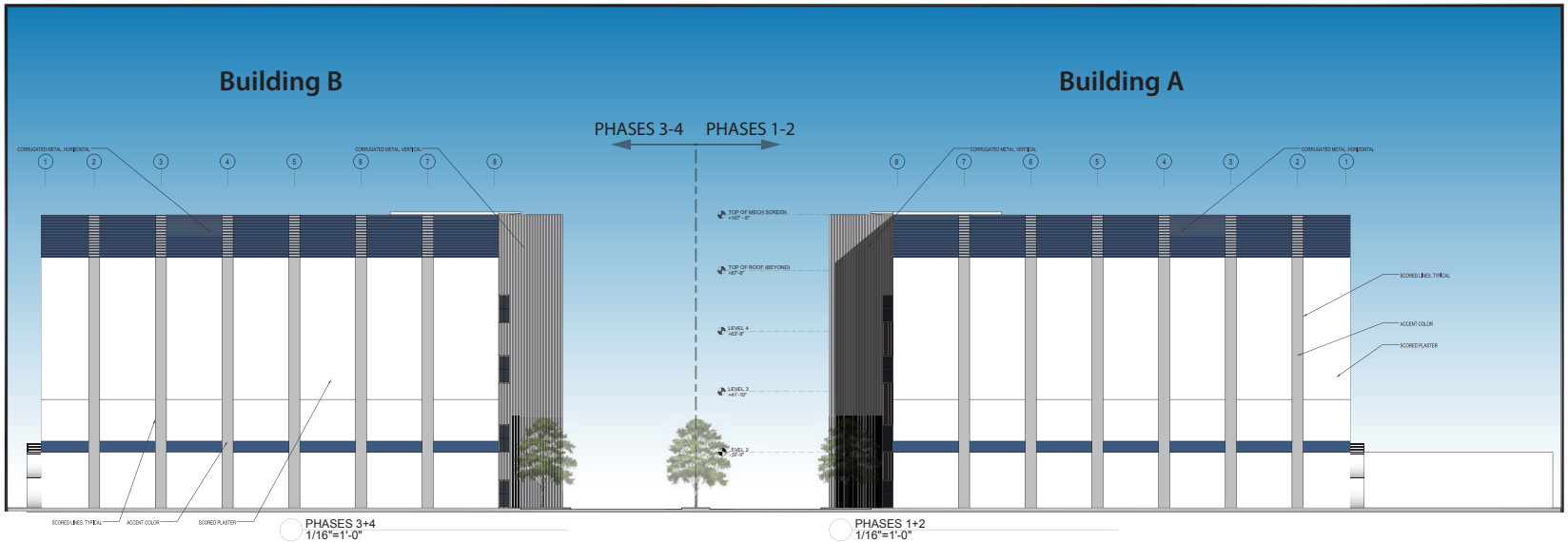
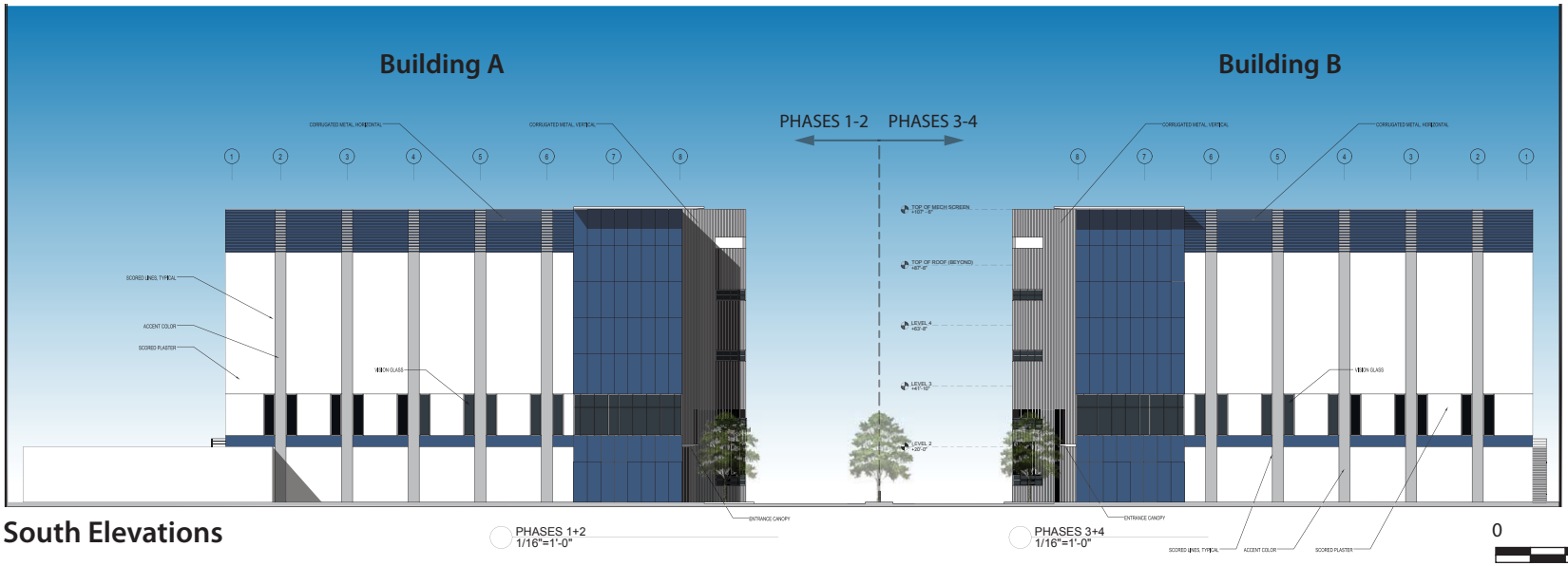
Figure 3.0-8
Building B West and East Elevations



North Elevations



South Elevations

Source: CAC Architects, 2016.

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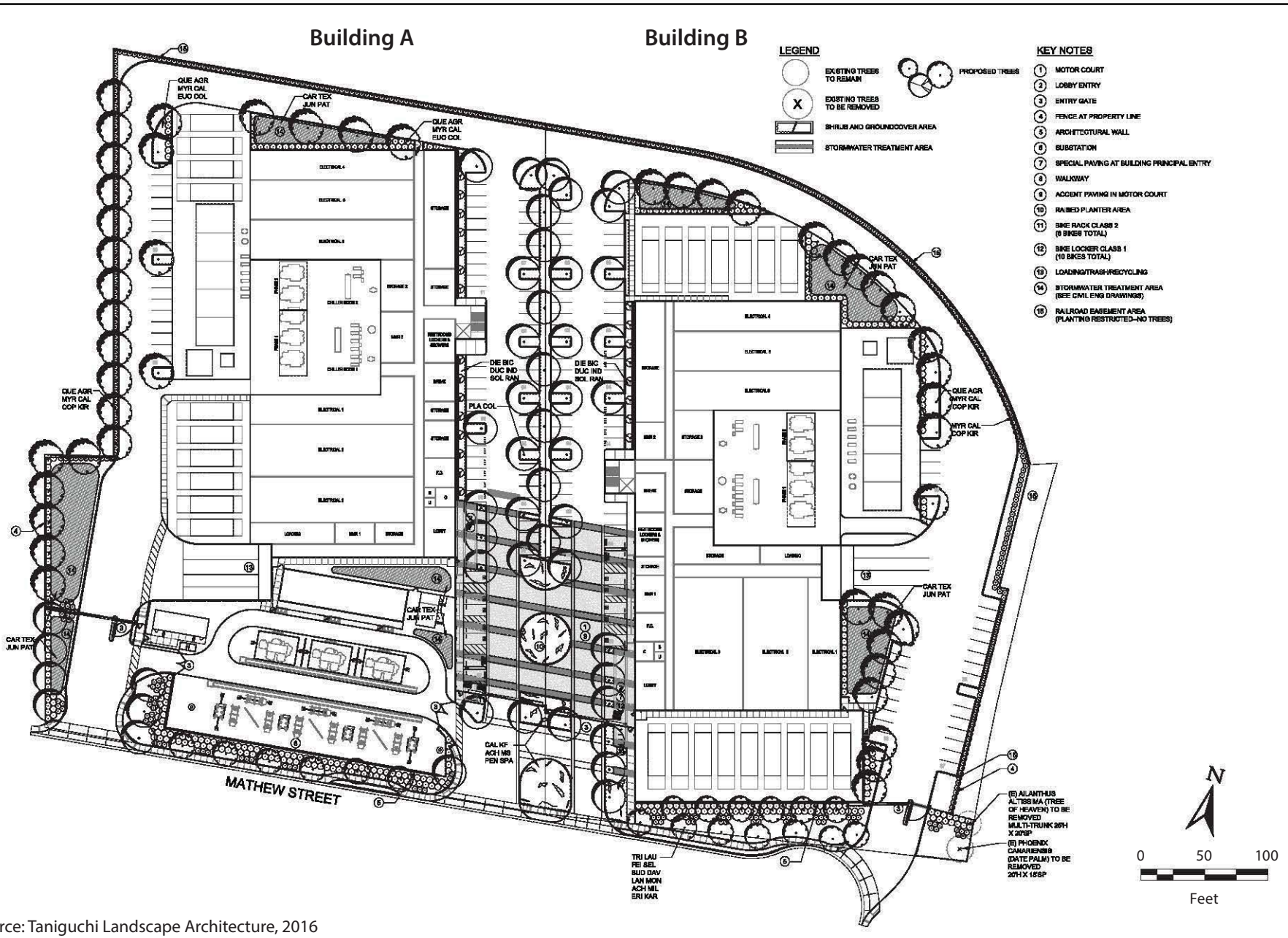
Figure 3.0-9
Buildings A and B North and South Elevations



Source: Taniguchi Landscape Architecture, 2016

Graphics ... 00552.16 (11/4/16) AB

Figure 3.0-10
Landscape Plan

SECTION 4.0 SETTING, ENVIRONMENTAL CHECKLIST AND IMPACTS

This section describes the existing environmental conditions on and near the project area, as well as environmental impacts associated with the proposed project. The environmental checklist, as recommended in the California Environmental Quality Act (CEQA) Guidelines, identifies environmental impacts that could occur if the proposed project is implemented.

Mitigation measures are identified for all significant project impacts. "Mitigation Measures" are measures that will minimize, avoid, or eliminate a significant impact (CEQA Guidelines §15370).

4.1 AESTHETICS

4.1.1 Setting

4.1.1.1 Project Site

The project site is developed with industrial warehouse, manufacturing, and office facilities, as well as associated surface parking. The westernmost portion of the project site is the 0.26-acre parcel located at 825 Mathew Street. This parcel is a small paved lot that provides 13 surface parking spaces for the adjacent parcel. The central portion of the project site is the 4.36-acre parcel located at 725 Mathew Street. This parcel includes approximately 107,600 sf of buildings consisting of 11 one- and two-story warehouses, offices, vacant space, and paved surface parking. The warehouses serve as storage for a fruit manufacturer, a furniture company; a heating, ventilation and air conditioning (HVAC) contractor; and automotive vehicle storage. In addition, a vacant tomato paste manufacturing facility and cannery with large overhead equipment is located on this parcel. The easternmost portion of the project site is the 4.35-acre parcel located at 651 Mathew Street. This parcel includes approximately 40,000 sf of buildings, consisting of nine one-story industrial warehouses that are used by Diana Fruit Company Inc. for fruit processing and storage and two office buildings used for administrative and quality assurance purposes. Above ground storage tanks and fermenting bins are distributed throughout this parcel.

The project site includes properties that were developed as canneries in the late 1940s. However, as discussed in further detail in Section 4.5, *Cultural Resources*, the structures within the project site are not considered historical resources under CEQA.

There are no trees and limited landscaping present on the project site.[8] The limited landscaping includes several non-native volunteer shrubs along the east side of the project site, including Canary Island date palm, Mexican avocado, tree of heaven, and silk tree.

Based on a site reconnaissance and historic assessment of on-site structures, there are no valued visual resources on the project site.

4.1.1.2 Surrounding Land Uses

The site is bordered by Mathew Street to the south, the Southern Pacific Railroad to the east, and other commercial and industrial properties to the north and west. The project site is primarily surrounded by industrial and commercial land uses. The buildings utilize a variety of building materials such as metal,

[8] Arborwell. 2016. *Tree Assessment for 651, 725-825 Mathew Street, Santa Clara, CA*. September 19. See Appendix A of this Initial Study.

glass, wood, concrete, and stone. The area surrounding the project site is characterized by low to mid-rise buildings that are set back from the roadway with physical barriers (fences and gates), large surface parking lots, landscaped areas, and trees along the street frontages. Overall, the visual character of the project site and surrounding area can be characterized as highly urbanized. Refer to Figure 4.1-3 for photographs showing existing off-site views.

4.1.1.3 Scenic Views and Resources

The project site and the surrounding area are relatively flat and, as a result, the site is only visible from the immediate vicinity, particularly along adjacent roadways including Mathew Street, Robert Avenue and Lafayette Street. No designated scenic vistas or view corridors are located within the City; however, the City of Santa Clara 2010-2035 General Plan Integrated Environmental Impact Report (Santa Clara General Plan EIR) lists the Santa Cruz Mountains, Diablo range, San Tomas Aquino Creek, and the Guadalupe River as "visual resources" within the City.[9] Views of the foothills to the east and west of the project site are obscured by buildings and landscape trees. Due to distance, topography, and intervening landscape trees, the project site cannot be seen in conjunction with San Tomas Aquino Creek (located 1.2 miles west of the project site) and the Guadalupe River (located 1.2 miles east of the project site). In addition, the site is not within a scenic viewshed or along a scenic highway designated by the California Department of Transportation (Caltrans) Scenic Highway Program.[10]

4.1.1.4 Light and Glare

Sources of light and glare are abundant in the urban environment of the area surrounding the project site, including, but not limited to, street lights, parking lot lights, security lights, vehicular headlights, internal building lights, and reflective building surface and windows.

4.1.2 Environmental Checklist and Discussion of Impacts

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the Project:				
1. Have a substantial adverse effect on a scenic vista?	☐	☐	☐	☒
2. Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	☐	☐	☐	☒
3. Substantially degrade the existing visual character or quality of the site and its surroundings?	☐	☐	☒	☐
4. Create a new source of substantial light or glare which will adversely affect day or nighttime views in the area?	☐	☐	☒	☐

[9] City of Santa Clara. 2011. *City of Santa Clara 2010-2035 General Plan Integrated Final Environmental Impact Report.* January. Available: http://santaclaraca.gov/home/showdocument?id=12900. Accessed: September 30, 2016.

[10] Caltrans. 2016. California Scenic Highway Program - Scenic Highway Routes. Available: http://www.dot.ca.gov/hq/LandArch/16_livability/scenic_highways/index.htm. Accessed: September 30, 2016.

4.1.2.1 Visual and Aesthetic Impacts

The project would demolish all of the existing on-site structures and associated surface parking, and construct two new four-story data center buildings with supporting parking and an electrical substation. As is customary for all new construction, the project site would be enclosed with temporary construction fencing and generally most of the on-site storage of soils, pipes, machinery, and building materials would not be visible. Further, aesthetic impacts during construction would be temporary and would cease upon completion of construction activities. Therefore, construction of the project would not substantially degrade the existing visual quality or character of the site or its surroundings. **(Less Than Significant Impact)**

There are no existing trees on the project site. Several non-native volunteer shrubs (including Canary Island date palm, Mexican avocado, tree of heaven, and silk tree) along the east side of the project site are proposed for removal as part of the project (refer to Figure 3.0-10). Approximately 120 new trees (including London Plane, Coast Live Oak, and Brisbane Box trees) would be planted around the perimeter of the project site and along the central access drive. In addition, shrubs and ground cover would be planted throughout the project site. Therefore, the project would not result in adverse aesthetic impacts related to tree or landscape removal, since landscape cover would be increased under the project. For a discussion of the potential biological resource impacts associated with the proposed shrub removals and new landscaping, refer to Section 4.4, *Biological Resources*.

The project would increase the height and density of development on-site. The height of the proposed buildings to the top of the metal screen would be approximately 107.5 feet above ground surface. The façades of the proposed buildings would consist primarily of plaster or other cementitious skin materials, metal, and glass. The design of the proposed buildings incorporates the use of varied surface materials and colors as well as accent elements including an exposed stair/elevator tower, vertical bands and corrugated metal panels. These architectural elements help create visual interest and reduce the perceived height and bulk of the structure by breaking up the building facade. In addition, Building B, which would be closer to Mathew Street than Building A, would be set back from the southern property line along Mathew Street by approximately 100 feet.

The proposed buildings would be one to two stories higher than the surrounding low to mid-rise structures. However, the façades of the proposed buildings would be visually similar to the surrounding uses, which are primarily heavy industrial and commercial. The project area is developed with buildings that feature a mix of architectural styles and no particular dominant design aesthetic. The proposed buildings and surface parking lot design would be compatible with the mixed visual character of the area. Overall, the project would be generally consistent with adjacent industrial and commercial development in terms of visual character and quality.

The buildings and site improvements would be subject to the City's design review process to ensure that the project would not adversely affect the visual quality of the area and would conform to current architectural and landscaping standards. The project will be subject to review by the City's Architectural Committee, which will ensure the project conforms to Santa Clara's adopted Community Design Guidelines. The guidelines were developed to support community aesthetic values, preserve neighborhood character, and promote a sense of community and place throughout the City. Therefore, the project would not substantially degrade the existing visual quality or character of the site or its surroundings. **(Less Than Significant Impact)**

As previously stated, the project site and the surrounding area are relatively flat and, as a result, the site is only visible from the immediate area. The project would not be visible within the viewsheds of any of the

visual resources in the City identified by the Santa Clara General Plan EIR due to existing development, vegetation, and distance. The site is not within a scenic viewshed or along a scenic highway designated by Caltrans. Additionally, according to the Santa Clara General Plan EIR, there are no scenic vistas within the City.[11] Therefore, implementation of the project would have no impact on scenic vistas or view corridors **(No Impact)**

Light and Glare

The project would include outdoor security and wayfinding lighting on the project site, along walkways, driveways, entrance areas, and within the surface parking areas. The outside lighting would be comparable in brightness to the ambient lighting in the surrounding area. Increased lighting on the project site, relative to existing outdoor lighting, would increase the overall level of illumination in the area. The design of exterior facades of the proposed buildings would be subject to the City's design review process prior to issuance of building permits to ensure the project would not create a substantial new source of light or glare for adjacent businesses or persons traveling on the nearby roadways. Typical design requirements include directional and/or shielded lights to minimize brightness and glare of the lights. In addition, the exterior surfaces of the proposed buildings would utilize low-glare glazing and would not be a significant source of glare during daytime hours. The project would not include illuminated signage. **(Less Than Significant Impact)**

4.1.3 Conclusion

The project would result in a less-than-significant impact on aesthetics. **(Less Than Significant Impact)**

[11] City of Santa Clara. 2011. *City of Santa Clara 2010-2035 General Plan Integrated Final Environmental Impact Report.* January. Available: http://santaclaraca.gov/home/showdocument?id=12900. Accessed: October 6, 2016.



View A: View of the surface parking spaces looking south at 825 Mathew Street.



View B: View of the vacant tomato paste manufacturing facility and cannery at 725 Mathew Street looking north.

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Figure 4.1-1
Existing On-Site Views
(825 Mathew Street and 725 Mathew Street)



View A: View of the Diana Fruit Company Inc. office building looking north.



View B: View of the Diana Fruit Company Inc. processing facility looking east.

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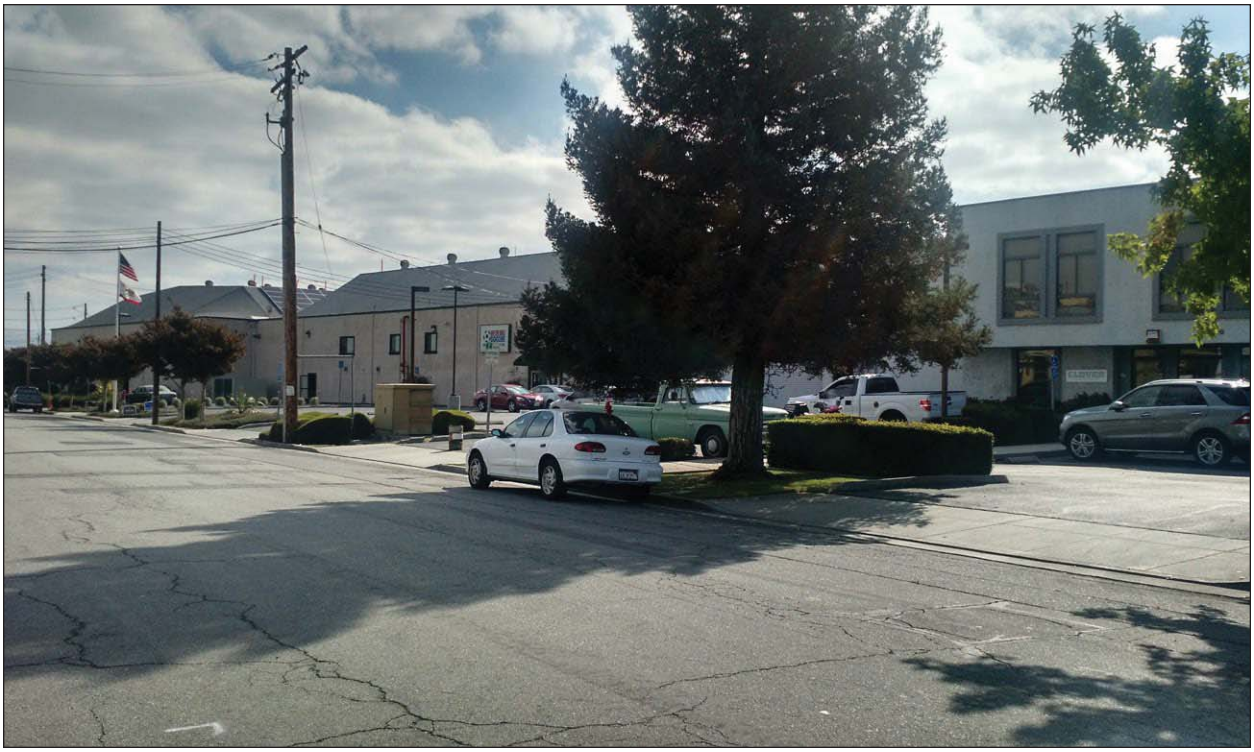
Figure 4.1-2
Existing On-Site Views
(651 Mathew Street)



View A: View of the north side of Mathew street looking west from 825 Mathew Street.



View B: View of the south side of Mathew Street looking east from 825 Mathew Street.

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Figure 4.1-3
Existing Off-Site Views

4.2 AGRICULTURAL AND FOREST RESOURCES

4.2.1 Setting

The project site is located in an existing developed, urban area of the City and is not used for agricultural purposes. The project site is designated as "Urban and Built-up Land" on the *Santa Clara County Important Farmland 2012 map*, which is defined as residential land with a density of at least six dwelling units per 10 acres, as well as land used for industrial and commercial purposes, golf courses, landfills, airports, sewage treatment, and water-control structures.[12]

The project site is not designated by the California Natural Resources Agency as farmland of any type and is not the subject of a Williamson Act (a statewide agricultural land protection program) contract.[13] Furthermore, no land adjacent to or in the vicinity of the project site is designated or used as farmland.

According to California Public Resources Code Section 12220(g), "Forest Land" is land that can support 10-percent native tree cover of any species, including hardwoods, under natural conditions, and that allows for management of one or more forest resources, including timber, aesthetics, fish and wildlife, biodiversity, water quality, recreation, and other public benefits. Based on the California Public Resources Code Section 4526, "Timberland" means land, other than land owned by the federal government and land designated by the State Board of Forestry and Fire Protection, as experimental forest land, which is available for, and capable of, growing a crop of trees of any commercial species used to produce lumber and other forest products, including Christmas trees. The project site is not considered Forest Land or Timberland. In addition, the project site is not a forest resource, nor are there forest resources in the surrounding areas.[14]

4.2.2 Environmental Checklist and Discussion of Impacts

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the Project:				
1. Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	☐	☐	☐	☒
2. Conflict with existing zoning for agricultural use, or a Williamson Act contract?	☐	☐	☐	☒
3. Conflict with existing zoning for, or cause rezoning of, forest land (as defined in	☐	☐	☐	☒

[12] California Department of Conservation. 2014. *Santa Clara County Important Farmland 2012.* August. Available: ftp://ftp.consrv.ca.gov/pub/dlrp/FMMP/pdf/2012/scl12.pdf. Accessed: September 27, 2016.

[13] County of Santa Clara. 2016. Williamson Act Properties. Last edited on March 16. Available: https://www.arcgis.com/home/webmap/viewer.html?webmap=328429a3701a444485f31982cbdd9c71&extent=-122.5019,36.6904,-120.9103,37.6838. Accessed: September 27, 2016.

[14] City of Santa Clara. 2014. *General Plan Land Use Diagram Phase II: 2015-2023 and General Plan Land Use Diagram Phase III: 2023-2035*. Updated December 9. Available: http://santaclaraca.gov/home/showdocument?id=4499. Accessed: September 27, 2016.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the Project:				
Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?				
4. Result in a loss of forest land or conversion of forest land to non-forest use?	☐	☐	☐	☒
5. Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?	☐	☐	☐	☒

4.2.2.1 Agricultural and Forest Resources Impacts

The project site is not used or zoned for agricultural purposes or for forest land. The project site is not designated by the Department of Conservation as farmland of any type and is not the subject of a Williamson Act contract. None of the properties adjacent to the project site or in the project vicinity are used for agriculture or forestry. As a result, implementation of the project would not affect agricultural or forest resources or result in the loss of designated agricultural land. **(No Impact)**

4.2.3 Conclusion

The project would have no impact on agricultural or forest lands or agricultural activities. **(No Impact)**

4.3 AIR QUALITY

Unless otherwise noted, the following discussion of potential impacts related to air quality is based on the *Air Quality and Greenhouse Gas Technical Report* (AQTR) prepared for the project, which is included in Appendix B of this Initial Study.[15]

4.3.1 Setting

4.3.1.1 Climate and Topography

The City is located in the Santa Clara Valley within the San Francisco Bay Area Air Basin. The project area's proximity to both the Pacific Ocean and the San Francisco Bay has a moderating influence on the climate. This portion of the Santa Clara Valley is bounded to the north by the San Francisco Bay and the Santa Cruz Mountains to the southwest and the Diablo Range to the east. The surrounding terrain greatly influences winds in the valley, resulting in a prevailing wind that follows along the valley's northwest-southwest axis.

[15] Ramboll Environ US Corporation. 2016. *Air Quality and Greenhouse Gas Technical Report, Vantage Data Centers, 651, 725, 825 Mathew Street, Santa Clara, California, 95050.* November.

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

4.3.1.2 Regional and Local Criteria Pollutants

Major criteria pollutants, listed in "criteria" documents by the U.S. Environmental Protection Agency (USEPA) and the California Air Resources Board (CARB) include ozone (O_3), carbon monoxide (CO), nitrogen dioxide (NO_2), sulfur dioxide, and suspended particulate matter (PM). These pollutants can have health effects such as respiratory impairment and heart/lung disease symptoms.

Violations of ambient air quality standards are based on air pollutant monitoring data and are judged for each air pollutant. The Bay Area as a whole does not meet state or federal ambient air quality standards for ground level ozone and fine particulate matter ($PM_{2.5}$) and state standards for respirable particulate matter (PM_{10}). The area is considered attainment or unclassified for all other pollutants.

4.3.1.3 Local Community Risks/Toxic Air Contaminants and Fine Particulate Matter

Besides criteria air pollutants, there is another group of substances found in ambient air referred to as Toxic Air Contaminants (TACs). These contaminants tend to be localized and are found in relatively low concentrations in ambient air. However, they can result in adverse chronic health effects if exposure to low concentrations occurs for long periods.

$PM_{2.5}$ is a complex mixture of substances that includes elements such as carbon and metals; compounds such as nitrates, organics, and sulfates; and complex mixtures such as diesel exhaust and wood smoke. Long-term and short-term exposure to $PM_{2.5}$ can cause a wide range of health effects. Common stationary source types of TACs and $PM_{2.5}$ include gasoline stations, dry cleaners, and diesel backup generators which are subject to permit requirements. The other, often more significant, common source is motor vehicles on freeways and roads.

4.3.1.4 Sensitive Receptors

The Bay Area Air Quality Management District (BAAQMD) defines sensitive receptors as facilities where sensitive receptor population groups (children, the elderly, the acutely ill and the chronically ill) are likely to be located. These land uses include residences, schools and school playgrounds, parks and playgrounds, child-care centers, retirement homes, convalescent homes, hospitals and medical clinics. For cancer risk assessments, children are the most sensitive receptors, since they are more susceptible to cancer causing TACs. The closest existing sensitive receptors are residential dwellings located approximately 400 feet west of the project site.

4.3.1.5 Applicable Plans, Policies, and Regulations

Federal, State, and Regional

Federal, state, and regional agencies regulate air quality in the Bay Area Air Basin, within which the project site is located. At the federal level, the USEPA is responsible for overseeing implementation of the Federal Clean Air Act and its subsequent amendments (CAA). CARB is the state agency that regulates mobile sources throughout the state and oversees implementation of the state air quality laws and regulations, including the California Clean Air Act. As required by the Federal Clean Air Act, National

Ambient Air Quality Standards (NAAQS) have been established for six major air pollutants: CO, NO_2, O_3, particulate matter, including PM_{10} and $PM_{2.5}$, sulfur oxides, and lead. The State of California has also established the California Ambient Air Quality Standards (CAAQS).

The City is within BAAQMD, which is the agency primarily responsible for assuring that the federal and state ambient air quality standards are maintained in the San Francisco Bay Area. The BAAQMD has permit authority over stationary sources, acts as the primary reviewing agency for environmental documents, and develops regulations that must be consistent with or more stringent than, federal and state air quality laws and regulations.

The BAAQMD prepared and adopted the Bay Area 2010 CAP. The 2010 CAP updates the most recent ozone plan, the 2005 Ozone Strategy. Unlike previous Bay Area CAPs, the 2010 CAP is a multi-pollutant air quality plan addressing four categories of air pollutants:

1. Ground-level ozone and the key ozone precursor pollutants (reactive organic gases and nitrogen oxide), as required by State law;
2. Particulate matter, primarily $PM_{2.5}$, as well as the precursors to secondary $PM_{2.5}$;
3. TAC; and
4. Greenhouse gases.

4.3.2 Environmental Checklist and Discussion of Impacts

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the Project:				
1. Conflict with or obstruct implementation of the applicable air quality plan?	☐	☐	☒	☐
2. Violate any air quality standard or contribute substantially to an existing or projected air quality violation?	☐	☒	☐	☐
3. Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is classified as non-attainment under an applicable federal or state ambient air quality standard including releasing emissions which exceed quantitative thresholds for ozone precursors?	☐	☒	☐	☐
4. Expose sensitive receptors to substantial pollutant concentrations?	☐	☐	☒	☐
5. Create objectionable odors affecting a substantial number of people?	☐	☐	☒	☐

4.3.2.1 Significance Thresholds

As discussed in CEQA Guidelines Section 15064(b), the determination of whether a project may have a significant effect on the environment calls for careful judgment on the part of the Lead Agency and must be based to the extent possible on scientific and factual data. The City and other Lead Agencies in the San Francisco Bay Area Air Basin often utilize the thresholds and methodology for assessing air emissions

and/or health effects adopted by BAAQMD based upon the scientific and other factual data prepared by BAAQMD in developing those thresholds.

In December 2010, the California Building Industry Association (BIA) filed a lawsuit in Alameda County Superior Court challenging TACs and $PM_{2.5}$ thresholds adopted by BAAQMD in its 2010 CEQA Air Quality Guidelines *(California Building Industry Association vs. Bay Area Air Quality Management District [CBIA v. BAAQMD]*, Alameda County Superior Court Case No. RG10548693). One of the identified concerns is inhibiting infill and smart growth in the urbanized Bay Area. On March 5, 2012, the Superior Court found that the adoption of thresholds by the BAAQMD in its CEQA Air Quality Guidelines is a CEQA project and BAAQMD is not to disseminate officially sanctioned air quality thresholds of significance until BAAQMD fully complies with CEQA. Although a lower court ruling put the adoption of the guidelines on hold, with a ruling that BAAQMD had to complete a CEQA analysis to adopt the guidelines, the lower court ruling was overturned by the appellate court who ruled that adoption of guidelines and thresholds is not considered a project subject to CEQA review and adoption of the significance thresholds was not arbitrary and capricious.

The Court of Appeal's decision was subsequently appealed to the California Supreme Court, which granted limited review to the issue of whether CEQA requires "an analysis of how existing environmental conditions will impact future residents or users (receptors) of a proposed project." This challenge relates to the applicability of TAC standards based on the effect of existing pollutant sources on new development. In light of the litigation regarding the 2010 CEQA Guidelines, BAAQMD is no longer recommending their use. In December 2015, the Supreme Court ruled in favor of the plaintiff, finding that "CEQA generally does not require an analysis of how existing environmental conditions will impact a project's future users or residents."[16]

BAAQMD at present has no recommendation to local lead agencies on the use of the 2011 guidelines. However, there is no court order constraining their use, and they are frequently employed by lead agencies when conducting CEQA reviews because the evidence in the BAAQMD 2011 guidelines still provides a substantial evidence-based approach to air quality impact analyses and BAAQMD-recommended significance thresholds.

Notwithstanding the CBIA lawsuit, which has no binding or preclusive effect on the City's discretion to decide on the appropriate thresholds to use for determining the significance of air quality impacts, the City has carefully considered the thresholds previously prepared by BAAQMD and regards the thresholds listed below to be based on the best information available for the San Francisco Bay Area Air Basin and conservative in terms of the assessment of health effects associated with TACs and PM2.5. The City has consistently applied these BAAQMD thresholds in its prior environmental documents. Evidence supporting these thresholds has been presented in the following documents:

1. BAAQMD. *Thresholds Options and Justification Report.* 2009.
2. BAAQMD. *CEQA Air Quality Guidelines.* May 2011. (Appendix D).

[16] The *CBIA v. BAAQMD* ruling provides several exceptions to the general rule regarding analysis of a project's impact on the environment: 1) if a project would exacerbate existing environmental hazards (e.g., expose hazardous waste that is currently buried), 2) if a project qualifies for certain specific exemptions (e.g., certain housing projects or transportation priority projects, per PRC 21159.21(f),(h); 21159.22(a),(b)(3); 21159.23(a)(2)(A); 21159.24(a)(1),(3); or 21155.1(a)(4),(6)), 3) if project occupants would be exposed to potential noise or safety impacts due to proximity to an airport (per PRC 21096), and 4) if the project is a school project that requires assessment of certain environmental hazards (per PRC 21151.8). None of these exceptions apply to the project.

3. California Air Pollution Control Officers Association (CAPCOA). *Health Risk Assessments for Proposed Land Use Projects*. 2009.
4. California Environmental Protection Agency, California Air Resources Board (CARB). *Air Quality and Land Use Handbook: A Community Health Perspective*. 2005.

Localized Carbon Monoxide Concentrations

Heavy traffic congestion can contribute to high levels of CO, and individuals exposed to such hot spots may have a greater likelihood of developing adverse health effects. BAAQMD has adopted screening criteria that provide a conservative indication of whether project-generated traffic would cause a potential CO hot spot. If the screening criteria are not met, a quantitative analysis through site-specific dispersion modeling of project-related CO concentrations would not be necessary, and the project would not cause localized violations of CO CAAQS. BAAQMD's CO screening criteria are summarized below.

1. The proposed project traffic would not increase traffic volumes at affected intersections to more than 44,000 vehicles per hour.
2. The proposed project traffic would not increase traffic volumes at affected intersections to more than 24,000 vehicles per hour where vertical and/or horizontal mixing is substantially limited (e.g., tunnel, parking garage, bridge underpass, natural or urban street canyon, below-grade roadway).
3. The proposed project is consistent with an applicable congestion management program established by the county congestion management agency for designated roads or highways, regional transportation plan, and local congestion management agency plans.

The following analysis is based upon the general methodologies in the most recent BAAQMD CEQA Air Quality Guidelines (dated May 2012) and numeric thresholds for the San Francisco Bay Basin, including the thresholds listed in Table 4.3-1

TABLE 4.3-1
BAAQMD THRESHOLDS OF SIGNIFICANCE

Pollutant	**Construction**	**Operation-Related**	
	Average Daily Emissions (pounds/day)	**Average Daily Emissions (pounds/day)**	**Maximum Annual Emissions (tons/year)**
ROG, NOx	54	54	10
PM10	82 (exhaust)	82	15
PM2.5	54 (exhaust)	54	10
Fugitive Dust (PM10/PM2.5)	BMPs	None	None
Risk and Hazards for New Sources and Receptors (Project)	Same as Operational Threshold	Increased cancer risk of >10.0 in one million Increased non-cancer risk of > 1.0 Hazard Index (chronic or acute) Ambient $PM_{2.5}$ increase: > 0.3 μ/m^3 [Zone of influence: 1,000-foot radius from property line of source or receptor]	
Risk and Hazards for New Sources and Receptors (Cumulative)	Same as Operational Threshold	Increased cancer risk of >100 in one million	Risk and Hazards for New Sources

TABLE 4.3-1 BAAQMD THRESHOLDS OF SIGNIFICANCE			
Pollutant	**Construction**	**Operation-Related**	
	Average Daily Emissions (pounds/day)	**Average Daily Emissions (pounds/day)**	**Maximum Annual Emissions (tons/year)**
		Increased non-cancer risk of > 10.0 Hazard Index (chronic or acute) Ambient $PM_{2.5}$ increase: > 0.8 μ/m^3 [Zone of influence: 1,000-foot radius from property line of source or receptor]	and Receptors (Cumulative)
Odors		Five confirmed complaints per year averaged over three years	Odors
Sources: BAAQMD Thresholds Options and Justification Report (2009) and BAAQMD CEQA *Air Quality Guidelines* (dated May 2011).			

4.3.3 Air Quality Impacts

4.3.3.1 Bay Area 2010 Clean Air Plan Consistency

The 2010 Clean Air Plan (CAP) is based on Association of Bay Area Governments' (ABAG) projections. Under BAAQMD's 2011 CEQA Guideline methodology, for consistency with the 2010 CAP, a project or plan must demonstrate that vehicle miles traveled (VMT) or vehicle trips may not exceed projected population increases and that the project or plan implements transportation control measures (TCMs) as applicable. This approach was revised in the 2012 BAAQMD CEQA Guidelines, which holds that a project would be considered consistent with the 2010 CAP if the project would not result in significant and unavoidable air quality impacts after the application of all feasible mitigation. The project's 29 employees would not induce trips or VMT in excess of projected population growth, induce substantial population growth in the City, or substantially alter the City's jobs/housing ratio. While the 2010 CAP does not impose a specific TDM requirement on developments with a Heavy Industrial land use designation, the project would include the following elements, or alternative equivalents, in a TDM Program to promote the reduction of VMT and resulting greenhouse gas emissions:

- Pre-tax deductions for employee transit costs;
- Flexible work schedules and opportunities to telecommute;
- Bicycle parking and storage facilities;
- Showers for employees walking, biking, or taking alternative modes of transportation to work;
- Video conferencing software;
- Four electric vehicle charging stations that would serve nine electric vehicle parking spots;
- Preferred carpool/vanpool and electric vehicle parking; and
- On-site food and beverage amenities to reduce off-site traffic trips.

The project would not result in substantial growth that would be inconsistent with ABAG projections, nor would it result in emissions in excess of BAAQMD thresholds identified in Table 4.3-1 (refer to Tables

4.3-2 and 4.3-4). Thus, the project would not conflict with the 2010 CAP. **(Less Than Significant Impact)**

4.3.3.2 Construction Impacts of the Project

Construction Emissions

Project construction has the potential to create air quality impacts through the use of heavy-duty construction equipment, construction worker vehicle trips, and truck hauling trips. In addition, fugitive dust emissions would result from removal of the existing structure and grading. Criteria pollutant emissions generated by these sources were quantified using the California Emissions Estimator Model (CalEEMod), version 2016.3.1, defaults as well as construction activity (i.e. number of construction equipment items, equipment horsepower, etc.) and scheduling activity (i.e. construction phase start and end dates) provided by the project applicant. The data used in the construction analysis are provided in the AQTR. Construction is expected to occur in four phases from 2017 to 2022. A maximum of two phases would occur simultaneously. This analysis assumes that construction would occur five days a week.

Estimated construction emissions for the project are summarized in Table 4.3-2. Emissions associated with each phase are compared individually to BAAQMD thresholds.

TABLE 4.3-2
ESTIMATED DAILY CONSTRUCTION CRITERIA POLLUTANT EMISSIONS FROM THE PROJECT (POUNDS PER DAY)

Construction Phase	ROG	NO_X	PM_{10} Exhaust	$PM_{2.5}$ Exhaust
Phase 1	5.3	28	1.5	1.4
Phase 2	3.5	14	0.71	0.68
Phase 3	4.5	21	1	1
Phase 4	3	11	0.47	0.45
BAAQMD Threshold	54	54	82	54
Exceed Threshold?	No	No	No	No

Source: Ramboll Environ US Corporation. 2016. *Air Quality and Greenhouse Gas Technical Report, Vantage Data Centers, 651, 725, 825 Mathew Street, Santa Clara, California, 95050.* November.

As shown in Table 4.3-2, construction of the project would not generate reactive organic gases (ROG), nitrogen oxides (NO_X), or PM exhaust in excess of BAAQMD's numeric thresholds. The BAAQMD CEQA Guidelines consider dust impacts to be less than significant through the application of best management practices (BMPs), which the applicant would implement in accordance with standard construction practices. Dust impacts and associated dust BMPs are discussed below. Impacts for ROG, NO_x, and PM exhaust would be less than significant. **(Less Than Significant Impact)**

Community Risk Impacts

BAAQMD considers ultra-fine ($PM_{2.5}$) particle emissions to be the diesel particulate matter (DPM) of greatest health concern. The BAAQMD has determined that construction activities occurring at distances within 1,000 feet of a sensitive receptor may pose a health risk. Since the nearest residential receptor is approximately 400 feet west of the project site, DPM concentrations at nearby residential and recreational locations were modeled using the USEPA's AERMOD (Version 15181) model. Long-term health impacts (cancer risk, chronic hazard index [HI], and $PM_{2.5}$ concentration) and acute hazards were evaluated

consistent with guidance in BAAQMD's CEQA guidelines and the 2015 California Environmental Protection Agency (Cal/EPA) Office of Environmental Health Hazard Assessment (OEHHA) Hot Spots Guidance.

Table 4.3-3 shows the excess lifetime cancer risk, chronic non-cancer HI, acute non-cancer HI, and annual $PM_{2.5}$ concentration at the Maximally Exposed Individual Sensitive Receptor (MEISR) during project construction. As shown in Table 4.3-3, construction of the project would not result in cancer or non-cancer health hazards in excess of BAAQMD thresholds. **(Less Than Significant Impact)**

TABLE 4.3-3
ESTIMATED CONSTRUCTION HEALTH IMPACTS AT THE MAXIMALLY EXPOSED INDIVIDUAL SENSITIVE RECEPTOR[A]

Location	Cancer Risk Impact (per one million)	Chronic Non-Cancer Hazard Index (unitless)	Acute Non-Cancer Hazard Index (unitless)	Annual $PM_{2.5}$ Concentration ($\mu g/m^3$)
Maximally Exposed Individual Sensitive Receptor	3.54	0.0021	0.20	0.012
BAAQMD Threshold	10	1.0	1.0	0.3
Exceed Threshold?	No	No	No	No

Source: Ramboll Environ US Corporation. 2016. *Air Quality and Greenhouse Gas Technical Report, Vantage Data Centers, 651, 725, 825 Mathew Street, Santa Clara, California, 95050*. November.

Notes:

[a] The AQTR and modeling output files are included in Appendix B of this Initial Study.

Dust Generation

BAAQMD considers fugitive dust emissions to be significant without BMPs. Consequently, dust emissions generated by project construction activities would be potentially significant.

Impact AQ-1: Dust emissions generated by project construction activities could result in a significant impact. **(Significant Impact)**

Mitigation Measures:

The following mitigation measure outlines BAAQMD-recommended BMPs to control fugitive dust.

MM AIR-1.1: *Implement BAAQMD Basic Construction Mitigation Measures to Reduce Construction-Related Emissions.* The project applicant shall require all construction contractors to implement the basic construction mitigation measures recommended by BAAQMD, which would reduce fugitive dust emissions to a less-than-significant level. Emission reduction measures shall include, at a minimum, the following measures. Additional measures may be identified by BAAQMD or contractor as appropriate.

- All exposed surfaces (e.g., parking areas, staging areas, soil piles, graded areas, and unpaved access roads) shall be watered two times per day.
- All haul trucks transporting soil, sand, or other loose material offsite shall be covered.

- All visible mud or dirt track-out onto adjacent public roads shall be removed using wet power vacuum street sweepers at least once per day. The use of dry power sweeping is prohibited.
- All vehicle speeds on unpaved surfaces shall be limited to 15 mph.
- All roadways, driveways, and sidewalks to be paved shall be completed as soon as possible. Building pads shall be laid as soon as possible after grading unless seeding or soil binders are used.
- Idling times shall be minimized either by shutting equipment off when not in use or reducing the maximum idling time to 5 minutes (as required by the California airborne toxics control measure Title 13, Section 2485 of California Code of Regulations [CCR]). Clear signage shall be provided for construction workers at all access points.
- All construction equipment shall be maintained and properly tuned in accordance with manufacturer's specifications. All equipment shall be checked by a certified visible emissions evaluator.
- A publicly visible sign shall be posted with the telephone number and name of the person to contact at the lead agency regarding dust complaints. This person shall respond and take corrective action within 48 hours. BAAQMD's phone number shall also be visible to ensure compliance with applicable regulations.

Implementation of the identified mitigation measure would control fugitive dust and reduce this impact to a less-than-significant level. **(Less Than Significant Impact with Mitigation)**

4.3.3.3 Operational Impacts to Regional and Local Air Quality

Operational Emissions

Operation of the project would generate emissions primarily associated with mobile, area, energy, and stationary sources. Each of these sources was taken into account in calculating the project's long-term operational emissions as described below.

Stationary Source Emissions

The project would include 32 emergency diesel generators to be used in the event of power grid failure. The generators would be tested routinely to ensure they would function during an emergency, and, during the routine testing, criteria pollutants would be emitted directly from the generators. Emissions from generator testing were quantified using information provided by the project applicant, which is summarized in the AQTR. It was assumed, based on information provided by the project applicant and generator reliability test records from similar data center sites, that testing would occur for no more than 50 hours per year, as stated in the Airborne Toxic Control Measure for Stationary Toxic Compression Ignition Engines (Section 93115, Title 17, CCR).

Daily emissions rates were averaged over the period of a year since the emergency generators could potentially be tested at any time of day or day of year. Per BAAQMD's Rule 2-2, new sources that emit more than 10 tons per year of NO_X must fully offset emissions to net zero. Stationary source emissions are shown in Table 4.3-4. As shown in Table 4.3-4, annual NO_X emissions from the emergency generators would total approximately 33 tons per year. Accordingly, the BAAQMD will provide offsets for stationary source NO_X emissions (i.e., the emergency generators) from the BAAQMD small facility bank.

Area, Energy, Mobile, and Stationary Source Emissions

The project would result in area and energy source emissions associated with normal facility operation and maintenance. Area sources include landscaping activities, consumer products (e.g., cleaning products), and periodic paint emissions from facility upkeep. Energy source emissions generated by the project would include natural gas combustion for space heating. Area and energy source emissions were calculated using CalEEMod, based on the size of the proposed building. It should be noted that CalEEMod does not calculate criteria pollutant emissions associated with electricity consumption, so energy source criteria pollutant emissions only include the emissions from natural gas combustion.[17]

The project would also result in daily, ongoing vehicle trips to and from the project site (i.e. trips from employees, visitors, and clients), which would result in mobile source criteria pollutant emissions. Emissions from mobile sources were also calculated using CalEEMod. Area, energy, mobile, and stationary source emissions are shown in Table 4.3-4.

TABLE 4.3-4
ESTIMATED OPERATION CRITERIA POLLUTANT EMISSIONS FROM THE PROJECT (POUNDS PER DAY)

Source	ROG	NO_X	PM_{10}	$PM_{2.5}$
Area Sources	10	<1	<1	<1
Energy Sources[a]	<1	2	<1	<1
Mobile Sources	1	3	2	1
Stationary Sources	2	-[b]	<1	<1
Daily Emissions	13	6	3	1
BAAQMD Threshold	54	54	82	82
Exceed Threshold?	No	No	No	No

Source: Ramboll Environ US Corporation. 2016. *Air Quality and Greenhouse Gas Technical Report, Vantage Data Centers, 651, 725, 825 Mathew Street, Santa Clara, California, 95050.* November.
Notes:
[a] Criteria pollutant emissions from energy sources are only calculated from natural gas use. CalEEMod does not calculate criteria pollutant emissions produced by electricity consumption.
[b] As required by BAAQMD Rule 2-2, the BAAQMD will provide offsets for stationary source NOx emissions (i.e., the emergency generators) from the BAAQMD small facility bank. Annual NO_X emissions from the emergency generators would be approximately 33 tons per year.

As shown in Table 4.3-4, operation of the project would not generate ROG, NO_X, or PM emissions in excess of BAAQMD's numeric thresholds. **(Less Than Significant Impact)**

Carbon Monoxide Emissions

Continuous engine exhaust may elevate localized CO concentrations, resulting in "hot spots." Receptors exposed to these CO hot spots may have a greater likelihood of developing adverse health effects. CO hot spots are typically observed at heavily congested intersections where a substantial number of gasoline-powered vehicles idle for prolonged durations throughout the day.

Vehicle trips associated with the project would occur as employees travel to and from the project site to commute to work. Approximately 29 employees, including fourteen operations personnel, thirteen

[17] CalEEMod does calculate greenhouse gas emissions from electricity consumption. Those emissions are discussed in Section 4.7, *Greenhouse Gas Emissions*.

security personnel, and two janitors, would be employed at the project site. Security and operations personnel would be employed in shifts, resulting in a maximum of 16 employees on-site on a single day. As discussed in Section 4.16, *Transportation*, the project would generate a maximum of 410 total daily trips, including vendors, clients, visitors, and employee trips. Given the magnitude of the BAAQMD screening criteria for CO hot spots (44,000 at affected intersections and 24,000 at affected intersections where mixing is limited), it is extremely unlikely that the addition of 410 trips on any roadway in the vicinity of the project site would result in an exceedance of the BAAQMD thresholds, even in the unlikely event of all 410 trips occurring during the peak hour period. As a result, the additional vehicle trips associated with the project would result in a negligible effect on CO concentrations in the vicinity of the project site. **(Less Than Significant Impact)**

Community Risk Impacts

Use of each of the proposed emergency generators would occur for up to 50 hours per year for periodic testing, consistent with CARB's Airborne Toxic Control Measure for Stationary Compression Ignition Engines and Section 330.3 of BAAQMD Regulation 9, Rule 8. Section 2.3.1 from BAAQMD's Permit Handbook indicates that "typically any stationary diesel engines over 50 horsepower will require a risk screening analysis." Explicitly, BAAQMD Regulation 2, Rule 5, Section 302 specifies that an Authority to Construct permit or Permit to Operate from the BAAQMD will be denied if any new and modified sources of TACs, including generators, in excess of 50 horsepower would result in health risks in excess of 10.0 in one million or a hazard index of 1.0. BAAQMD Regulation 2, Rule 5, Section 302 is cited as the evidence in support of BAAQMD's health risk thresholds in the 2011 BAAQMD CEQA Guidelines.

Cancer or non-cancer health hazards at the MESIR were estimated using the USEPA's AERMOD and guidance from BAAQMD and OEHHA to confirm health risks would not exceed BAAQMD's thresholds or permit limits. The results of the modeling are shown in Table 4.3-5.

TABLE 4.3-5
ESTIMATED OPERATIONAL HEALTH IMPACTS AT THE MAXIMALLY EXPOSED INDIVIDUAL SENSITIVE RECEPTOR

Location	Cancer Risk Impact (per one million)	Chronic Non-Cancer Hazard Index (unitless)	Acute Non-Cancer Hazard Index (unitless)	Annual $PM_{2.5}$ Concentration ($\mu g/m^3$)
Maximally Exposed Individual Sensitive Receptor	0.7	0.000079	0.67	0.007
BAAQMD Threshold	10	1.0	1.0	0.3
Exceed Threshold?	No	No	No	No

Source: Ramboll Environ US Corporation. 2016. *Air Quality and Greenhouse Gas Technical Report, Vantage Data Centers, 651, 725, 825 Mathew Street, Santa Clara, California, 95050.* November.

As shown in Table 4.3-5, operation of the project would not result in cancer or non-cancer health hazards in excess of BAAQMD thresholds. **(Less Than Significant Impact)**

Odors

Potential odor sources during construction activities include diesel exhaust from heavy-duty equipment, and the use of architectural coatings. Construction-related odors near existing receptors would be temporary in nature and dissipate as a function of distance. Potential odor sources from project operations

would include diesel exhaust from trash pick-up and the use of architectural coatings during routine maintenance. When compared to existing odor sources in the vicinity of the project site, which include heavy and light industrial uses, odor impacts from project operations would be similar. Accordingly, construction and operation of the project is not expected to result in odor impacts that would exceed BAAQMD's odor thresholds (see Table 4.3-1). **(Less Than Significant Impact)**

4.3.3.4 Concurrent Construction and Operational Impacts Regional Air Quality

Construction activities occur over six years (2017 to 2022) with four distinct phases. Operation of each phase would begin within the same year construction is completed, meaning construction for the following phase could occur simultaneously with operation of previously constructed phases, beginning in 2018. A conservative estimate of overlapping emissions from simultaneous construction and operational activities were summed and are presented on a year-by-year basis in Table 4.3-6.

TABLE 4.3-6
ESTIMATED CONSTRUCTION AND OPERATION CRITERIA POLLUTANT EMISSIONS FROM THE PROJECT (TONS PER YEAR)

Source		ROG	NOx	PM_{10}	$PM_{2.5}$
2017	Construction Phase 1	0.43	4.4	0.22	0.21
	2017 Total	**0.43**	**4.4**	**0.22**	**0.21**
2018	Construction Phase 1	1.1	3.4	0.19	0.18
	Construction Phase 2	0.125	1.11	0.053	0.050
	Operational - Phase 1	0.9	0.3	0.012	0.012
	2018 Total	**2.1**	**4.8**	**0.26**	**0.24**
2019	Construction Phase 2	0.71	2.2	0.117	0.113
	Construction Phase 3	0.048	0.48	0.023	0.021
	Operational - Phases 1 & 2	1.3	0.4	0.019	0.019
	2019 Total	**2.1**	**3.1**	**0.16**	**0.15**
2020	Construction Phase 3	0.78	4.0	0.20	0.19
	Operational - Phases 1 & 2	1.3	0.4	0.019	0.019
	2020 Total	**2.1**	**4.4**	**0.22**	**0.20**
2021	Construction Phase 3	0.46	1.4	0.069	0.065
	Construction Phase 4	0.14	1.17	0.051	0.048
	Operational - Phases 1, 2 & 3	1.9	0.6	0.031	0.030
	2021 Total	**2.5**	**3.2**	**0.15**	**0.14**
2022	Construction Phase 4	0.59	1.41	0.062	0.059
	Full Operational	2.4	1.05	0.12	0.12
	2022 Total	**3.0**	**2.5**	**0.18**	**0.18**
BAAQMD Threshold		10	10	15	10
Exceed Threshold?		No	No	No	No

Source: Ramboll Environ US Corporation. 2016. *Air Quality and Greenhouse Gas Technical Report, Vantage Data Centers, 651, 725, 825 Mathew Street, Santa Clara, California, 95050.* November.

As shown in Table 4.3-6, concurrent construction and operation of the project would not generate ROG, NO_X, or PM emissions in excess of BAAQMD's numeric thresholds. **(Less Than Significant Impact)**

4.3.3.5 Cumulative Impacts to Regional and Local Air Quality

Construction and Operational Emissions

The BAAQMD CEQA Guidelines establish numerical criteria for determining when an emissions increase is considered cumulatively considerable and thus triggers the need for a quantitative cumulative impacts assessment. In developing thresholds of significance for air pollutants, BAAQMD considered the emission levels for which a project's individual emissions would be cumulatively considerable. If a project does not exceed the identified significance thresholds, its emissions would not be cumulatively considerable, resulting in less-than-significant air quality impacts to the region's existing air quality conditions. Accordingly, since neither construction, operation, nor concurrent construction or operation of the project would result in ROG, NO_X, or PM emissions in excess of BAAQMD's numeric thresholds, implementation of the project would not result in a cumulative considerable impact on ROG, NO_X, or PM emissions (refer to Tables 4.3-2, 4.3-4, and 4.3-6). Implementation of the MM AIR-1 would control fugitive dust and reduce this impact to a less-than-significant level. **(Less Than Significant Impact with Mitigation)**

Community Risk Impacts

There are multiple sources of cumulative (existing sources and future planned) DPM emissions located within 1,000 feet of the proposed project. The BAAQMD has developed GoogleEarth files that identify health risks associated with permitted stationary sources, roads, and rail lines throughout the Santa Clara County. These files were used to identify ambient cancer and non-cancer health risks in the project area. Total cumulative health risks were calculated by adding the background health risks sources to the health risk and hazard impacts for the project. Table 4.3-7 summarizes the results of the analysis.

TABLE 4.3-7
ESTIMATED CUMULATIVE HEALTH IMPACTS AT THE MAXIMALLY EXPOSED INDIVIDUAL SENSITIVE RECEPTOR

Location	Cancer Risk Impact (per million)	Chronic Non-Cancer Hazard Index (unitless)	Acute Non-Cancer Hazard Index (unitless)	Annual $PM_{2.5}$ Concentration ($\mu g/m^3$)
Ambient Sources	19.4	0.08	0.00	29.6
Project Construction	3.54	0.0021	0.20	0.012
Project Operation (traffic and generators)	0.7	0	1	0.006
Total Cumulative	24	0.08	0.9	29.6
BAAQMD Threshold	100	10	10	0.8
Significant Impact?	No	No	No	No[a]

Source: Ramboll Environ US Corporation. 2016. *Air Quality and Greenhouse Gas Technical Report, Vantage Data Centers, 651, 725, 825 Mathew Street, Santa Clara, California, 95050.* November.
Notes:
[a] Exceedance of threshold is due to existing ambient sources located within the vicinity of the project area.

As shown in Table 4.3-7, total non-cancer $PM_{2.5}$ risks to sensitive receptors located near the project are above BAAQMD's cumulative health risk threshold. However, this exceedance is primarily the result of existing sources located within the vicinity of the project area. The proposed project's relative contribution to the exceedances of the screening thresholds is less than the BAAQMD's project-level

heath thresholds and is minor compared to health risks from existing sources. Accordingly, the project would not result in a cumulatively considerable contribution to health risks. **(Less Than Significant Impact)**

4.3.4 Conclusion

The project would result in less than significant air quality impacts from project operations and would not expose sensitive receptors to significant local community risk and hazards. With implementation of the proposed mitigation measure, the project would result in a less-than-significant impact related to dust emissions during project construction. Emissions of all other pollutants during construction would be less than significant, and no sensitive receptors would be exposed to significant health risks. **(Less Than Significant Impact with Mitigation)**

4.4 BIOLOGICAL RESOURCES

The following discussion of existing and proposed landscape trees on the project site is based on the *Tree Assessment* and *Schematic Landscape Plan* prepared for the project (refer to Figure 3.0-10).[18][19]

4.4.1 Setting

4.4.1.1 Existing Habitat

The project site is comprised of three parcels used for industrial warehouses, manufacturing, and office purposes as well as associated surface parking.

The closest open space to the project site is Larry J. Marsalli Park, which is 0.6 mile south of the project site. There are no wetlands or other sensitive habitats located on or adjacent to the project site.[20] The nearest waterways are the highly disturbed San Tomas Aquino Creek, approximately 1.2 miles west of the project site, and the Guadalupe River, approximately 1.2 miles east of the project site.

4.4.1.2 Special Status Species

Special status plant and wildlife species are not expected to occur on the highly urbanized project site. There are several non-native volunteer shrubs along the east side of Parcel 224-40-001 that may provide habitat and food sources for native migratory birds and raptors in the project site. Migratory birds and raptors are protected by the Federal Migratory Bird Treaty Act (MBTA) (16 U.S.C. Section 703, et seq.) and the California Fish and Game Code (CFGC) Section 3503, which reads, "It is unlawful to take, possess, or needlessly destroy the nest or eggs of any bird, except as otherwise provided by this code or any regulation made pursuant thereto."

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18 Arborwell. *Tree Assessment for 651, 725-825 Mathew Street, Santa Clara, CA*. September 19. See Appendix A of this Initial Study.

19 *Schematic Landscape Plan*, Planning Submittal for the McLaren Project, September 30, 2016.

20 City of Santa Clara. 2014. *City of Santa Clara 2010-2035 General Plan*. Updated December 9. Available: http://santaclaraca.gov/government/departments/community-development/planning-division/general-plan. Accessed: September 29, 2016.

4.4.1.3 Trees

There are no trees and limited landscaping present on the project site.[21] The limited landscaping includes several non-native volunteer shrubs along the east side of the project site, including Canary Island date palm, Mexican avocado, tree of heaven, and silk tree.

4.4.1.4 Applicable Plans, Policies, and Regulations

General Plan Policy and City Code

The provision of landscaping and trees in the community is addressed in both the Santa Clara General Plan and Santa Clara City Code. General Plan Policy 5.10.1-P4 indicates that it is the City's policy to protect all healthy cedars, redwoods, oaks, olives, bay laurel and pepper trees of any size, and all other healthy 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. General Plan Policy 5.3.1-P10 calls for new development to provide street trees and a minimum 2:1 on- or off –site replacement of removed trees to help increase the urban forest and minimize the heat island effect.

The Santa Clara General Plan also seeks to preserve the overall tree canopy and preserve recognized historically, architecturally, and/or culturally significant resources that relate to the heritage of the City. As such, the City has developed a Heritage Tree Inventory that identifies significant trees. General Plan Policy 5.10.1-P3 requires preservation of all City-designated heritage trees listed in the Heritage Tree Appendix 8.10 of the General Plan.

Furthermore, according to Santa Clara City Code Section 12.35.020, no tree, plant, or shrub planted or growing in the streets or public places of the City shall be altered or removed without obtaining a written permit from the Superintendent of Streets Department. No person without such authorization shall trench around or alongside of any such tree, plant, or shrub with the intent of cutting the roots thereof or otherwise damaging the same.[22]

Habitat Conservation Plan

The project site is not located within an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or any other approved local, regional, or state habitat conservation plan.

4.4.2 Environmental Checklist and Discussion of Impacts

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the Project:				
1. Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations,	☐	☐	☐	☒

[21] Arborwell. 2016. *Tree Assessment for 651, 725-825 Mathew Street, Santa Clara, CA.* September 19.

[22] City of Santa Clara. 2014. *City of Santa Clara 2010-2035 General Plan.* Updated December 9. Available: http://santaclaraca.gov/government/departments/community-development/planning-division/general-plan. Accessed: September 29, 2016.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the Project:				
or by the California Department of Fish and Wildlife or US Fish and Wildlife Service?				
2. Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by the California Department of Fish and Wildlife or US Fish and Wildlife Service?	☐	☐	☐	☒
3. Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	☐	☐	☐	☒
4. Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, impede the use of native wildlife nursery sites?	☐	☒	☐	☐
5. Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	☐	☐	☐	☒
6. Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?	☐	☐	☐	☒

4.4.2.1 Impacts on Habitats

Because of the development history in the project area, no natural or sensitive habitats are present on the project site. As a result, no substantial impacts on natural plant communities or habitats would occur as a result of the project. The nearest waterways, San Tomas Aquino Creek and Guadalupe River, both of which are highly disturbed and located more than one mile from the project site, would not be affected by project construction activities. **(No Impact)**

4.4.2.2 Impacts on Special Status and Protected Species

As previously discussed, special status plant and wildlife species are not expected to occur on the project site. However, while unlikely, migratory birds and raptors could use the non-native volunteer shrubs located along the east side of the project site for nesting. Potential construction impacts on nesting birds are discussed below.

Potential Construction Impacts on Nesting Raptors and Migratory Birds

Although trees are not present on the project site, there are several non-native volunteer shrubs along the east side of the project site that could provide potential suitable nesting habitat for numerous bird species that are protected by the MBTA and CFGC. Ground disturbance, demolition or modification of structures, and construction-generated noise and vibration could result in the direct or indirect mortality of nesting birds through crushing, parental abandonment of young, reduced fitness, reduction in number of available prey, and degradation or loss of habitat. The destruction of a nest or egg of any bird, fatality of a bird, or nest abandonment would constitute a significant impact.

Impact BIO-1: Although unlikely at this location, construction during the nesting season could impact protected raptors and/or migratory birds. Loss of fertile eggs or individual nesting birds, or nest abandonment, would constitute a significant impact. **(Significant Impact)**

Mitigation Measures:

The following mitigation measure will avoid possible impacts on nesting birds during construction.

MM BIO-1.1: The following measures shall be implemented prior to and during ground disturbance and preliminary grading activities at the project site.

- Avoidance of Nesting Bird Season. To the extent feasible, construction shall be scheduled outside the avian nesting season to avoid impacts on nesting birds (including raptors) protected under the MBTA and CFGC. The nesting season for birds in Santa Clara County generally extends from January 1 through September 1.
- Pre-construction/Pre-disturbance Surveys for Nesting Birds. If construction activities cannot be scheduled outside of the nesting season noted above, pre-construction surveys for nesting birds shall be completed by a qualified biologist to identify any active nests that could be disturbed during project implementation. Surveys shall be completed no more than 7 days prior to the initiation of ground disturbance and preliminary grading. During this survey, the biologist shall inspect the volunteer shrubs along the eastern perimeter of the project site. If an active nest is found sufficiently close to work areas to be disturbed by these activities, the biologist shall determine the extent of a disturbance-free buffer zone to be established around the nest (typically 250 feet for raptors and 50 to 100 feet for other species), to ensure that no nests of species protected by the MBTA and CFGC will be disturbed during project construction.
- A report indicating the result of the survey and any designated buffer zones shall be submitted to the satisfaction of the Director of Community Development prior to the start of ground disturbance, grading, and/or tree removal activities.

Implementation of the identified mitigation measure would reduce construction impacts on protected raptors and other migratory birds to a less-than-significant level. **(Less Than Significant Impact with Mitigation)**

4.4.2.3 Impacts on Trees

As discussed previously, the City of Santa Clara General Plan seeks to preserve recognized historic, architectural, and/or cultural resources that relate to the heritage of the City. In so doing, the City has developed a Heritage Tree Inventory that identifies significant trees protected from removal.

There are no trees and limited landscaping present on the project site. Thus, the project would not involve the removal of trees. Approximately 120 new trees (including London Plane, Coast Live Oak, and Brisbane Box trees) would be planted around the perimeter of the project site and along the central access drive. **(No Impact)**

4.4.2.4 Consistency with Applicable Plans, Policies, and Regulations

As discussed previously, the project would be consistent with the City's policies and regulations to protect biological resources, including those in the City of Santa Clara General Plan and the Santa Clara City's Code. **(Less Than Significant Impact)**

In addition, the project site is not subject to an approved Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan; therefore, no impact would occur. **(No Impact)**

4.4.3 Conclusion

With implementation of the proposed mitigation measure, the project would have a less than significant impact on biological resources **(Less Than Significant Impact with Mitigation)**

4.5 CULTURAL RESOURCES

4.5.1 Setting

According to the Santa Clara General Plan, all areas of the City hold potential for the presence of prehistoric and archaeological resources, with the exception of current and former stream channels and areas with artificial fill. All other native soil types present in the City, flood basin, levee deposits on the west side of the Guadalupe River, and alluvial floodplains, have a high potential for the presence of buried prehistoric deposits. Thus, although there are no existing conditions or immediate evidence that would suggest the presence of historic or prehistoric resources, the project site is located in a culturally sensitive area due to the known prehistoric and historic occupation of Santa Clara.

4.5.1.1 Regulatory Setting

California Environmental Quality Act: California Register of Historical Resources

Buildings over 50 years of age require evaluation under the California Register of Historical Resources (CRHR), as age-eligible buildings may be considered to be cultural resources for the purposes of CEQA. According to the CEQA Guidelines Section 15064.5, a historical resource is defined as "a resource listed in, or determined to be eligible for listing in, the California Register of Historical Resources," 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." In order to be eligible for listing in the CRHR, a property must meet at least one of the following criteria: (1) is associated with events that have made a significant contribution to the broad patterns for California's history and cultural heritage; (2) is

associated with the lives of persons important in history; (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; (4) has yielded, or may be likely to yield, information important in prehistory or history.[23]

General Plan Policy

The City is rich with archaeological and paleontological resources, including the Santa Clara Mission, Native American burial grounds, the Berryessa Adobe, and many others listed in the Santa Clara General Plan. The Santa Clara General Plan ensures that archaeological and cultural resources are protected, now and into the future, and that appropriate mitigation measures for unforeseen impacts are enforced in the event unknown resources are encountered. General Plan Policy 5.6.3-P5 requires that in the event that archaeological/paleontological resources are discovered, work be suspended until the significance of the find and recommended actions are determined by a qualified archaeologist/paleontologist. General Plan Policy 5.6.3-P6 indicates that in the event human remains are discovered, work with the appropriate Native American representative is to be conducted following the procedures set forth in State law.

The Criteria for Local Significance[24]

The Criteria for Local Significance was adopted on April 20, 2004, by the City of Santa Clara City Council. 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.

Criterion for Historic or Cultural Significance. To be historically or culturally significant, a property must meet at least one of the following criterion:

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.

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[23] California Resources Agency. *CEQA Guidelines,* Section 15064.5(a)(3). As amended October 23, 2009.

[24] California Resources Agency. *CEQA Guidelines,* Section 15064.5(a)(3). As amended October 23, 2009.

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 Geographical Significance. To be geographically significant, a property must meet at least one of the following criterion:

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.

4.5.1.2 Prehistoric Resources

Archaeological sites have been found throughout Santa Clara County. Aside from the sites already identified within the City, there may be other undiscovered archaeological sites present. Native American settlements are commonly associated with the abundant food supply in the Santa Clara Valley, and they often established settlements near local waterways. The nearest waterway is the highly disturbed San Tomas Aquino Creek located 1.2 miles west of the project site. Another nearby waterway is the highly disturbed Guadalupe River, 1.2 miles east of the project site.

4.5.1.3 Historic Resources

The project site is primarily surrounded by industrial and commercial land uses. The area immediately surrounding the project site was developed largely during the early 1950s after the end of World War II. The project site includes APNs 224-40-001 (651 Mathew Street), and 224-40-002 (725 Mathew Street), both of which were developed as canneries in the late 1940s. The project site also includes APN 224-40-011 (825 Mathew Street), which is currently a parking lot and does not contain any buildings or structures.

Historical Significance and Resource Evaluation

As part of this analysis, the properties within the existing industrial warehouses, manufacturing, and office facilities on the project site (APNs 224-40-001 and 224-40-002) were recorded during a cultural resources survey on October 25, 2016, evaluated for listing in the CRHR, National Register of Historic Places (NRHP), and the local Santa Clara Historic Preservation Resource Inventory, and documented on Department of Parks and Recreation (DPR) 523 forms. The DPR forms are included in Appendices C.1 and C.2 of this Initial Study. The evaluation concluded that the properties within the project site do not meet the criteria for listing in the CRHR, NRHP, or the local inventory, and thus they do not qualify as historical resources under CEQA. A summary of the evaluation under the NRHP Criteria A-D, the CRHR Criteria 1-4, and local Santa Clara Criteria for Significance for the buildings located on APNs 224-40-001 (651 Mathew Street) and 224-40-002 (725 Mathew Street) is provided below. [25]

Evaluation under the National Register of Historic Places (NRHP) Criteria A-D and the California Register of Historical Resources (CRHR) Criteria 1-4

Criterion A and 1 (Events)

651 Mathew Street. Diana Fruit Preserving Company was established in 1921 during the height of the canning and packing industry but decades after the industry's initial development in the area in the Santa Clara Valley. Diana Fruit contributed to the success of the Santa Clara fruit packing trade and the cherry preserving industry through the development of the coloring process under founder Alexander Diana. Thus the company achieved some local significance for its contributions to the fruit packing trade and the cherry preserving industry in particular; however, the company achieved its fame during the 1930s under the direction and leadership of its founder and 651 Mathew Street was constructed as the second site of Diana Fruit in 1949.The property therefore is not representative of Diana Fruit's significance as it is not the location of the events that gave the company its significance. Furthermore, the current property did not achieve significance on its own merit for contributions to the advancement in the fruit canning and processing industry. Although the property appears to be the last remaining example of the fruit packing industry in the City of Santa Clara, it is not however not a rare surviving or early example in Santa Clara County. An earlier and much more intact example that conveys the industry's historic character is located nearby at 198 Martha Street in San Jose, constructed in 1919 for the American Can Company. As a result, 651 Mathew Street is not eligible for listing on the NRHP under Criterion A or the CRHR under Criterion 1.

725 Mathew Street. 725 Mathew Street was constructed as a tomato canning plant for the Gangi Brothers Packing Company in 1945, long after the fruit canning and packing industry had been fully established in the Santa Clara Valley. The Gangi Brothers Packing Company started in Santa Clara during a time when the largely agricultural landscape was on the cusp of transforming into a landscape of residential subdivisions and sprawling industrial complexes. Although a late-comer to the canning and fruit packing business in Santa Clara County, the Gangi Brothers endured on the site operating as a tomato cannery for 59 years and continuing the long history of fruit packing in the region. Longevity of use however does not give the property sufficient historical significance for NRHP/CRHR eligibility under Criterion A/1. The Gangi Brothers Packing Company was one of many such tomato canneries in the region, along with Hershel California Fruit Products Co., Madonna Foods, Inc., San Jose Canning Co., and Thornton Canning Co. The Gangi Brothers did not make any significant contributions to the

[25] The following discussion summarizes the analysis included in the DPR forms provided as Appendices C.1 and C.2 of this Initial Study.

development or advancement of the canning industry. As a result, 725 Mathew Street is not eligible for listing on the NRHP under Criterion A or the CRHR under Criterion 1.

Criterion B and 2 (Person)

651 Mathew Street. The property was owned by the Diana Fruit Preserving Company, and the site was purchased for the growing business in the late 1940s by Eugene Acronico, son-in-law of founder, Alexander Diana. Acronico continued to grow the business which eventually went to his son Eugene Acronico Jr. Outside of continuing an already prosperous business, the Acronicos do not appear to have made any significant contributions to the development of the fruit canning and processing industry, nor any other contributions to local, state or national history. Although Alexander Diana appears to be a person of historical significance for his important contributions to the development of the cherry packing industry, the subject property itself is not the place where his important work was accomplished. The subject property therefore, is not eligible for listing on the NRHP under Criterion B or the CRHR under Criterion 2.

725 Mathew Street. The property was owned by the Gangi Brothers Packing Company and was operated and presided over by Valentino, John, Peter and Anthony Gangi Jr. The brothers started their joint venture in 1945, which lasted until the youngest brother's death in 2004. The Gangi brothers appeared to have come from a long family line of tomato processors and canners. Their grandfather established a tomato packing company in New York prior to the turn of the century and their father continued the family tradition in tomato processing after their move to California in 1916. The Gangi brothers established their own business on Mathew Street in Santa Clara after World War II. Although proprietors of a long-running family business, the Gangi brothers did not make any known contributions to the advancement of the tomato canning industry and did not establish their company in Santa Clara until the industry was already well-established. As such, the property is not eligible for listing on the NRHP under Criterion B or the CRHR under Criterion 2.

Criterion C and 3 (Design/Construction)

651 Mathew Street. Architecturally, the industrial style buildings on the property represent common characteristics of their type. The property includes two rows of attached and detached industrial and utilitarian cannery and warehouse buildings of varying ages that lack design cohesion. They are mainly of wood frames and exhibit elements typical of most industrial complexes constructed during the 1950s and 1960s. Due to the property's lack of architectural distinction and lack of association with known significant architect/builder, the property is not eligible for listing in the NRHP Criterion C or CRHR Criterion 3.

725 Mathew Street. Architecturally, the industrial style buildings on the property represent common characteristics of their respective building types. The property includes two rows of attached industrial and utilitarian storage buildings of varying ages that lack design cohesion. They are mainly constructed of wood frame and exhibit elements typical of most industrial complexes constructed during the 1950s and 1960s. The only known architect for the property is a Bothelia and Perez who designed and built the Scale House, Office Building and Warehouse in 1965-1968. Bothelia and Perez appear to have been little-known local contractors. Due to the property's lack of architectural distinction and lack of association with a significant architect/builder, the property is not eligible for listing in the NRHP Criterion C or CRHR Criterion 3.

Criterion D and 4 (Information Potential)

Neither 651 Mathew Street nor 725 Mathew Street appear to be significant under NRHP Criterion D or CRHR Criterion 4 as a source, or likely source, of important historical information related to the built environment, and it does not appear likely to yield important information about historic construction methods, materials, or technologies.

Evaluation under the Criteria for Local Significance

Historic or Cultural Significance

651 Mathew Street. The Diana Fruit Company appears to have some local significance as a company "associated with a significant industrial, institutional, commercial, agricultural, or transportation activity." However, Diana Fruit's historical significance is closely tied to its creator Alexander Diana's contributions to the cherry packing industry during the 1930s, which occurred at the company's original location at 215 Monroe Street. The property has no physical connection to the significance of the Diana Fruit Company under Alexander Diana and, therefore, the property is not eligible for local listing under the Criterion for Historic or Cultural Significance.

725 Mathew Street. Although the Gangi Brothers were late-comers to the canning and fruit packing business in Santa Clara County, they operated the site as a tomato cannery for 59 years, continuing the long history of fruit packing in the region. Longevity of use however does not give the property sufficient historical significance for local register eligibility. The Gangi Brothers Packing Company was one of many such tomato canneries in the region, along with Hershel California Fruit Products Co., Madonna Foods, Inc., San Jose Canning Co., and Thornton Canning Co. Although proprietors of a long-running family business, the Gangi brothers did not make any known contributions to the advancement of the canning industry and did not establish their company in Santa Clara until the industry was already well-established in the area. Therefore, the property is not eligible for local listing under the Criterion for Historic or Cultural Significance.

Architectural Significance

651 Mathew Street. The property is a common example of an industrial complex, is not associated with a known master architect or builder, is not architecturally unique or innovative, does not represent a visual symbolic meaning for the community, nor does it possess notable attributes of an aesthetic or functional nature. Therefore, the property is not eligible for local listing under the Criterion for Architectural Significance.

725 Mathew Street. The property is a common example of an industrial complex, is not associated with a known master architect or builder, is not architecturally unique or innovative, does not represent a visual symbolic meaning for the community, nor does it possess notable attributes of an aesthetic or functional nature. Therefore, the property is not eligible for local listing under the Criterion for Architectural Significance.

Geographical Significance

The setting of the both 651 Mathew Street and 725 Mathew Street have changed significantly since their construction and do not contribute to a neighborhood or unique area directly associated with the development of the fruit packing industry in Santa Clara. Although many of the adjacent properties are of similar light industrial uses, they do not present a visual continuity of character similar in design and compatibility to 651 Mathew Street and 725 Mathew Street. There does not appear to be the potential for

a historical district that would include the properties as a contributor. Therefore, the properties do not appear to meet the local Criterion for Geographical Significance.

Archaeological Significance

651 Mathew Street and 725 Mathew Street are not subject to this criterion because they do not qualify as an "archaeological resource."

Integrity

651 Mathew Street. The property at 651 Mathew Street has undergone several changes over time. Many of the cannery buildings and warehouses have been extensively remodeled and expanded in a number of incompatible additions over the years including the removal of many of the tanks from the property between 1960 and 1980, the remodel of the south wall of the 1950 cannery building ca. 1980, and complete remodel of the central 1965 warehouse in 2009. In addition, a number of the cannery buildings have been demolished including the boiler room and one of the 1965 warehouse buildings. The property was originally located on 215 Monroe Street in Santa Clara where it achieved its historical significance and moved to the subject property in 1949. According to historic aerials and the historical data, the surrounding area was predominantly made up of scattered industrial properties with large swaths of agricultural parcels during the first decade after the construction of the property. Overall, the property has low integrity in its aspects of location, setting, design, materials, and workmanship. The property retains its association and feeling as a fruit packing industry in Santa Clara as it continues in its historic use and contains some of the original cannery and packing warehouse buildings constructed on the subject property. The definition of integrity in the Santa Clara Historic Preservation and Resource Inventory follows the seven aspects of integrity of the NRHP and states furthermore that "to retain historic integrity, a property will always possess several, and usually most, of these aspects." Therefore, the property does not retain historic integrity.

725 Mathew Street. The property at 725 Mathew Street has undergone several changes over time. The original cannery and the remains of the boiler room are dilapidated and missing original features and the façade of the original cannery building is not visible behind a storage structure. The other former cannery buildings and warehouses have been extensively remodeled and expanded in a number of incompatible additions over the years. In addition, a number of the cannery buildings have been demolished including the boiler room addition, scale house and scales and sheds fronting Mathew Street. According to historic aerials and the historical data, the surrounding area was predominantly scattered industrial properties with large swaths of agricultural parcels during the first two decades of the construction of the property. Overall, the property has low integrity in its aspects of location, setting, design, materials, workmanship, association and feeling. The definition of integrity in the Santa Clara Historic Preservation and Resource Inventory follows the seven aspects of integrity of the NRHP and states furthermore that "to retain historic integrity, a property will always possess several, and usually most, of these aspects." The property does not retain any of the seven aspects of integrity, and therefore does not retain historic integrity.

4.5.1.4 Paleontological Resources

Paleontological resources are fossilized remains of organisms from prehistoric environments found in geologic strata. Paleontological sites are those areas where the remains of prehistoric living forms is preserved. They are sometimes identified from outcroppings visible on the earth's surface or sites encountered during grading. While such sites are important finds, it is the geologic formations themselves that are indicative of the potential presence of paleontological resources, because if a geologic formation

contains paleontological resources in one locality, it has potential to contain them anywhere the formation occurs.

Geologic units of the Holocene age are generally not considered sensitive for paleontological resources, because biological remains younger than 10,000 years are not usually considered fossils. These sediments have low potential to yield fossil resources or contain significant nonrenewable paleontological resources. However, these recent sediments may overlie older sediments with high potential to contain paleontological resources. Some older sediments have potential to yield fossil remains of extinct species, including extinct terrestrial vertebrates.

Surficial deposits at the project site are Basin Deposits of Holocene age.[26] Recent research suggests that the Quaternary alluvium of the Santa Clara Valley may be "more paleontologically sensitive than previously recognized"[27] As discussed below, late Pleistocene vertebrate fossils have been found from multiple localities across Santa Clara Valley, including Lawrence Expressway East, San Jose; Santa Clara Valley Water District lands in the Guadalupe River in San Jose; Sunnyvale Sewer, Sunnyvale; Calabaza Creek, Sunnyvale; and Milpitas, as well as multiple localities farther north.

UCMP V91128 Lawrence Expressway E, San Jose, California. *Mammuthus.* Discovered near the intersection of US 101 and Lawrence Expressway interchange in "sandy gravel deposits 15 feet above sea level and 9 feet below the modern surface."

UCMP V99597 Santa Clara Valley Water District Mammoth ("Lupe"), San Jose, California. *Mammuthus columbi.* Recovered from Guadalupe River bottom just downstream from the Norman Y. Mineta San Jose International Airport, in hardpan about 11.5 feet below the modern floodplain and 14.8 feet below sea level.

USGS M1218 Sunnyvale Sewer, Sunnyvale, California. *Ursus* sp. *Equus* sp., *Bison* sp., *Camelops* sp., *Thomomys bottae*. *Ursidae* Fischer, 1817, Recovered near the intersection of Briton and Taylor Avenues.

USGS M1218A Calabaza, Sunnyvale Sewer, Sunnyvale, California. *Urocitellus beldingi* (originally reported as *Spermophilus beldingi*), *Equidae* Gray, 1821, *Camelops* sp. Recovered near the intersection of Briton and Taylor Avenues.

UCMP V4916, Milpitas, Milpitas, California. *Bison*. Approximately 1.5 miles west of Milpitas and approximately 0.2 mile west of the channel of Coyote Creek in a pear orchard on Jackson Ranch. Found in soil or subsoil in a sandy layer at about 2 feet deep.

All of the localities listed above and all but two of the northern localities referenced in Maguire and Holroyd (2016) are mapped with surficial Holocene deposits and are shallow. These occurrences "demonstrate that older sediments and fossils (>10 ka [thousand years before present]) occur at or very near the surface in these areas," particularly because the amount, association, and orientation of the fossils from these localities indicate that the sediments in which they occur had not been reworked through geologic or artificial processes.[28] Accordingly, Pleistocene alluvium may be more widespread and

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[26] Murray Engineers. 2016. *Geotechnical Investigation, Vantage Data Centers, 651, 725, 825, Mathew Street, Santa Clara, California, 95050*. November.

[27] Maguire, K.C. and Holroyd, P.A. 2016. Pleistocene vertebrates of Silicon Valley (Santa Clara County, California). *PaleoBios* 33(0). Available: http://escholarship.org/uc/item/3k43832x. Accessed: October 28, 2016.

[28] Maguire, K.C. and Holroyd, P.A. 2016. Pleistocene vertebrates of Silicon Valley (Santa Clara County, California). *PaleoBios* 33(0). Available: http://escholarship.org/uc/item/3k43832x. Accessed: October 28, 2016.

shallower in the Santa Clara Valley than was previously thought and Pleistocene fossils resources could be present across the Santa Clara Valley.

4.5.1.5 Applicable Plans, Policies, and Regulations

General Plan Policy

The City is rich with archaeological and paleontological resources, including the Santa Clara Mission, Native American burial grounds, the Berryessa Adobe, and many others listed in the Santa Clara General Plan. The Santa Clara General Plan ensures that archaeological and cultural resources are protected, now and into the future, and that appropriate mitigation measures for unforeseen impacts are enforced in the event unknown resources are encountered. General Plan Policy 5.6.3-P5 requires that in the event that archaeological/paleontological resources are discovered, work be suspended until the significance of the find and recommended actions are determined by a qualified archaeologist/paleontologist. General Plan Policy 5.6.3-P6 indicates that in the event human remains are discovered, work with the appropriate Native American representative is to be conducted following the procedures set forth in State law.

Additionally, the Criteria for Local Significance, which was adopted on April 20, 2004 by the City of Santa Clara City Council, states that "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" for local listing. The criteria is detailed in the section 4.5.1.1 above.

4.5.2 Environmental Checklist and Discussion of Impacts

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the Project:				
1. Cause a substantial adverse change in the significance of an historical resource as defined in §15064.5?	☐	☐	☐	☒
2. Cause a substantial adverse change in the significance of an archaeological resource as defined in §15064.5?	☐	☒	☐	☐
3. Directly or indirectly destroy a unique paleontological resource or site, or unique geologic feature?	☐	☒	☐	☐
4. Disturb any human remains, including those interred outside of formal cemeteries?	☐	☒	☐	☐

4.5.2.1 Impacts on Subsurface Prehistoric and Historic Resources

There are no existing conditions or immediate evidence that would suggest the presence of buried prehistoric or paleontological resources on the project site. However, the project site is in the vicinity of San Tomas Aquino Creek and Guadalupe River, as previously discussed, and development of the project could result in the exposure or destruction of unknown subsurface historic and/or prehistoric resources, as discussed below.

Potential Impacts on Subsurface Historic and/or Prehistoric Resources

The project would demolish the existing on-site industrial warehouses, manufacturing, and office facilities, and adjacent surface parking and construct two four-story, approximately 206,500-gsf data center buildings and an electrical substation. Ground-disturbing activities would include surface grading, trenching for utilities, and the installation of deep piles or deep ground improvements to support the foundations of the buildings. While unlikely, construction activities could potentially result in the exposure or destruction of unknown subsurface historic and/or prehistoric resources. The exposure or destruction of subsurface prehistoric resources would be considered a significant impact.

Impact CR-1: Although there are no known prehistoric or historic archaeological deposits on or directly adjacent to the site, future development under the project could result in the exposure or destruction of as yet undiscovered subsurface prehistoric archaeological resources. If the exposure or destruction of subsurface prehistoric resources were to occur, it would be considered a significant impact. (**Significant Impact**)

Mitigation Measures:

The following project-specific mitigation measures shall be printed on all construction documents and implemented during construction to avoid significant impacts on subsurface historic and/or prehistoric resources:

MM CR-1.1: A qualified archaeologist shall be on site to monitor grading of native soil once all pavement is removed from the project site. The project applicant shall submit the name and qualifications of the selected archeologist to the Director of Community Development prior to the issuance of a grading permit. After monitoring the grading phase, the archaeologist shall make recommendations for further monitoring if it is determined that the site has cultural resources. Recommendations for further monitoring shall be implemented during any remaining ground-disturbing activities. If the archaeologist determines that no resources are likely to be found on site, no additional monitoring shall be required. A letter report summarizing the results of the initial monitoring during site grading and any recommendations for further monitoring shall be provided to the Director of Community Development prior to onset of building construction.

MM CR-1.2: In the event that prehistoric or historic resources are encountered during on-site construction activities, all activity within a 50-foot radius of the find shall be stopped, the Director of Community Development shall be notified, and a qualified archaeologist or paleontologist shall examine the find and make appropriate recommendations. Recommendations could include collection, recordation, and analysis of any significant cultural materials. A report of findings documenting any data recovery during monitoring shall then be submitted to the Director of Community Development.

MM CR-1.3: In the event that human remains are discovered during on-site construction activities, all activity within a 50-foot radius of the find shall be stopped. The Santa Clara County Coroner shall be notified and shall make a determination as to whether the remains are of Native American origin or whether an investigation into the cause of death is required. If the remains are determined to be Native American, the Coroner shall notify the Native American Heritage Commission

(NAHC) immediately. Once NAHC identifies the most likely descendants, the descendants shall make recommendations regarding proper burial, which shall be implemented in accordance with Section 15064.5(e) of the CEQA Guidelines.

Implementation of the identified mitigation measures would reduce impacts on subsurface historic and/or prehistoric resources to a less-than-significant level. **(Less than Significant Impact with Mitigation)**

4.5.2.2 Impacts on Historic Resources

As previously discussed, two parcels on the project site include buildings and structures over 50 years of age (APNs 224-40-001 and 224-40-002). The evaluation performed as part of this analysis concluded that the properties within the project site do not meet the criteria for listing in the CRHR, NRHP or the local register and thus they do not qualify as CEQA historical resources. The evaluation concluded that the industrial cannery properties do not meet the criteria for listing in the CRHR under Criteria 1 (events), 2 (person), 3 (architecture) or 4 (information potential). The cultural resources survey performed as part of this analysis did not identify any additional historical resources within the project site. In addition, the properties within the project site are not listed nor eligible for listing as locally significant architectural or historic properties in the City of Santa Clara General Plan's Historic Preservation and Resource Inventory.[29] A detailed recordation, historic context, and CRHR evaluation of the project site is included in Appendices C.1 and C.2 of this Initial Study and summarized above in Section 4.5.1, *Setting*.

Based on the above analysis, the project site is not a historical resource for the purposes of CEQA. Therefore, demolition of the existing structures on the project site and the construction of the proposed data center buildings would not alter the significance of a historical resource as defined in Section 15064.5 of the CEQA Guidelines. Therefore, the proposed project would have no impact related to historical resources. **(No Impact)**

4.5.2.3 Impacts on Paleontological Resources

The fossil-yielding potential of geologic units in a particular area depends on the geologic age and origin of the underlying rocks as well as on the processes that the rocks have undergone, both geologic and anthropogenic.[30] The methods used to analyze potential impacts on paleontological resources involved the following steps.

- Identify the geologic units in the paleontological study area.
- Evaluate the potential of the identified geologic units to contain significant fossils (their *paleontological sensitivity*).
- Identify and evaluate impacts on paleontologically sensitive geologic units as a result of project and program construction and operations that involve ground disturbance.
- Evaluate impact significance.

The project's potential to affect paleontological resources relates to ground disturbance. Ground disturbance caused by project implementation would take place only during construction. This, this analysis addresses construction impacts.

[29] City of Santa Clara General Plan. 2014. *General Plan – Appendix 8.9*.

[30] *Anthropogenic* means caused by human activity.

To evaluate the paleontological sensitivity of the geologic units, the geologic units present at the project site were evaluated and current literature was consulted.[31,32]

Next, the paleontological sensitivity of the geologic units was assessed. The Impact Mitigation Guidelines Revisions Committee of the Society of Vertebrate Paleontology published Standard Guidelines in 2010. The Standard Guidelines include procedures for the investigation, collection, preservation, and cataloguing of fossil-bearing sites. The Standard Guidelines are widely accepted among paleontologists and are followed by most investigators. The Standard Guidelines identify the two key phases of paleontological resource protection as (1) assessment and (2) implementation. Assessment involves identifying the potential for a project site or area to contain significant nonrenewable paleontological resources that could be damaged or destroyed by project excavation or construction. Implementation involves formulating and applying measures to reduce such adverse effects. The Society of Vertebrate Paleontology defines the level of potential as one of four sensitivity categories for sedimentary rocks: High, Undetermined, Low, and No Potential.[33]

- **High Potential.** Assigned to geologic units from which vertebrate or significant invertebrate, plant, or trace fossils have been recovered; and sedimentary rock units suitable for the preservation of fossils ("e.g., middle Holocene and older, fine-grained fluvial sandstones…fine-grained marine sandstones, etc."). Paleontological potential consists of the potential for yielding abundant fossils, a few significant fossils, or "recovered evidence for new and significant taxonomic, phylogenetic, paleoecologic, taphonomic, biochronologic, or stratigraphic data."
- **Undetermined Potential.** Assigned to geologic units "for which little information is available concerning their paleontological content, geologic age, and depositional environment." In cases where no subsurface data already exist, paleontological potential can sometimes be assessed by subsurface site investigations.
- **Low Potential.** Field surveys or paleontological research may allow determination that a geologic unit has low potential for yielding significant fossils, e.g., basalt flows. Mitigation is generally not required to protect fossils.
- **No Potential.** Some geologic units have no potential to contain significant paleontological resources, such as high-grade metamorphic rocks (such as gneisses and schists) and plutonic igneous rocks (such as granites and diorites). Mitigation is not required.

Based on data from the *Geotechnical Investigation* prepared for the project (discussed in Section 4.6, *Geology and Soils*) and current paleontological literature, the subsurface geologic unit in the study area was assigned a paleontological sensitivity of High Potential according to the Society of Vertebrate Paleontology's Standard Guidelines. Significant vertebrate fossils have been recovered from this geologic unit. Thus, similar fossils could be recovered at the project site.

Direct or Indirect Destruction of a Unique Paleontological Resource or Site

There are two options for the building foundations: a deep pile system consisting of auger cast displacement piles; and a rigid mat foundation combined with a deep ground improvement method.[34]

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31 Murray Engineers. 2016. *Geotechnical Investigation, Vantage Data Centers, 651, 725, 825 Mathew Street, Santa Clara, California, 95050.* November.

32 Maguire, K.C. and Holroyd, P.A. 2016. Pleistocene vertebrates of Silicon Valley (Santa Clara County, California). *PaleoBios* 33(0). Available: http://escholarship.org/uc/item/3k43832x. Accessed: October 28, 2016.

33 Society of Vertebrate Paleontology. 2010. *Standard Guideline*s.

34 Murray Engineers. 2016. *Geotechnical Investigation, Vantage Data Centers, 651, 725, 825 Mathew Street, Santa Clara, California, 95050.* November. It is noted that subsequent to the preparation of the *Geotechnical Investigation* prepared for the project, the project applicant determined that a third foundation option that is

Ground-disturbing activities would include surface grading, trenching for utilities, and the installation of deep piles or deep ground improvements to support the foundations of the buildings. Both foundation options could affect paleontological resources. The auger cast displacement pile option would extend from 90 up to 120 feet below ground surface. The rigid mat foundation combined with a deep ground improvement method option would replace soil and would drill ground columns up to depths to be specified by the ground improvement contractor. Because the subsurface geologic unit at the project site is assigned a paleontological sensitivity of High Potential, the potential exists for activities related to the construction of the foundation to uncover and damage significant paleontological resources.

Impact CR-2: Although there are no known paleontological resources underlying the site, future development under the project could result in the exposure or destruction of as yet undiscovered subsurface paleontological resources. If the exposure or destruction of subsurface paleontological resources were to occur, it would be considered a significant impact. (**Significant Impact**)

Mitigation Measures:

The following project-specific mitigation measure shall be printed on all construction documents and implemented during construction to avoid significant impacts on subsurface paleontological resources:

MM CR-2.1: 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 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 shall be prepared that outlines the results of the mitigation program. The City shall be responsible for ensuring that the paleontologist's recommendations regarding treatment and reporting are implemented.

Direct or Indirect Destruction of a Unique Geological Resource or Site

There are no unique geological resources at the project site.

discussed in the *Geotechnical Investigation* (a deep pile system consisting of driven, precast, prestressed concrete piles) is not feasible for the project site.

4.5.3 Conclusion

With the implementation of the proposed mitigation measures, the project would have a less-than-significant impact on subsurface historic and/or prehistoric resources. **(Less Than Significant Impact with Mitigation)**

The project would result in no impact on historic resources. **(No Impact)**

With the implementation of the proposed mitigation measure, the project would result in a less-than-significant impact on paleontological resources. **(Less Than Significant Impact with Mitigation)**

4.6 GEOLOGY AND SOILS

Unless otherwise noted, the following discussion of potential impacts related to geology and soils is based on the *Geotechnical Investigation* prepared for the project, which is included in Appendix D of this Initial Study.[35]

4.6.1 Setting

4.6.1.1 Geology and Soils

The project site is in the Santa Clara Valley, a relatively broad and level alluvial basin, bounded by the San Francisco Bay to the north, the Santa Cruz Mountains to the west and southwest, and the Diablo Mountain Range to the east and southeast. The Santa Clara Valley's basin contains alluvial deposits derived from the Diablo Range and the Santa Cruz Mountains.[36]

The majority of the project site is underlain by Holocene age (less than 11,000 years old) Basin Deposits (Qhb). The 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. Based on borings conducted at the project site, the site is underlain predominately by fine-grained alluvium consisting of clays and silts interbedded with discontinuous layers of coarse-grained alluvium consisting of sands and gravels. The maximum cumulative thickness of coarse-grained alluvium encountered was approximately 35 feet. The fine-grained alluvium encountered is predominantly medium stiff to hard and the coarse-grained alluvium is predominantly medium dense to very dense. The weaker medium stiff compressible clay layers appear to be discontinuous across the site and vary in thickness.

The near-surface material at the project site is highly expansive. Expansive soil can undergo volume changes with changes in moisture content. Specifically, when wetted as during the rainy season, expansive soil tends to swell and when dried as during the summer months, this material shrinks. Structures and flatwork supported on expansive soil tend to experience cyclic, seasonal heave, and settlement.

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[35] Murray Engineers. 2016. *Geotechnical Investigation, Vantage Data Centers, 651, 725, 825 Mathew Street, Santa Clara, California, 95050.* November.

[36] City of Santa Clara. 2011. *Integrated Final Environmental Impact Report, City of Santa Clara Draft 2010-2035 General Plan.* January. Available: http://santaclaraca.gov/home/showdocument?id=12900. Accessed: October 6, 2016.

There are no unique geologic features on or adjacent to the project site. The topography of the project site and the surrounding area is relatively flat.

4.6.1.2 Groundwater

Seasonal fluctuations, drainage patterns, and other factors can affect the groundwater level. According to the *Geotechnical Investigation,* groundwater was encountered between 6 to 11 feet below grade at the project site. According to recent pore pressure dissipation tests conducted at the project site, groundwater was encountered between depths of 0.5 to 6.7 feet below grade at the project site.

4.6.1.3 Seismicity and Seismic Hazards

The San Francisco Bay Area is one of the most seismically active areas in the United States. The project site is not located within the limits of an Alquist-Priolo Earthquake Fault Zone. While seismologists cannot predict earthquake events, the U.S. Geological Survey's Working Group on California Earthquake Probabilities estimates there is a 63 percent chance of at least one magnitude 6.7 earthquake occurring in the Bay Area in the next 30 years. Higher levels of shaking and damage would be expected for earthquakes occurring at closer distances. The faults considered capable of generating significant earthquakes in the area are generally associated with the well-defined areas of crustal movement, which trend northwesterly.

Three northwest-trending major earthquake faults (the San Andreas fault, the Hayward fault, and the Calaveras fault) that comprise the San Andreas fault system extend through the Bay Area. Table 4.6-1 lists nearby active faults and their respective distances from the project site. As shown in Table 4.6-1, in addition to the major earthquake faults, one of the many traces of the Monte Vista – Shannon fault zone is also near the project site.

TABLE 4.6-1
ACTIVE FAULTS NEAR THE PROJECT SITE

Fault	Approximate Distance From Project Site (miles)	Location with Respect to Project Site
San Andreas	10	Southwest
Hayward	6	Northeast
Calaveras	9	Northeast
Monte-Vista—Shannon	7	Southwest

Source: Murray Engineers. 2016. Geotechnical Investigation, Vantage Data Centers, 651, 725, 825, Mathew Street, Santa Clara, California, 95050. November.

Liquefaction

Soil liquefaction is a condition in which saturated granular soils near the ground surface undergo a substantial loss of strength due to increased pore water pressure resulting from cyclic stress applications induced by earthquakes or other vibrations. In the process, the soil acquires mobility sufficient to permit both vertical and horizontal movements, if not confined. Soils most susceptible to liquefaction are loose, uniformly graded, fine-grained, sands and loose silts with very low cohesion. According to the *Geotechnical Investigation,* the State seismic hazards maps relevant to the project site indicate the project site is located in an area considered potentially susceptible to earthquake-induced liquefaction.

Lateral Spreading

Lateral spreading is a type of ground failure related to liquefaction. It consists of the horizontal displacement of flat-lying soil alluvial material toward a free face (such as the steep bank of a stream channel). The nearest waterway is the highly disturbed San Tomas Aquino Creek, approximately 1.15 mile west of the project site. Another nearby waterway is the Guadalupe River, approximately 1.23 mile east of the project site. However, because the topography of the project site is flat and there are no open faces or slopes near the project site, the potential for lateral spreading at the project site is considered low.

4.6.2 Environmental Checklist and Discussion of Impacts

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the Project:				
1. Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:				
a. Rupture of a known earthquake fault, as described 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.)	☐	☐	☐	☒
b. Strong seismic ground shaking?	☐	☐	☒	☐
c. Seismic-related ground failure, including liquefaction?	☐	☐	☒	☐
d. Landslides?	☐	☐	☒	☐
2. Result in substantial soil erosion or the loss of topsoil?	☐	☒	☐	☐
3. Be located on a geologic unit or soil that is unstable, or that will become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?	☐	☐	☒	☐
4. Be located on expansive soil, as defined in Section 1802.3.2 of the California Building Code (2007), creating substantial risks to life or property?	☐	☐	☒	☐
5. Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?	☐	☐	☐	☒

As discussed in Section 4.3, *Air Quality*, the California Supreme Court concluded in the CBIA v. BAAQMD decision that "CEQA generally does not require analysis of how existing environmental conditions will impact a project's future users or residents." With this ruling, CEQA no longer considers the impact of the environment on a project (such as the impact of existing seismic hazards on new project receptors) to be an impact requiring consideration under CEQA. Therefore, the following discussions of seismic and soil hazards are provided for informational purposes only.

4.6.2.2 Seismic Hazards

As previously discussed, the project site is located within the seismically active San Francisco Bay region. As shown in Table 4.6-1, the Hayward fault is 6 miles from the project site and is the closest active fault to the project site. Because the fault is not within the limits of an Alquist-Priolo Earthquake Fault Zone, surface fault rupture is unlikely. Although the project site is not located on or adjacent to a major earthquake fault, severe ground shaking is probable during the useful life of the project. In addition, the project site is located within an earthquake-induced liquefaction hazard zone, so there is potential for some of the looser granular and low-plasticity soil layers underlying the project site to liquefy during a major earthquake event. However, because the topography of the project site is flat and there are no open faces or slopes near the site, the potential for lateral spreading is low.

The design of the project, including the building foundations, would accommodate any such differential settlement. There are two options for the building foundations: a deep pile system consisting of auger cast displacement piles; and a rigid mat foundation combined with a deep ground improvement method.[37] The project would be designed and constructed in accordance with the current (2016) California Building Code and standard engineering safety techniques, including site preparation, compaction, trench excavation, and drainage. In addition, the project applicant would be required to prepare a geotechnical engineering report with project-specific design specifications subject to review and approval by the City Building Official prior to issuance of permits. With implementation of seismic design guidelines in the current California Building Code and project-specific recommendations in a final geotechnical engineering report, the project would not expose people or property to significant impacts associated with geologic or seismic conditions onsite. **(Not a CEQA Impact; Provided for Informational Purposes Only)**

4.6.2.3 Erosion

Construction activities associated with the project (e.g., excavation and grading) could temporarily increase sedimentation and erosion by exposing on-site soils to wind and runoff.

Impact GEO-1: Project implementation could increase erosion and sedimentation until construction is complete and new vegetation is established. **(Significant Impact)**

Mitigation Measures:

The following mitigation measures would reduce erosion impacts during construction.

MM GEO-1.1: All excavation and grading work shall be scheduled in dry weather months, or the construction sites shall be weatherized to withstand or avoid erosion.

MM GEO-1.2: Stockpile and excavated soils shall be covered with secured tarps or plastic sheeting.

MM GEO-1.3: Vegetation in disturbed areas shall be replanted as quickly as possible.

[37] Murray Engineers. 2016. *Geotechnical Investigation, Vantage Data Centers, 651, 725, 825 Mathew Street, Santa Clara, California.* November. It is noted that subsequent to the preparation of the *Geotechnical Investigation* prepared for the project, the project applicant determined that a third foundation option that is discussed in the *Geotechnical Investigation* (a deep pile system consisting of driven, precast, prestressed concrete piles) is not feasible for the project site.

Implementation of the identified mitigation measures would reduce erosion impacts to a less-than-significant level. **(Less Than Significant Impact with Mitigation)**

4.6.2.4 Soil Hazards

Slope Failure

As previously discussed, the topography of the project site and surrounding area is relatively flat. Therefore, the project would not be exposed to landslide-related hazards, and the potential for exacerbating existing slope failure related hazards during operation would be low. **(Less Than Significant Impact)**

Expansive Soils

As previously discussed, expansive soils are present at the project site. The near-surface material is highly expansive. The at-grade structures or hardscape outside of the proposed buildings would be susceptible to seasonal expansive soil movement. However, with implementation of the recommendations presented in the *Geotechnical Investigation*, including implementation of either of the proposed foundation options (a deep pile system consisting of auger cast displacement piles or a rigid mat foundation combined with a deep ground improvement method), shrink and swell of the surficial soil would not have a significant impact on the structural integrity of the proposed improvements. The project would be designed to withstand soil hazards at the project site (e.g., expansive soils) and the project would not, therefore, result in substantial risks to life or property. **(Not a CEQA Impact; Provided for Informational Purposes Only)**

Soils for Septic Systems and Alternative Wastewater Disposal Systems

The project would be connected to the City's existing sanitary sewer system and would not use any septic systems or alternative wastewater disposal systems (refer to Section 4.17, *Utilities and Service Systems*).

4.6.3 Conclusion

With the implementation of the proposed mitigation measures, the project would have a less-than significant impact with mitigation on geology and soils. **(Less Than Significant Impact with Mitigation)**

4.7 GREENHOUSE GAS EMISSIONS

Unless otherwise noted, the following discussion of potential impacts related to greenhouse gas (GHG) emissions is based on the *Air Quality and Greenhouse Gas Technical Report* (AQTR) prepared for the project, which is included in Appendix B of this Initial Study.[38]

4.7.1 Setting

Unlike emissions of criteria and toxic air pollutants, which have local or regional impacts, emissions of GHGs have a broader, global impact. Global warming associated with the "greenhouse effect" is a process whereby GHGs accumulating in the atmosphere contribute to an increase in the temperature of the earth's atmosphere. The principal GHGs contributing to global warming and associated climate

[38] Ramboll Environ US Corporation. 2016. *Air Quality and Greenhouse Gas Technical Report, Vantage Data Centers, 651, 725, 825 Mathew Street, Santa Clara, California, 95050.* November.

change are carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), and fluorinated compounds. 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.

4.7.1.1 Applicable Plans, Policies, and Regulations

Agencies at the international, federal, State, and local levels are considering or have adopted strategies to control emissions of GHG that contribute to global warming. Several key plans and policies are described below.

Federal

Although there is currently no federal overarching law specifically related to climate change or the reduction of GHG, the USEPA is developing regulations under the federal CAA that may be adopted pursuant to the USEPA's authority under the CAA in the next two years. Foremost among recent developments have been the settlement agreements between the USEPA, several states, and nongovernmental organizations to address GHG emissions from electric generating units and refineries; the U.S. Supreme Court's decision in *Massachusetts v. EPA;* and the EPA's "Endangerment Finding," "Cause or Contribute Finding," and Mandatory Reporting Rule. Although periodically debated in Congress, there is no federal legislation concerning GHG emissions limitations. In *Coalition for Responsible Regulation, Inc., et al. v. EPA*, the U.S. Court of Appeals upheld the USEPA's authority to regulate GHG emissions under the CAA.

State

California has adopted statewide legislation addressing various aspects of climate change and GHG emissions mitigation. Much of this establishes a broad framework for the state's long-term GHG reduction and climate change adaptation program. In the absence of federal regulations, control of GHGs is generally regulated at the state level and is typically approached by setting emission reduction targets for existing sources of GHGs, setting policies to promote renewable energy and increase energy efficiency, and developing statewide action plans. Summaries of key policies, regulations, and legislation at the state level that are relevant to the project are described below in chronological order.

Executive Order S-03-05 (2005)

Executive Order (EO) S-03-05 is designed to reduce California's GHG emissions to (1) 2000 levels by 2010, (2) 1990 levels by 2020, and (3) 80 percent below 1990 levels by 2050.

Assembly Bill 32 (AB 32)—California Global Warming Solutions Act (2006)

AB 32 (Health and Safety Code § 38500 et seq.) codified the state's GHG emissions target by requiring that the state's global warming emissions be reduced to 1990 levels by 2020. Since adoption of the act, CARB, California Energy Commission (CEC), California Public Utilities Commission (CPUC), and the Building Standards Commission have been developing regulations that will help meet the goals of AB 32 and EO S-03-05. The 2008 *Climate Change Scoping Plan* for AB 32 (2008 Scoping Plan) identifies specific measures to reduce GHG emissions to 1990 levels by 2020, and requires CARB and other state agencies to develop and enforce regulations and other initiatives for reducing GHGs. Specifically, the 2008 Scoping Plan articulates a key role for local governments, recommending they establish GHG reduction goals for both their municipal operations and the community consistent with those of the state. The first update to the 2008 Scoping Plan, the *First Update to the AB 32 Scoping Plan* (2014 First

Update) was released in February 2014 and includes revised GHG reduction estimates based on updated statewide GHG inventories.

CARB is currently working on the Second Update to the AB 32 Scoping Plan, which will outline policies and actions for meet's the state's 2030 GHG emission target, as outlined under Senate Bill (SB) 32 (discussed below). The Second Update to the AB 32 Scoping Plan, the 2017 Climate Change Scoping Plan Update, was released on January 20, 2017 for public comment.

Senate Bill 375 (SB 375)—Sustainable Communities Strategy (2008)

SB 375 provides for a new planning process that coordinates land use planning, regional transportation plans (RTPs), and funding priorities in order to help California meet the GHG reduction goals established in AB 32.[39] SB 375 requires RTPs, developed by metropolitan planning organizations (MPOs) to incorporate a "sustainable communities strategy" (SCS). The goal of the SCS is to reduce regional VMT through land use planning and consequent transportation patterns.

The Metropolitan Transportation Commission (MTC) and ABAG adopted the Sustainable Communities Strategy and the 2040 Regional Transportation Plan, titled *Plan Bay Area*, in July 2013. The Metropolitan Transportation Commission is currently working on a strategic update to the SCS, called *Plan Bay Area 2040*, which builds on prior work to develop an efficient transportation network, provide more housing choices, and grow the region in a financially and environmentally responsible way. *Plan Bay Area* expressly states that it does not require any changes to local land use policies or environmental review processes. [40]

Senate Bills 1078/107/X 1-2, Renewable Portfolio Standard and Renewable Energy Resources Act (2002, 2006, 2011)

SBs 1078 and 107, California's Renewables Portfolio Standard (RPS), obligated investor-owned utilities energy service providers and Community Choice Aggregations to procure an additional one percent of retail sales per year from eligible renewable sources until 20 percent was reached by 2010. CPUC and CEC are jointly responsible for implementing the program. SB X 1-2, called the California Renewable Energy Resources Act, obligates all California electricity providers to obtain at least 33 percent of their energy from renewable resources by 2020.

California Energy Efficiency Standards for Residential and Nonresidential Buildings—Green Building Code (2011), Title 24 Update (2014)

The Green Building Standards Code (CALGreen) 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 for all new projects beginning after January 1, 2011. CALGreen also requires newly constructed buildings develop a waste management plan and divert at least 50 percent of the construction materials generated during project construction.

Administrative regulations to CALGreen Part 11 and the California Building Energy Efficiency Standards were adopted in 2016 and took effect on January 1, 2017. The 2016 Energy Efficiency Standards are 25

[39] California Government Code Sections 14522.1, 14522.2, 65080, 65080, 65080.01, 65400, 65583, 65584.01, 65584.02, 65584.04, 65587, 65588, and Public Resources Code Sections 2161.3, 21155, 21159.28.

[40] Metropolitan Transportation Commission. 2013. *Plan Bay Area: Strategy for a Sustainable Region*. Metropolitan Transportation Agency and Association of Bay Area Governments. Adopted: July 18, 2013. Available: <http://files.mtc.ca.gov/pdf/Plan_Bay_Area_FINAL/Plan_Bay_Area.pdf>. Accessed: June 20, 2016.

percent more efficient than previous standards for residential construction. Part 11 also established voluntary standards that became mandatory in the 2010 edition of the code, including planning and design for sustainable site development, energy efficiency, water conservation, material conservation, and internal air contaminants. The standards offer builders better windows, insulation, lighting, ventilation systems, and other features that reduce energy consumption in homes and businesses.

The next set of energy efficiency standards are the 2016 Energy Efficiency Standards, which were adopted in 2016 and took effect on January 1, 2017. According to the CEC, single-family homes built to the 2016 standards will use about 28 percent less energy for lighting, heating, cooling, ventilation, and water heating than those built to the 2013 standards. While the 2016 standards do not require zero net energy (ZNE) buildings, the 2019 standards are expected to take the final step toward achieving ZNE for newly constructed residential buildings throughout California. Later standards are expected to require ZNE for newly constructed commercial buildings.

State CEQA Guidelines (2010)

The State CEQA Guidelines require lead agencies to describe, calculate, or estimate the amount of GHG emissions that would result from a project. Moreover, the State CEQA Guidelines emphasize the necessity to determine potential climate change effects of a project and propose mitigation as necessary. The State CEQA Guidelines confirm the lead agency's discretion to determine the appropriate significance threshold, but require the preparation of an environmental impact report (EIR) if "there is substantial evidence that the possible effects of a particular project are still cumulatively considerable notwithstanding compliance with adopted regulations or requirements" (Section 15064.4).

State CEQA Guidelines Section 15126.4 includes considerations for lead agencies related to feasible mitigation measures to reduce GHG emissions, which may include, among others, measures in an existing plan or mitigation program for the reduction of emissions that are required as part of the lead agency's decision; implementation of project features, project design, or other measures that are incorporated into the project to substantially reduce energy consumption or GHG emissions; offsite measures, including offsets that are not otherwise required.

The California Supreme Court has held that the Scoping Plan's statewide goal of reducing GHG emissions by 29 percent from business as usual in order to meet AB 32's target can be used as a threshold of significance for GHG emissions (*Center for Biological Diversity v. Department of Fish and Wildlife* (2015) 62 Cal.4th 204) (henceforth referred to as Newhall Ranch). However, if applied to a local project, the EIR must provide supporting evidence that the project emissions relate to the Scoping Plan. The Court stated, in overturning the application of the Scoping Plan goal to an individual project:

> *At bottom, the court found EIR's deficiency stems from taking a quantitative comparison method developed by the Scoping Plan as a measure of the greenhouse gas emissions reduction effort required by the state as a whole, and attempting to use that method, without consideration of any changes or adjustments, for a purpose very different from its original design: To measure the efficiency and conservation measures incorporated in a specific land use development proposed for a specific location.*

Senate Bill 350—De Leon (Clean Energy and Pollution Reduction Act of 2015) (2015)

SB 350 was approved by the California legislature in September 2015 and signed by Governor Brown in October 2015. Its key provisions are to require the following by 2030: (1) a renewables portfolio standard of 50 percent and (2) a doubling of energy efficiency (electrical and natural gas) by 2030, including improvements to the efficiency of existing buildings. These mandates will be implemented by future actions of the CPUC and CEC.

Senate Bill 32 and Assembly Bill 197 (2016)

SB 32 requires CARB to ensure that statewide GHG emissions are reduced to at least 40 percent below 1990 levels by 2030. The companion bill, AB 197, creates requirements to form a Joint Legislative Committee on Climate Change Policies, requires CARB to prioritize direct emission reductions and consider social costs when adopting regulations to reduce GHG emissions beyond the 2020 statewide limit, requires CARB to prepare reports on sources of GHGs and other pollutants, establishes six-year terms for voting members of CARB, and adds two legislators as non-voting members of CARB.

Regional

Plan Bay Area

Consistent with the requirements of SB 375 (or the Sustainable Communities and Climate Protection Act of 2008) which requires regional transportation plans to be developed by each MPO (as described above), the MTC has partnered with ABAG, BAAQMD, and the Bay Conservation and Development Commission (BCDC) to prepare the region's SCS as part of the RTP process. The SCS is referred to as *Plan Bay Area*.

MTC and ABAG adopted *Plan Bay Area* in July 2013. The strategies in the plan are intended to promote compact, mixed-use development close to public transit, jobs, schools, shopping, parks, recreation, and other amenities, particularly within Priority Development Areas (PDAs) identified by local jurisdictions.

Bay Area 2010 Clean Air Plan

The Bay Area 2010 CAP addresses air emissions in the San Francisco Bay Area Air Basin. One of the key objectives in the 2010 CAP is climate protection. The 2010 CAP includes emission control measures and performance objectives, consistent with the State's climate protection goals under AB 32 and SB 375, designed to reduce emissions of GHGs to 1990 levels by 2020 and 40 percent below 1990 levels by 2035.

BAAQMD CEQA Guidelines

BAAQMD identifies sources of information on potential thresholds of significance and mitigation strategies for operational GHG emissions from land-use development projects in its CEQA Guidelines. The BAAQMD CEQA Guidelines also outline a methodology for estimating GHGs.

In jurisdictions where a qualified GHG reduction strategy has been reviewed under CEQA and adopted by decision-makers, compliance with the GHG reduction strategy would reduce a project's contribution to cumulative GHG emission impacts to a less-than-significant level[41]. As described below, the City of Santa Clara adopted a qualified GHG reduction strategy on December 3, 2013.

[41] The required components of a "qualified" GHG reduction strategy or plan are described in both Section 15183.5 of the CEQA Guidelines and the BAAQMD CEQA Air Quality Guidelines (amended 2012).

Local

City of Santa Clara General Plan

The Santa Clara 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 Santa Clara 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 Santa Clara General Plan.

Climate Action Plan

The City of Santa Clara has a comprehensive GHG emissions reduction strategy (Climate Action Plan or CAP) to achieve its fair share of statewide emissions reductions for the 2020 timeframe consistent with AB 32, the Global Warming Solutions Act. The CAP was adopted on December 3, 2013. The City of Santa Clara CAP specifies the strategies and measures to be taken for a number of focus areas (coal-free and large renewables, energy efficiency, water conservation, transportation and land use, waste reduction, etc.) citywide to achieve the overall emission reduction target, and includes an adaptive management process that can incorporate new technology and respond when goals are not being met.

A key reduction measure that is being undertaken by the City of Santa Clara under the CAP is in the Coal-Free and Large Renewables focus area. The City operates SVP, a publicly owned utility that provides electricity for the community of Santa Clara, including the project site. Since nearly half (48 percent) of Santa Clara's GHG emissions result from electricity use, removing GHG-intensive sources of electricity generation (such as coal) is a major focus area in the CAP for achieving the City's GHG reduction goals. This measure is being undertaken by SVP.

CEQA clearance for all discretionary development proposals are required to address the consistency of individual projects with reduction measures in the 2010 CAP and goals and policies in the Santa Clara General Plan designed to reduce GHG emissions. Compliance with appropriate measures in the CAP would ensure an individual project's consistency with an adopted GHG reduction plan. Projects that are consistent with the CAP would have a less than significant impact related to GHG emissions in 2020.

4.7.1.2 Existing Conditions

The project site is used for industrial warehouses, manufacturing, and office purposes as well as associated surface parking. GHG emissions from traffic trips to and from the project site are minimal.

4.7.2 Environmental Checklist and Discussion of Impacts

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

GHG emissions worldwide contribute, on a cumulative basis, to the significant adverse environmental impacts of global climate change. No single land use project could generate sufficient GHG emissions on its own to noticeably change the global average temperature. The combination of GHG emissions from past, present, and future projects in the City, the entire state of California, and across the nation and around the world, contribute cumulatively to the phenomenon of global climate change and its associated environmental impacts.

AB 32 establishes the requirement for reducing statewide GHGs to 1990 emissions levels by 2020. A number of air quality management agencies throughout the state have drafted or adopted varying threshold approaches and guidelines for analyzing 2020 operational GHG emissions in CEQA documents. The different thresholds include (1) compliance with a qualified GHG reduction strategy, (2) performance-based reductions, (3) numeric "bright line" thresholds, (4) compliance with regulatory programs, and (5) efficiency-based thresholds. The California Supreme Court decision in Newhall Ranch decision confirmed that when an "agency chooses to rely completely on a single quantitative method to justify a no-significance finding, CEQA demands the agency research and document the quantitative parameters essential to that method."

The Newhall Ranch decision also identified the need to analyze both near-term and post-2020 emissions, as applicable, stating that an "EIR taking a goal-consistency approach to CEQA significance may in the near future need to consider the project's effects on meeting longer term emissions reduction targets." All current CEQA GHG threshold concepts recommended by expert agencies are based on AB 32's requirement to reduce statewide GHG emissions to 1990 levels by 2020. However, SB 32 establishes a statewide GHG reduction goal of 40 percent below 1990 levels by 2030. State and local air district guidance on addressing project-level GHG impacts in relation to the 2030 target outlined under SB 32 is forthcoming. While not legally binding on local land use agencies, EO S-03-05 has set forth a longer-term reduction target to reduce GHG emissions by 80 percent below 1990 levels by 2050 (see Section 4.7.1, *Setting*).

In light of the Newhall Ranch decision, the following section discusses each of the five threshold approaches recommended by the California Supreme Court and analyzes its specific applicability to the project.

Compliance with a qualified GHG reduction strategy. As discussed in Section 4.7.1, *Setting*, the City of Santa Clara adopted a CAP in 2013. The CAP was prepared consistent with CEQA Guidelines Sections 15183.5 and includes a 2020 GHG reduction target based on AB 32 goals. Projects that are consistent with the CAP may tier from the environmental analysis prepared for the CAP and determine GHG impacts in 2020 to be less than cumulatively considerable. While the CAP includes a post-2020 target, it does not currently include sufficient strategies to achieve the goal. Accordingly, projects with operational emissions beyond 2020 cannot tier from the CAP. Since the proposed project will not be complete until 2023, it is not eligible to use the CAP to evaluate full-build emissions. However, consistency with the CAP framework is considered since many of the policies will likely be carried forward by the City to address post-2020 emissions.

Performance-based reductions. Performance-based thresholds are based on a percentage reduction from a projected future condition (for example, reducing future business-as-usual (BAU) emissions by the AB 32 target of 29 percent (below 2020 BAU levels) through a combination of State measures, project design features (e.g., renewable energy), or mitigation). With the Newhall Ranch decision, relating a given project to the achievement of State reduction targets requires adjustments to ARB's statewide BAU model

not only to isolate new development emissions, but also to consider unique geographic conditions that would be required to use the BAU performance-based methodology for a specific project. To date, this type of adjustment to the statewide BAU target has not been formulated and, therefore, is not appropriate for the project's analysis.

Numeric "bright-line" thresholds. The BAAQMD has adopted a threshold of 1,100 metric tons carbon dioxide equivalent (CO_2e) for land use development projects and a threshold of 10,000 metric tons CO_2e for stationary source projects. The land use development threshold is explicitly tied to AB 32 and does not consider deeper reductions that will be required post-2020. Moreover, the threshold is specific to emissions generated by the residential and commercial uses, and does not address emissions from industrial sources. Accordingly, the land use development threshold is not applicable to the proposed project. The BAAQMD's 10,000 metric tons CO_2e threshold is consistent with stationary source thresholds adopted by other air quality management districts throughout the state. The threshold level is intended to capture 95 percent of all GHG emissions from new permit applications from stationary sources in the SFBAAB. The emergency generators included as part of the project would be permitted sources, and as such, the BAAQMD's 10,000 metric ton CO_2e threshold is appropriate for analyzing the significance of emissions generated by the generators. However, the threshold cannot be used to evaluate emissions from other project sources (e.g., building energy consumption).

Compliance with Regulatory Programs. This approach includes an assessment of the project's compliance with regulatory programs designed to reduce GHG emissions from particular activities (e.g., building efficiency, transportation, water usage). To the extent that the project's design features comply with or exceed the regulations adopted by ARB or other State agencies, the City could appropriately rely on their use as showing that the project is reducing emissions consistent with statewide legislation and, thus, that emissions are less than significant. This approach is applicable to the proposed project and used to evaluate non-stationary source GHG emissions.

Efficiency-based thresholds. BAAQMD has adopted efficiency based thresholds for land use development projects. The efficiency-based thresholds are calculated by dividing emissions associated with residential and commercial uses (also termed the "land use sector" in the AB 32 Scoping Plan) within the state (or a certain geographic area) by the sum of jobs and residents within the same geography. The sum of jobs and residents is called the "service population," and a project's service population is defined as the people that work and live within the project site. Because BAAQMD's efficiency-based thresholds are based on the land use sector (residential and commercial uses) and only account for land use-related emissions and residential population and employment, they may be misleading to use for industrial uses projects, and are therefore not applicable to the proposed project.

Based on the available threshold concepts recommended by air districts or other lead agencies and recent case law, GHG impacts from the proposed project's emergency generators would be considered less than significant if emissions are below the BAAQMD's bright-line threshold of 10,000 metric tons CO_2e per year. GHG impacts from all other project emission sources would be considered less than significant if the project is consistent with the City's CAP and applicable regulatory programs and policies adopted by ARB or other California agencies.

4.7.2.2 Overview of GHG Emissions

Construction Emissions

Construction of the project would result in GHG emissions generated by vehicle trips (i.e., construction worker and haul truck trips) and operation of construction equipment. These sources would generate

2,539 metric tons CO_2e over the course of the six-year construction-period. This is equivalent to adding 536 typical passenger vehicles for 1 year. Because construction emissions would cease once construction is complete, they are considered short-term. The BAAQMD CEQA Guidelines do not identify a GHG emission threshold for construction-related emissions. Instead BAAQMD recommends that GHG emissions from construction be quantified and disclosed. The BAAQMD further recommends incorporation of BMPs to reduce GHG emissions during construction, as feasible and applicable. BMPs may include use of alternative-fueled (e.g., biodiesel, 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 or demolition materials.

Operational Emissions

GHG emissions from the project would consist of emissions from vehicle trips to and from the proposed facility and occupancy of data server rooms, including emissions related to the generation of electricity used in the data center building. Approximately 29 employees, including fourteen operations personnel, thirteen security personnel, and two janitors, would be employed at the project site. Security and operations personnel would be employed in shifts, resulting in a maximum of 16 employees on-site in a single day. As discussed in Section 4.16, *Transportation*, there would be a maximum of 410 total daily trips, including vendors, clients, visitors, and employee trips. Data centers are an energy-intensive land use, requiring more electricity than other types of development. The primary function of the proposed data center is to house computer servers, which require electricity and cooling 24 hours a day to operate.

Silicon Valley Power Electricity Generation

Electricity for the project would be provided by SVP. The City currently has ownership interest, or has purchase agreements for nearly 1,079.15 MW of electricity.[42] This capacity far exceeds the City's current peak electricity demand of approximately 522 MW. No new generation peak capacity is necessary to meet the capacity requirements of new construction, or redeveloped facilities within the City to meet the near or projected future demand.

The City 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, the City encourages the use of renewable resources and clean distributed generation, and has seen a significant increase in its applications for large and small rooftop photovoltaics (PV). Demand displaced by customer-based renewable projects is also available to meet new load requests.

The City seeks to meet its RPS through the addition of new renewable resources. SVP has a lower emission rate than the statewide California power mix because it utilizes a much higher portion of renewable sources. A comparison of SVP's and the statewide power mix is shown in Table 4.7-1.

[42] Silicon Valley Power, City of Santa Clara. The Silicon Valley Power Resources Map. Available: <http://www.siliconvalleypower.com/home/showdocument?id=5763>. Accessed: August 11, 2016.

TABLE 4.7-1 COMPARISON OF SVP AND STATEWIDE POWER MIX		
Energy Resources	**2015 SVP Power Mix**	**2015 California Power Mix (for Comparison)**
Eligible Renewable (Biomass & waste, Geothermal, Eligible Hydro, Solar, Wind)	28.6%	21.9%
Coal	8.8%	6.0%
Large Hydro	13.2%	5.4%
Natural Gas	46.2%	44.0%
Nuclear	0.0%	9.2%
Other	0.0%	0.0%
Unspecified sources of power (not traceable to specific sources)	3.2%	13.5%
Total	100.0%	100.0%
Source: California Energy Commission. 2016. Total System Power. Available: <http://www.energy.ca.gov/almanac/electricity_data/total_system_power.html >. Accessed: October 26, 2016; and Silicon Valley Power. No date. Power Content Label. Available: < http://www.siliconvalleypower.com/svp-and-community/about-svp/power-content-label>. Accessed: October 26, 2016.		

SVP's carbon intensity factor for 2016 was calculated as 380 pounds (0.172 metric tons) of CO_2 per megawatt-hour (MWh).[43] SVP's carbon intensity factor for electricity generation will continue to change as SVP's power mix continues to reduce the percentage of electricity produced by coal-fired power plants and increase the use of renewable resources. As noted above, the City and SVP have committed to coal-free and increased large renewables power generation as a part of the City's CAP.

Project Electricity Usage

The projected critical demand for the entire project is 54 MW and the total projected demand is 76 MW.[44] On an annual basis, the project would consume 665,760 MWh per year at full buildout.[45] The project's annual emissions related to electricity use would be about 24 percent less per year by utilizing SVP's power mix versus the California statewide average power mix.

Other Project-Related Emissions

Other sources of emissions include backup generator testing (i.e., stationary sources), water use, waste generation, mobile (vehicle), and area (landscaping) sources. Emissions from backup generator testing would result from the consumption of diesel fuel to test each generator for about 50 hours per year. Water consumption results in indirect emissions from electricity usage for water conveyance and wastewater treatment. Water consumption results in indirect emissions from electricity usage for water conveyance and wastewater treatment. As discussed in Section 4.17, *Utilities and Service Systems*, indoor uses at the project site would generate a potable water demand of approximately 20.7 million gallons of water per year, or 63.7 acre-feet per year, and a recycled water demand of 143.3 million gallons of water per year, or 439.8 acre-feet per year (primarily due to the recycled water use of the proposed cooling towers). Daily

[43] Ramboll Environ US Corporation. 2016. *Air Quality and Greenhouse Gas Technical Report, Vantage Data Centers, 651, 725, 825 Mathew Street, Santa Clara, California, 95050.* November.

[44] Rosendin Electric. 2016. Letter to Nick Steketee. September 14. See Appendix E of this Initial Study.

[45] Ramboll Environ US Corporation. 2016. *Air Quality and Greenhouse Gas Technical Report, Vantage Data Centers, 651, 725, 825 Mathew Street, Santa Clara, California, 95050.* November.

operations at the data center would generate waste, which results in fugitive GHG emissions during decomposition. Mobile emissions associated with employees, clients, and visitors traveling to and from the site were computed in CalEEMod model, assuming a maximum of 410 daily trips.

Summary of GHG Emissions

Emissions from stationary sources (i.e., emergency generator) testing and maintenance are presented in Table 4.7-2.

TABLE 4.7-2
SUMMARY OF ESTIMATED GHG EMISSIONS FROM STATIONARY SOURCES DURING PROJECT OPERATION
(METRIC TONS PER YEAR OF CO_2E)

	Annual Emissions at Full Buildout (2023)	
Source	**Project Emissions Based Upon SVP Electric Power Use** (Metric Tons Per Year of CO_2e)	**Estimated Project Emissions Based Upon California Average Emissions Rate for Electric Power** (Metric Tons Per Year of CO_2e)
Stationary Sources – emergency generators	4,138	4,138
BAAQMD Threshold	10,000	10,000
Exceed Threshold?	No	No

Source: Ramboll Environ US Corporation. 2016. *Air Quality and Greenhouse Gas Technical Report, Vantage Data Centers, 651, 725, 825 Mathew Street, Santa Clara, California, 95050.* November.

Emissions from electricity use, mobile and area sources, and water use and waste generation (i.e., project operation) are provided in Table 4.7-3.

TABLE 4.7-3
SUMMARY OF ESTIMATED GHG EMISSIONS FROM ELECTRICITY USE, MOBILE SOURCES, AREA SOURCES, WATER USE, AND WASTE GENERATION DURING PROJECT OPERATION
(METRIC TONS PER YEAR OF CO_2E)

	Annual Emissions at Full Buildout (2023)	
Source	**Project Emissions Based Upon SVP Electric Power Use** (Metric Tons Per Year of CO_2e)	**Estimated Project Emissions Based Upon California Average Emissions Rate for Electric Power** (Metric Tons Per Year of CO_2e)
Electricity Use	116,848	153,862
Mobile Sources – employees and visitors	435	435
Area Sources – landscaping	<1	<1
Water Use & Wastewater Generation	377	426
Waste Generation	235	235
Total	117,896	154,958

Source: Source: Ramboll Environ US Corporation. 2016. *Air Quality and Greenhouse Gas Technical Report, Vantage Data Centers, 651, 725, 825 Mathew Street, Santa Clara, California, 95050.* November.

As shown in Table 4.7-2, emergency generator testing would generate an additional 4,138 metric ton CO_2e per year. Emissions from the emergency generators are below BAAQMD's stationary source threshold and are therefore considered less than significant.

As shown in Table 4.7-3, operation of the project would generate 117,896 to 154,958 metric tons CO_2e, depending on the power provider. This emissions estimate does not include efficiency measures that would be pursued as part of the project, nor does it reflect implementation of state and local measures to reduce GHG emissions (e.g., SB 350). In order to reduce GHG emissions and reduce the use of energy related to building operations, the project chillers would be installed with variable frequency drives (VFD) to provide efficient operation. The project would comply with all applicable City and State green building measures, including Title 24, Part 6, California Energy Code baseline standard requirements for energy efficiency, based on the 2016 Energy Efficiency Standards requirements, and the 2016 California Green Building Standards Code, commonly referred to as CALGreen (California Code of Regulations, Part 11). In addition, the project would include four electrical vehicle charging stations that would serve nine electrical vehicle parking spots. Water use reduction measures would also be incorporated in the building design, including the use of recycled water in the cooling towers. Table 3.0-2 in Section 3.0, *Project Description,* lists the proposed efficiency features related to mechanical and electrical systems. Table 3.0-3 in Section 3.0, *Project Description,* lists additional energy efficiency measures associated with tenant improvements and water use reduction.

Overview: Power Usage Effectiveness During Operation

Power Usage Effectiveness, or PUE, is a metric used to compare the efficiency of facilities that house computer servers. PUE is defined as the ratio of total facility energy use to Information Technology (IT) (i.e., server) power draw (e.g., PUE = Total Facility Source Energy/ IT Source Energy). For example, a PUE of two, means that the data center or laboratory must draw two watts of electricity for every one watt of power consumed by the IT/server equipment. It is equal to the total energy consumption of a data center (for all fuels) divided by the energy consumption used for the IT equipment. The ideal PUE is one where all power drawn by the facility goes to the IT infrastructure.

Vantage Data Centers, the project applicant, builds and manages data centers for tenants. The principle of Vantage Data Centers is that modern-day data center design should evolve in innovative ways that lead to dramatic gains in energy efficiency. All of these features have an impact on the power usage of a data center. With implementation of the proposed mechanical and electrical design of the building and the anticipated data center occupancy, the PUE will be 1.5[46] at the proposed data center. The Uptime Institute conducted a study in 2014 and concluded that the average data center PUE in that year was 1.7, down from 1.89 in 2011[47]. The project would be below the 2014 average PUE (the most recent year for which data is available), resulting in a more efficient than average facility.

4.7.2.3 Consistency with Plans and Programs

Climate Action Plan

The CAP, which is part of the Santa Clara General Plan, identifies a series of GHG emissions reduction measures to be implemented by development projects that would allow the City to achieve its GHG reduction goals in 2020. The measures center around seven focus areas: coal-free and large renewables,

[46] Rosendin Electric. 2016. Letter to Nick Steketee. September 14.

[47] Uptime Institute. 2014. 2014 Data Center Industry Survey. Available: <https://journal.uptimeinstitute.com/2014-data-center-industry-survey/>.

energy efficiency, water conservation, waste reduction, off-road equipment, transportation and land use, and urban heat island effect.

The CAP includes measures applicable to City government, existing development and new development projects in the City. Based on the discussion of the project's conformance with the applicable reduction measures for new development in the CAP provided below, the project would be consistent with the City's CAP. **(Less Than Significant Impact)**

Energy Efficiency Measures

Measure 2.3, Data centers, calls for completion of a feasibility study of energy efficient practices for new data center projects with an average rack power rating[48] of 15 kilowatts to achieve a PUE of 1.2 or lower.

The proposed project would have an average rack power rating range of 8-10 kilowatts. This would be below the criteria in Measure 2.3, and a formal feasibility study of energy efficient practices and achievement of a PUE of 1.2 or lower is not required.

Water Conservation Measures

Measure 3.1, Urban Water Management Plan targets, calls for a reduction in per capita water use to meet Urban Water Management Plan targets by 2020. As outlined in Table 3.0-3 in Section 3.0, *Project Description*, development standards for water conservation would be applied to increase efficiency in indoor and outdoor water use areas. Furthermore, the project would comply with all applicable City and State water conservation (indoor and outdoor) measures, including Title 24, Part 6, California Energy Code baseline standard requirements for energy efficiency, based on the 2016 Energy Efficiency Standards requirements, and the 2016 California Green Building Standards Code, commonly referred to as CALGreen. Water conservation measures for the project would include the use of:

- site irrigation to be sourced from 100 percent non-potable water;
- use of recycled water in the cooling towers;
- water efficient landscaping with low usage plant material to minimize irrigation requirements will be installed and maintained; and
- ultra-low flow toilets and plumbing fixtures will be installed consistent with CalGreen mandatory measures for water reduction.

Transportation and Land Use Measures

Measure 6.3, Electric Vehicle Parking, calls for the provision of electrical vehicle charging stations in new multi-family residential and nonresidential developments. The project would include four electrical vehicle charging stations that would serve nine electric vehicle parking spots.

Urban Heat Island Effect Measure

Measure 7.2, Urban Cooling, calls for the use of materials to reduce heat gain and mitigate the urban heat island effect. The project is proposing to use a cool roof (a roof with high solar reflectivity), as shown in Table 3.0-2 in Section 3.0, *Project Description.*

[48] 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.

Applicable General Plan Policies

The City adopted the Santa Clara 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 Santa Clara General Plan. In addition to the reduction measures in the Climate Action Plan, the Santa Clara General Plan includes goals and policies to address sustainability (see Appendix 8.13: Sustainability Goals and Policies Matrix in the Santa Clara General Plan) aimed at reducing the City's contribution to GHG emissions. For the project, implementation of policies that increase energy efficiency or reduce energy use would effectively reduce indirect GHG emissions associated with energy generation. The consistency of the project with the applicable land use, air quality, energy, and water policies in the Santa Clara General Plan is analyzed in Table 4.7-4. As shown, the project would be consistent with the applicable sustainability policies in the Santa Clara General Plan. **(Less Than Significant Impact)**

TABLE 4.7-4
PROJECT CONSISTENCY WITH SANTA CLARA GENERAL PLAN SUSTAINABILITY POLICIES

Emission Reduction Policies	Project Consistency
Land Use Policies	
5.3.1-P11: Encourage new developments proposed within a reasonable distance of an existing or proposed recycled water distribution system to utilize recycled water for landscape irrigation, industrial processes, cooling and other appropriate uses to reduce water use consistent with the CAP.	Consistent. The project would utilize recycled water for landscape irrigation and the cooling towers.
5.3.1-P14: Encourage Transportation Demand Management strategies and the provision of bicycle and pedestrian amenities in all new development in order to decrease use of the single-occupant automobile and reduce vehicle miles traveled.	Consistent. The project would include bicycle and pedestrian amenities consistent with the City's requirements.
Air Quality Policies	
5.10.2-P3: Encourage implementation of technological advances that minimize public health hazards and reduce the generation of air pollutants.	Consistent. The project would include four electrical vehicle charging stations.
5.10.2-P4: Encourage measures to reduce GHG emissions to reach 30 percent below 1990 levels by 2020.	Consistent. 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.	Consistent. 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 proposed building would limit water consumption. In addition, the project would have a "Cool Roof" utilizing reflective surfaces to reduce heat gains. Outside Air Economizers (OAE) will be utilized to cool the top floor of the proposed buildings. The OAE controls would be configured to maximize free cooling.
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.	
Water Policies	

TABLE 4.7-4 PROJECT CONSISTENCY WITH SANTA CLARA GENERAL PLAN SUSTAINABILITY POLICIES	
Emission Reduction Policies	**Project Consistency**
Land Use Policies	
5.10.4-P6: Maximize the use of recycled water for construction, maintenance, irrigation and other appropriate applications.	Consistent. The project would utilize recycled water for landscape irrigation and in the cooling towers.

Bay Area 2010 Clean Air Plan

The 2010 CAP includes performance objectives, consistent with the State's climate protection goals under AB 32 and SB 375, designed to reduce emissions of GHG emissions to 1990 levels by 2020 and 40 percent below 1990 levels by 2035. The 2010 CAP identifies a range of TCMs, Land Use and Local Impacts Measures, and Energy and Climate Measures that make up the Clean Air Plan's control strategy for emissions, including GHGs.

Due to the relatively high electrical demand of the proposed data center uses on the project site, energy efficiency measures are included in the design and operation of the proposed on-site electrical and mechanical systems. This is in keeping with the general purpose of Energy Control Measure (ECM)-1 – Energy Efficiency in the 2010 CAP. **(Less Than Significant Impact)**

Plan One Bay Area/ California Senate Bill 375 – Redesigning Communities to Reduce Greenhouse Gases

Under the requirements of SB 375, MTC and ABAG developed a SCS with the adopted *Plan Bay Area* to achieve the Bay Area's regional GHG reduction target. Targets for the MTC in the San Francisco Bay Area, originally adopted in September 2010 by CARB, include a seven percent reduction in GHG per capita from passenger vehicles by 2020 compared to emissions in 2005. The adopted target for 2035 is a 15 percent reduction per capita from passenger vehicles when compared to emissions in 2005. The emission reduction targets are for those associated with land use and transportation strategies only. Approximately 29 employees, including fourteen operations personnel, thirteen security personnel, and two janitors, would be employed at the project site. Security and operations personnel would be employed in shifts, resulting in a maximum of 16 employees on-site on a single day. As discussed in Section 4.16, *Transportation*, the project would generate a maximum of 410 total daily trips, including vendors, clients, visitors, and employee trips. The number of net new project trips would likely be reduced when accounting for the removal of the trips to and from the project site that are currently generated by the approximately 60 existing employees at the project site. Due to the limited number of employees and visitors at the project site as well as the proposed TDM Program, the project would have less-than-significant traffic impacts during operation. Thus, the project would not contribute to a substantial increase in passenger vehicle travel within the region. **(Less Than Significant Impact)**

Assembly Bill 32 Scoping Plan

California adopted AB 32 in 2006, which codified the State's GHG emissions reduction targets for the future. CARB adopted the AB 32 Scoping Plan as a framework for achieving AB 32. The AB 32 Scoping Plan outlines a series of technologically feasible and cost-effective measures to reduce statewide GHG emissions, including (1) expanding energy and water efficiency programs (e.g., Title 24, Senate Bill X7-7), (2) increasing electricity production from renewable resources to at least 33 percent of the statewide

electricity mix, (3) reducing landfilled waste (e.g., AB 341) (4) increasing automobile efficiency, (5) implementing the Low Carbon Fuel Standard (LCFS), and (6) developing the Cap-and-Trade Program. As discussed above, the vast majority of the project's GHG emissions would result from energy use. Multiple AB 32 Scoping Plan measures address GHG emissions from energy. For example, the Cap-and-Trade Program, through the regulation of upstream electricity producers, will account for GHG emissions from the project and require emissions from covered sectors to be reduced by the amount needed to achieve AB 32's 2020 goal. Similarly, the State's Renewables Portfolio Standard mandates that the State's utilities dramatically increase (to 33 percent by 2020) the percentage of electricity sales that are generated by eligible renewable generation sources. Together, these elements of the AB 32 Scoping Plan will ensure that overall statewide emissions will be decreased to the extent necessary to achieve AB 32's emissions reduction goals. As discussed above, the project includes energy efficiency components that will support implementation of the AB 32 Scoping Plan policies. The project also includes various policies to reduce water consumption, increase recycling, and promote electric vehicles. Accordingly, the project would not impede implementation of any of these elements in 2020 and, therefore, the project would comply with the AB 32 Scoping Plan. **(Less Than Significant Impact)**

Other Adopted Regulatory Programs

Policies outlined in the AB 32 Scoping Plan capture much of the state's framework for reducing GHG emissions. These programs will likely be extended beyond 2020 to address the State's 2030 GHG reduction goal. Senate Bill 350, which was adopted after preparation of the Assembly Bill 32 Scoping Plan, will also support California's long-term climate change objectives. Senate Bill 350 extends the State's Renewables Portfolio Standard from 33 percent in 2020 to 50 percent in 2030 and requires a doubling of statewide energy efficiency. In 2015, SVP's power mix included approximately 28.6 percent renewable power and the entire California electrical grid included approximately 21.9 percent renewable power (see Table 4.7-1). There is no requirement that the fraction of renewable power increase linearly between 2020 and 2030, so estimating the operational GHG emissions in 2023 to account for the likely increasing renewable power in the supply is speculative. However, because the 2030 RPS is 50 percent in 2030, it is reasonable to assume that GHG emissions generated by project electricity consumption will continue to drop and will be consistent with California's climate goals for 2030 and Senate Bill 350. This point is particularly relevant to the project since the vast majority of its estimated GHG emissions would come from electricity consumption. **(Less Than Significant Impact)**

4.7.3 Conclusion

With implementation of the efficiency measures to be implemented with the project and in combination with the green power mix utilized by SVP, GHG emissions related to the proposed project would not conflict with the Santa Clara CAP or other plans, policies or regulations adopted for the purpose of reducing the emissions of GHG. Stationary source emissions would also be less than BAAQMD's bright-line threshold of 10,000 metric tons CO_2e per year. (**Less Than Significant Impact**)

4.8 HAZARDS AND HAZARDOUS MATERIALS

Unless otherwise noted, the following discussion of potential impacts related to hazards and hazardous materials is based on the Phase I Environmental Assessment (ESA) prepared for the project site, which is included in Appendix F of this Initial Study.[49] The Phase I ESA consisted of a site and vicinity reconnaissance; review of historical maps and photographs, environmental databases, and information

[49] TRC. 2016. *Phase I Environmental Site Assessment, 651, 725, and 825 Mathew Street, Santa Clara, California.* July 22.

provided by the Vantage Data Centers (including previous environmental reports/documentation); soil and groundwater sampling, taken at fifteen boring locations on the project site; and interviews with site representatives.

4.8.1 Setting

4.8.1.1 Background Information

Hazardous materials encompass a wide range of substances, some of which are naturally-occurring and some of which are man-made. Examples of hazardous materials include pesticides, herbicides, petroleum products, metals (e.g., lead, mercury, arsenic), asbestos and chemical compounds used in manufacturing. Determining if such substances are present on or near project sites is important because exposure to hazardous materials above certain thresholds can result in adverse health effects on humans, as well as harm to plants and wildlife.

Due to the fact that these substances have properties that, above certain thresholds, are toxic to humans and/or plants and wildlife in the environment, there are multiple regulatory programs in place that are designed to minimize the chance for unintended releases and/or exposures to occur. Other programs establish remediation requirements for sites where contamination has occurred.

Hazardous Materials Use and Storage

Within the City of Santa Clara, a number of local, State, and federal regulations govern the use, transport, and storage of hazardous materials. A Hazardous Materials Business Plan is generally required of any facility which generates any quantity of hazardous waste or which handles hazardous materials in amounts greater than 55 gallons for liquids, 500 pounds for solids, and 200 cubic feet for compressed gases. The implementation and enforcement of these local, State and federal regulations regarding the use, storage and transport of hazardous materials (including setbacks for flammable storage from property lines) reduce the potential for impacts to off-site land uses, in the event of an accidental release.

4.8.1.2 Project Site and Off-Site Conditions

Historical and Current Uses of the Project Site

A land use history of the site and surrounding area was compiled based on aerial photographs, topographic maps, building records, local municipal records, an environmental database report, City directories, and interviews with site representatives. Based on a review of these sources, the project site was undeveloped until approximately 1949, after which it was developed for industrial uses. The westernmost portion of the project site (APN 224-40-011 located at 825 Mathew Street) was developed with a single story painter's warehouse in 1956 by Bucher SW & Son painters, which existed on-site until 1982. The central portion of the project site is (APN 224-40-002 located at 725 Mathew Street) was initially developed with several warehouse structures as early as 1946, and between 1961 and 1991 was the site of a tomato paste manufacturing facility operated by Gangi Bros Packing Company. Since 1991, this portion of the project site has served as storage for a fruit manufacturer, a furniture company; a heating, ventilation and air conditioning (HVAC) contractor; and vehicle storage. From 1948 through the present day, the easternmost portion of the project site (APN 224-40-001 located at 651 Mathew Street) has been the site of a food processing facility operated by Diana Fruit Company Inc. for fruit processing. The railroad tracks east of the project site were present as early as 1889, while the railroad track spur adjacent to the northern portion of the project site was built by 1948.

Historical and Current Uses of Surrounding Properties

The earliest known development of properties surrounding the project site is the Southern Pacific Railroad, which is located east of the project site and has been operational since at least 1889. The surrounding properties to the north, south, and west were in agricultural use in the 1930s and 1940s, and were subdivided into industrial warehouses, manufacturing facilities, and commercial buildings in the 1950s. In 2005, an electrical substation was built south of the project site across Mathew Street.

4.8.1.3 On-Site Sources of Contamination

Site Reconnaissance

As part of the preparation of the Phase I ESA, a site reconnaissance of accessible areas on and around the property site to evaluate current project site conditions and potential environmental concerns. The site reconnaissance was completed for APN 224-40-002 and 224-40-011 on June 28, 2016 and for APN 224-40-001 on July 1, 2016. Hazardous substances stored at APN 224-40-002 include small quantities of paints and chemicals for the furniture warehouse; lubricating oil and equipment maintenance fluids; and petroleum storage. Hazardous substances observed during reconnaissance at APN 224-40-001 include food processing chemicals, lubricants, and sanitation chemicals. However, no evidence of release was observed for any of the abovementioned substances.

Regulatory Records Search

An environmental database report identified 226 properties/listings including the project site and/or adjoining properties. The project site and/or adjoining properties listed on state and federal databases are identified in the Phase I ESA. The two on-site records identified during the regulatory records search are as follows:

- 651 Mathew Street (APN 224-40-001)—a 2,000 gallon diesel underground storage tank was historically present on the site and reportedly leaked 30 gallons of diesel fuel during tank removal and replacement. The case was closed in 2005 after removal of the tank and soil, including 400 gallons of diesel fuel impacted groundwater.
- 725 Mathew Street (APN 224-40-002)—after the detection of total petroleum hydrocarbons as gasoline (TPHg) and benzene in a groundwater sample in June 1991, two 3,000 gallon gasoline underground storage tanks and one 4,000 gallon heating oil underground storage tank were removed, as well as adjacent soils. Samples were taken and non-detectable results were obtained from adjacent monitoring wells in 1995, and the case was closed in 1996.

Additionally, the following four environmental conditions associated with the project site are identified in the Phase I ESA:

- Recognized Environmental Conditions (RECs): Low concentrations of Polynuclear Aromatics (PNAs) were detected in two soil samples collected from two borings located in the former railroad track alignment. Although the detected PNA concentrations do not exceed respective commercial or construction worker screening criteria, some residual PNA concentrations in soil exceed residential screening criteria, and are therefore considered a REC.
- Controlled Recognized Environmental Conditions (CRECs): Historical documents indicate that 651 Mathew Street was formerly a leaking underground storage tank (LUST) closure site dating back to the removal of the 2,000-gallon diesel UST in 1992 and replaced with a fiberglass walled UST, which was removed in 2005. The site received closure from the Santa Clara Valley Water District Local Oversight Program (SCVWD LOP) in 2005, after removal of the tank and soil, including 400 gallons

of diesel fuel impacted groundwater. Closure documents indicate that minor residual petroleum hydrocarbon contamination remains in groundwater (84 parts per billion) at the site. The 2005 closure letter indicated that "The County and the appropriate planning and building department shall be notified prior to any changes in land use, grading activities, excavation, and installation of water wells." This notification requirement to a regulatory agency is considered to be a CREC.

- Historical Recognized Environmental Condition (HREC): Historical documents indicate that 725 Mathew Street was formerly a LUST closure site dating back to the removal of two 3,000-gallon gasoline USTs and one 4,000-gallon heating oil UST in 1993, including 200 cubic yards of soil from the heating oil UST pit. The site received closure from the SCVWD LOP in 1995. The historical presence of USTs at the site is considered an HREC.
- de minimis conditions: During a site visit conducted as part of the Phase I ESA, multiple stains were observed on the concrete inside the former tomato cannery building at 745 Mathew Street. Because the stains were observed on the concrete, no odors were noted, and the site representative was unaware of any specific events that may have caused the stains, the stains are considered a de minimis condition.

Asbestos-Containing Materials and Lead-Based Paint

Because construction of the existing buildings on the project site occurred prior to 1980, building materials containing asbestos (ACMs) may be present. According to the Phase I ESA, some of the existing buildings on the project site were constructed in the late 1940s and in the 1950s, which is before 1978 when lead was banned as an additive in paint. Thus, lead-based paint (LBP) may be present on building materials.

4.8.1.4 Off-Site Sources of Contamination

According to the Phase I ESA, potential off-site sources of contamination include:

- 600 Mathew Street—a leaking underground storage tank was reported in 1992. Five underground storage tanks with gasoline, diesel, motor oil, and waste oil were removed by 1996, in addition to approximately 7,000 tons of soil and 20,000 gallons of TPH-gasoline impacted groundwater. The case was closed in 2000. However, residual soil and groundwater contamination were indicated as remaining in the vicinity of the former underground storage tanks. The potential for contamination of the project site from this adjacent site is considered to be low.
- 265 Lafayette Street—a LUST case was reported at a commercial fueling station in 1984. The product was removed from groundwater in 1998 and groundwater monitoring was conducted. The case was closed in 2006. The potential for contamination of the project site from this adjacent site is considered to be low.

4.8.2 Environmental Checklist and Discussion of Impacts

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the Project:				
1. Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	☐	☐	☒	☐

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the Project:				
2. Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	☐	☒	☐	☐
3. Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	☐	☐	☐	☒
4. Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, will it create a significant hazard to the public or the environment?	☐	☐	☒	☐
5. For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, will the project result in a safety hazard for people residing or working in the project area?	☐	☐	☒	☐
6. For a project within the vicinity of a private airstrip, will the project result in a safety hazard for people residing or working in the project area?	☐	☐	☐	☒
7. Impair implementation of, or physically interfere with, an adopted emergency response plan or emergency evacuation plan?	☐	☐	☐	☒
8. Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?	☐	☐	☐	☒

4.8.2.1 Impacts from On-Site Contamination

Impacts from Proposed Hazardous Materials Storage

The project proposes to construct two four-story data center buildings (Buildings A and B). The buildings would include four data halls to store computer systems and servers, as well as support spaces consisting of electrical rooms, battery rooms, ancillary server rooms, lobbies, meeting rooms, break rooms, shipping/receiving and office space. Buildings A and B would each include one 15-megawatt (MW) data room and one 12-MW data room. The data rooms on each of the upper floors would provide space for computer servers for private clients in secure and environmentally controlled areas, and client storage space. The shipping and receiving areas within the western portion of the Building A and the eastern portion of Building B would be used for loading and unloading servers, equipment, and supplies. The yards located throughout the project site would house 32 emergency generators that would provide backup power to the data center buildings in the event that an equipment failure or other conditions result

in an interruption to the electric power provided by SVP, the electricity provider that serves the project site.

Hazardous material storage at the proposed data center would be regulated under local, State, and federal regulations. Conformance with relevant laws and regulations would minimize the likelihood of hazardous materials releases from the proposed data modules and generators by the project. As a result, the project would not create a significant impact on the environment. **(Less Than Significant Impact)**

Impacts from On-Site Soil and Groundwater Contamination

According to the Phase I ESA, except for relatively low concentrations of PNAs detected in two of the fifteen soil samples, analyses of soil samples collected from the project site detected no chemical concentrations exceeding residential, commercial, or construction worker screening criteria. The detected PNA concentrations were identified in soil samples collected from the former railroad track alignment and do not exceed respective commercial or construction worker screening criteria. The detected levels do exceed residential screening criteria; however, the project does not propose residential uses. Based on the findings of the Phase I ESA, shallow soil excavated from the project site is considered nonhazardous. Groundwater analyses detected no hydrocarbons or VOCs exceeding respective screening level criteria. Former USTs have been removed from the project site, and all requisite closures have been issued. Follow-up investigation of soil and groundwater conditions near the former USTs detected no significant residual petroleum hydrocarbon impacts. As a result, the project would not create a significant impact on the environment. **(Less Than Significant Impact)**

Demolition of Existing Buildings

Due to the age of the existing buildings, ACMs and LBP may occur in the building materials. Demolition of sites with ACMs and LBPs could generate hazardous wastes and expose construction workers to hazardous materials.

Impact HAZ-1: The demolition of the existing buildings on-site could result in a significant impact from exposure (of on-site workers) to asbestos and lead-based paint. **(Significant Impact)**

Mitigation Measures:

The following mitigation measures would reduce hazardous materials impacts related to ACMs, asbestos-containing construction materials (ACCMs), and lead-based paint LBP.

MM HAZ-1.1: In accordance with federal, state, and local regulations, ACM and ACCM must be removed by a licensed asbestos abatement contractor from the structures prior to renovation/demolition.

MM HAZ-1.2: Disturbance to unidentified suspect ACMs not mentioned in this report should be avoided until a certified asbestos building inspector can survey and assess the disposition of such materials.

MM HAZ-1.3: During demolition activities, all building materials containing LBP should be performed by a contractor who has the experience and expertise in LBP abatement, handling, and disposal. Construction work where an employee may be occupationally exposed to lead in any amount must comply with 29 CFR 1926.62 (8 CCR 1532.1 in California). Additionally, lead containing waste must

be characterized and profiled for proper disposal according to applicable federal, State and local regulations.

Implementation of the identified mitigation measures would reduce hazardous materials impacts related to ACMs and LBP to a less-than-significant level. **(Less Than Significant Impact with Mitigation)**

4.8.2.2 Impacts from Off-Site Contamination

Based on the Phase I ESA, the potential for contamination to migrate to the project site from other properties is considered low. No hazardous material spill incidents have been reported in the project vicinity that would be likely to significantly impact the project site as migrating groundwater plumes. Further, the project does not propose groundwater extraction activities. As a result, the project would not create a significant impact on the environment. **(Less Than Significant Impact)**

4.8.2.3 Hazardous Materials Impacts

Operation of the data center would likely include the on-site use and storage of cleaning supplies and maintenance chemicals in small quantities. Operation of the proposed substation could include the on-site use of materials typically used in substations (e.g., mineral oil, substation batteries, and sulfur hexafluoride gas). No other hazardous materials would be used or stored on-site. The substation would meet federal Spill Prevention, Control, and Countermeasures (SPCC) requirements, as outlined in Title 40 of the Code of Federal Regulations, Part 112. Pursuant to United States Environmental Protection Agency (U.S. EPA) requirements, substation equipment and any required spill containment facilities would be inspected on a monthly basis. The small quantities of cleaning supplies, maintenance chemicals, and materials that would be used on-site would not pose a risk to on-site workers or adjacent land uses. **(Less Than Significant Impact)**

4.8.2.4 Other Hazards

Airport Safety Hazards

The project site is located approximately 0.3 mile west of the Norman Y. Mineta San Jose International Airport, and is within the Norman Y. Mineta San Jose International Airport Influence Area. The height of the proposed buildings to the top of the metal screen would be approximately 107.5 feet above ground surface. Airport safety hazards associated with the Norman Y. Mineta San Jose International Airport were evaluated according to airport safety zones and Federal Aviation Regulations Part 77 airspace surfaces.[50] The project site is outside of all airport safety zones with the exception of the traffic pattern zone, which restricts development types with high concentrations of people (e.g. sports stadiums). Additionally, the proposed project would not intrude upon the Part 77 airspace surface for the Norman Y. Mineta San Jose International Airport, which establishes a maximum structure height of 212 feet (above mean sea level) for the project site.[51] In addition, in accordance with Federal Aviation Administration (FAA) requirements, the project applicant would complete and submit all necessary notices and documentation to the FAA to obtain the necessary approvals for construction in compliance with FAA's Notice of Proposed Construction requirements. Due to compliance with applicable regulations set forth by the

[50] A Part 77 airspace surface is an imaginary surface of a takeoff and landing area of an airport stablished for the airport under 14 CFR Part 77.24 as a means to identify objects that are obstructions to air navigation.

[51] Santa Clara County Airport Land Use Commission. 2011. *Norman Y. Mineta San Jose International Airport Comprehensive Land Use Plan.* Available: <https://www.sccgov.org/sites/dpd/DocsForms/Documents/ALUC_20110525_SJC_CLUP.pdf >. Accessed: September 26, 2016.

Norman Y. Mineta San Jose International Airport and the FAA, it would not increase risks to aircraft operations or to individuals in the vicinity of the airport. **(Less than Significant Impact)**

Emergency Response

The City's Emergency Operations Plan, adopted on June 21, 2016, provides an all hazard, all risk framework for collaboration among responsible entities and coordination of emergency activities during large-scale incidents in the City. The City of Santa Clara's primary Emergency Operations Center (EOC) is located adjacent to the Santa Clara Police Department (SCPD) firing range. The alternate EOC is the Fire Department Training Center Classroom. In area-wide emergencies, one or more Incident Command Posts may be established to assist in managing emergency operations. In the event of an emergency, law enforcement (e.g., the SCPD) will establish evacuation routes in collaboration with other City departments as needed.

The project would demolish existing buildings and existing surface parking and construct two new four-story data centers with supporting parking and infrastructure improvements. Vehicle ingress and egress would be provided by four new gated driveways along Mathew Street. There would be a 26-foot wide loop road around the project site for fire access and general circulation. During project construction, traffic levels would experience a minimal increase that is not expected to degrade traffic performance significantly. Emergency response access during the construction period would not be significantly impeded. The project would not involve the development of structures that could potentially impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan. No streets would be closed, rerouted, or substantially altered. The project does not involve the addition of large numbers of people to the local area who could increase demand during a potential evacuation. Thus, the project would not interfere with the coordination of the City's Emergency Operations Plan at the EOC or alternate EOC nor would the project interfere with any evacuation routes. Adequate emergency access to the project site and surrounding industrial area would be maintained, and the project would not interfere with the City's emergency operations plan or any statewide emergency response or evacuation plans. **(No Impact)**

Wildfires

The project site is surrounded by urban development in the City of Santa Clara, and is not located in the vicinity of wildlands. The City of Santa Clara is not identified to be within a State of California Fire Hazard Severity Zone at the wildland and urban interface.[52] As a result, there would be no risk of exposing people or structures to a significant risk of loss, injury or death involving wildland fires. **(No Impact)**

Schools

There are no schools located within one-quarter mile of the project site. The closest school to the project site is Scott Lane Elementary School at 1925 Scott Boulevard, 0.5 mile southwest of the project site. Hazardous materials emissions or hazardous materials handling during project construction would not have significant impacts on schools. **(No Impact)**

[52] California Department of Forestry and Fire Protection. 2008. *Santa Clara County Very High Fire Hazard Severity Zones in Local Responsibility Area.* Available: <http://frap.fire.ca.gov/webdata/maps/santa_clara/fhszl_map.43.pdf>. Accessed September 26, 2016.

4.8.3 Conclusion

With implementation of the proposed mitigation measures, the project would result in a less-than-significant impact on hazardous materials. **(Less Than Significant with Mitigation)**

4.9 HYDROLOGY AND WATER QUALITY

4.9.1 Setting

4.9.1.1 Flooding

According to the Federal Emergency Management Agency's (FEMA) Flood Insurance Rate Map (FIRM), the project site is located within Zone X. Zone X is defined as areas of 0.2 percent annual chance of flood, areas of one percent chance of annual 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.[53] The existing elevation of the project site is approximately 52 feet above mean sea level (amsl).[54] In addition, the project site is not within an area mapped as vulnerable to sea level rise in the Santa Clara General Plan.[55]

4.9.1.2 Inundation and Dam Failure Hazards

The nearest waterways are the highly disturbed San Tomas Aquino Creek, approximately 1.2 miles west of the project site, and the Guadalupe River, approximately 1.2 miles east of the project site. There are no dams or levee systems in the area within the vicinity of the project site; however the project site is within the dam failure inundation area for the Lexington Reservoir (Leniham Dam).[56] The Lexington Reservoir is located approximately 17 miles south of the site adjacent to Alma Bridge Road and State Route 17 in the Santa Cruz Mountains.

In the ocean, seismically-induced waves are caused by displacement of the sea floor by a submarine earthquake and are called tsunamis. Seiches are waves produced in a confined body of water such as a lake or reservoir by earthquake ground shaking or landsliding. Seiches are possible at reservoir, lake or pond sites. The project site is not located near a large body of water and is not near the ocean; therefore, the site is not subject to inundation by seiche or tsunami.[57]

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53 Kier & Wright Civil Engineers & Surveyors, Inc., 2016. *Vantage Data Center Due Diligence Report.* July 20, 2016.

54 TRC. 2016. *Phase I Environmental Site Assessment, 651, 725, and 825 Mathew Street, Santa Clara, California.* July 22.

55 City of Santa Clara. 2014. *City of Santa Clara 2010-2035 General Plan.* Updated December 9. Available: http://santaclaraca.gov/government/departments/planning-inspection/planning-division/general-plan. Accessed: September 27, 2016.

56 Santa Clara Valley Water District. 1995. *Inundation Map of Lexington Dam, San Jose West Quadrangle. March.* Available: http://www.valleywater.org/uploadedFiles/Services/CleanReliableWater/WhereDoesYourWaterComeFrom/Reservoirs/Lexington/Lenihan%20Dam%201995%20FIM%20Sheet%202%20of%204.pdf?n=8335. Accessed: December 1, 2016.

57 California Emergency Management Agency, California Geological Survey, and University of Southern California. 2009. *Tsunami Inundation Map for Emergency Planning, State of California, County of Santa Clara, Milpitas Quadrangle.* July. Available: http://www.conservation.ca.gov/cgs/geologic_hazards/Tsunami/Inundation_Maps/SantaClara/Documents/Tsunami_Inundation_Milpitas_Quad_SantaClara.pdf. Accessed: September 27, 2016.

4.9.1.3 Storm Drainage System

The City of Santa Clara owns and maintains the municipal storm drainage system in the vicinity of the project site. The City's storm drain system consists of curb inlets that collect and channel surface water, from rainfall and other sources, into a series of pipelines beneath City roadways The project site drains by a combination of surface flow and underground pipes (including 6-inch pipes and a 12-inch lateral) towards Mathew Street and ultimately discharges into a 33-inch storm drain under Mathew Street. The storm water is conveyed through underground pipelines to the channelized creeks within the City, such as San Tomas Aquino Creek, which then direct flow into the San Francisco Bay. As shown in Table 4.9-1, approximately 96 percent of the drainage areas that correspond with the proposed construction areas on the project site (i.e., within the approximate location of the proposed buildings and substation) are currently covered with impervious surfaces.

4.9.1.4 Groundwater

The Santa Clara Valley groundwater basin is divided into two interconnected subbasins that transmit, filter, and store water. The Santa Clara Valley Subbasin in the northern part of Santa Clara County underlies the project site. A confined zone within the northern areas of the subbasin is overlaid with a series of clay layers resulting in a low permeability zone.[58]

Seasonal fluctuations, drainage patterns, and other factors can affect the groundwater level. Based on the *Seismic hazard Zone Report 058* prepared by the Department of Conservation for San Jose West 7.5-Minute Quadrangle (2002), the historic shallowest depth to groundwater in the general site area is less than 10 feet bgs. According to the *Geotechnical Investigation,* groundwater was encountered between 6 to 11 feet below grade at the project site.[59] According to recent pore pressure dissipation tests conducted at the project site, groundwater was encountered between depths of 0.5 to 6.7 feet below grade at the project site.

4.9.1.5 Water Quality

As previously discussed, stormwater from the project site drains into channelized creeks within the City, such as San Tomas Aquino Creek. The water quality of San Tomas Aquino Creek and other creeks is directly affected by pollutants contained in storm water runoff from a variety of urban and non-urban uses. Stormwater from urban uses contains metals, pesticides, herbicides, and other contaminants, including oil, grease, asbestos, lead, and animal wastes. A 9-mile portion of San Tomas Aquino Creek south of the project site is currently listed on the U.S. EPA's Section 303(d) Listed Waters for California for trash.[60]

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58 Santa Clara Valley Water District. 2012. *Groundwater Management Plan.* Available: http://www.valleywater.org/Services/Clean_Reliable_Water/Where_Does_Your_Water_Come_From/Groundwater/Groundwater_Management/2012_Groundwater_Management_Plan.aspx. Accessed: September 27, 2016.

59 Murray Engineers. 2016. *Geotechnical Investigation, Vantage Data Centers, 651, 725, 825 Mathew Street, Santa Clara, California, 95050.* November.

60 State Water Resources Control Board. 2010. Impaired Water Bodies: California 303(d) Listed Waters. Available: http://www.waterboards.ca.gov/water_issues/programs/tmdl/integrated2010.shtml. Accessed: July 29, 2016. Note that San Tomas Aquino Creek is referred to as San Tomas Aquinas Creek in the California 303(d) list.

Regulatory Framework

The Federal Clean Water Act and California's Porter-Cologne Water Quality Control Act are the primary laws related to water quality. Regulations set forth by the U.S. EPA and the State Water Resources Control Board (SWRCB) have been developed to fulfill the requirements of this legislation. U.S. EPA's regulations include the National Pollutant Discharge Elimination System (NPDES) permit program, which controls sources that discharge pollutants into waters of the United States (e.g., streams, lakes, bays, etc.). These regulations are implemented at the regional level by water quality control boards, which for the Santa Clara area is the San Francisco Bay RWQCB.

NPDES Permit Programs

The State Water Resources Control Board has implemented a NPDES General Construction Permit for the State of California. For projects disturbing one acre or more of soil, a Notice of Intent (NOI) and Storm Water Pollution Prevention Plan (SWPPP) must be prepared prior to commencement of construction.

Municipal Regional Stormwater

The San Francisco Bay RWQCB has issued a Municipal Regional Stormwater NPDES Permit (Permit Number CAS612008). The 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 sf are required to design and construct stormwater treatment controls to treat post-construction stormwater runoff. Amendments to the MRP require all of the post-construction runoff 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, implement the provisions of the Municipal NPDES permit.

In addition to water quality controls, the Municipal NPDES permit requires all new and redevelopment projects that create or replace one acre or more of impervious surface to manage development-related increases in peak runoff 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 catchments areas that are greater than or equal to 65 percent impervious (per the City of Santa Clara Hydromodification Management Applicability Map). The project site is located in a catchment area that is greater than or equal to 65 percent impervious; thus, the project site is not subject to the hydromodification requirements of the Municipal NPDES permit.[61]

Impaired Surface Water Bodies

Under Section 303(d) of the 1972 Clean Water Act, states are required to identify impaired surface water bodies and develop total maximum daily loads (TMDLs) for contaminants of concern.[62] The TMDL is the quantity of pollutant that can be safely 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

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61 Santa Clara Valley Urban Runoff Pollution Prevention Program. 2010. *HMP Applicability Map City of Santa Clara*. November. Available: <http://www.scvurppp-w2k.com/HMP_app_maps/Santa_Clara_HMP_Map.pdf>. Accessed: September 30, 2016.

62 State Water Resources Control Board. n.d. Total Maximum Daily Load Program. Available: <http://www.swrcb.ca.gov/water_issues/programs/tmdl/303d_lists2006_approved.shtml>. Accessed: September 30, 2016.

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. As previously discussed, a 9-mile portion of San Tomas Aquino Creek south of the project site is currently listed on the U.S. EPA's Section 303(d) Listed Waters for California for trash.

4.9.2 Environmental Checklist and Discussion of Impacts

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the Project:				
1. Violate any water quality standards or waste discharge requirements?	☐	☐	☒	☐
2. Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there will be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells will drop to a level which will not support existing land uses or planned uses for which permits have been granted)?	☐	☐	☒	☐
3. Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which will result in substantial erosion or siltation on- or off-site?	☐	☐	☒	☐
4. Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which will result in flooding on-or off-site?	☐	☐	☒	☐
5. Create or contribute runoff water which will exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?	☐	☐	☒	☐
6. Otherwise substantially degrade water quality?	☐	☒	☐	☐
7. Place housing within a 100-year flood hazard area as mapped on a Federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?	☐	☐	☐	☒
8. Place within a 100-year flood hazard area structures which will impede or redirect flood flows?	☐	☐	☐	☒
9. Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?	☐	☐	☐	☒
10. Inundation by seiche, tsunami, or mudflow?	☐	☐	☐	☒

As discussed in Section 4.3, *Air Quality*, the California Supreme Court concluded in the *CBIA v. BAAQMD* decision that "CEQA generally does not require an analysis of how existing environmental conditions will impact a project's future users or residents." With this ruling, CEQA no longer considers the impact of the environment on a project (such as the impact of existing flooding hazards on new project receptors) to be an impact requiring consideration under CEQA. Therefore, the following discussions of flooding and sea level rise are provided for informational purposes only.

4.9.2.1 Groundwater

As shown in Table 4.9-1, approximately 96 percent of the project site is currently covered with impervious surfaces. Therefore, the project site does not currently contribute to substantial recharging of the groundwater aquifers used as water supply. As previously discussed, the historic shallowest depth to groundwater in the general site area is less than 10 feet bgs. According to the *Geotechnical Investigation*, groundwater was encountered between 6 to 11 feet below grade at the project site and groundwater was encountered between depths of 0.5 to 6.7 feet below grade at the project site according to recent pore pressure dissipation tests conducted at the project site. Ground-disturbing activities would include surface grading, trenching for utilities, and the potential installation of piles or other ground improvements to support the foundations of the buildings. While temporary dewatering of perched groundwater may be required during construction, the project does not propose permanent groundwater extraction activities. Therefore, the project would not deplete groundwater supplies or interfere with groundwater flow or expose any aquifers. **(Less Than Significant Impact)**

4.9.2.2 Storm Drainage

Stormwater on site would be treated with recessed biotreatment ponds, which would be located north and south of Building A, north and east of Building B, and west of the driveway along the west side of the project site.[63] These areas would filter and treat stormwater before draining into the City of Santa Clara stormwater system. On-site drainage facilities would be designed to meet City of Santa Clara standards and would drain to the existing storm drain system.

Table 4.9-1 provides a breakdown of the pervious and impervious surfaces on the project site under both existing and project conditions. As shown, as a result of implementation of the project, impervious surfaces at the project site would decrease from 374,234 sf (96 percent of the project site) to 290,627 (74 percent of the project site). Thus, implementation of the project would result in an approximately 22 percent decrease in impervious surfaces at the project site.

No increase in impervious surface at the project site would occur and, with implementation of the SWPPP (discussed below), redevelopment of the site would not cause any increase in stormwater runoff that would exceed the capacity of the existing storm drainage system. In addition, the Municipal NPDES permit requires that redevelopment not result in a net increase in stormwater flow exiting the project site. As a result, runoff from the project site would not exceed the capacity of the local drainage system. **(Less Than Significant Impact)**

[63] CAC Architects. 2016. *McLaren Project Design Drawings, Planning Submittal*. September 30.

TABLE 4.9-1 EXISTING AND PROPOSED PERVIOUS AND IMPERVIOUS SURFACES ON-SITE						
Site Surface	**Existing/Pre-Construction (sf)**	**%**	**Project/Post-Construction (sf)**	**%**	**Difference (sf)**	**%**
Impervious Surfaces						
Roof Area	167,228	43	112,277	28	-54,951	-15
Parking	196,362	51	131,915	34	-64,447	-17
Sidewalk and Streets	10,644	2	46,435	12	35,791	10
Total Impervious Surfaces	*374,234*	*96*	*290,627*	*74*	-83,607	*-22*
Pervious Surfaces						
Landscaping	16,667	4	100,274	26	+83,607	22
Total						
Total Area (Impervious + Pervious)	*390,901*	*100.0*	*390,901*	*100.0*	--	--
Source: CAC Architects. 2016.						

4.9.2.3 Water Quality

Construction Impacts

Implementation of the project would require removal of the existing pavement and grading of the project site. Demolition and construction activities would temporarily increase the amount of debris onsite and grading activities could increase erosion and sedimentation that could be carried by runoff into natural waterways. Construction activities on the project site would temporarily generate dust, sediment, litter, oil, paint, and other pollutants that could contaminate runoff from the site. This could result in a temporary increase in pollutants in stormwater runoff to local waterways.

Impact HYDRO-1: Construction activities could temporarily increase pollutant loads in stormwater runoff. **(Significant Impact)**

Mitigation Measures:

The following mitigation measures will reduce water quality impacts during construction.

MM HYDRO-1.1: Prior to construction of the project, the City shall require the project applicant and/or contractors for the project to submit a Storm Water Pollution Prevention Plan (SWPPP) and a Notice of Intent (NOI) to the State of California Water Resource Quality Control Board to control the discharge of storm water pollutants including sediments associated with construction activities. Along with these documents, the project applicant may also be required to prepare an Erosion Control Plan. The Erosion Control Plan may include Best Management Practices (BMPs) as specified in the California Storm Water Best Management Practice Handbook (such as silt fences/straw waddles around the perimeter of the site, regular street cleaning, and inlet protection) for reducing impacts on the

City's storm drainage system from construction activities. The SWPPP shall include control measures during the construction period for:

- Soil stabilization practices,
- Sediment control practices,
- Sediment tracking control practices,
- Wind erosion control practices, and
- Non-storm water management and waste management and disposal control practices.

MM HYDRO-1.2: Prior to issuance of a grading permit, the project applicant and/or contractors shall be required to submit copies of the NOI and Erosion Control Plan (if required) to the Department of Public Works. The project applicant and/or contractors shall also be required to maintain a copy of the most current SWPPP on-site and provide a copy to any City representative or inspector on demand.

MM HYDRO-1.3: The project shall comply with City of Santa Clara ordinances, including erosion- and dust-control during site preparation and grading, and maintaining adjacent streets free of dirt and mud during construction.

MM HYDRO-1.4: The project shall comply with the municipal NPDES permit issued to the City of Santa Clara.

Implementation of the identified mitigation measures would reduce construction impacts on water quality to a less-than-significant level. **(Less Than Significant Impact with Mitigation)**

Operational Impacts

The project includes stormwater quality best management practices such as directing site runoff into vegetated swales in conformance with requirements in the City of Santa Clara's Municipal NPDES Permit. As discussed above, stormwater on site would be treated with biotreatment ponds dispersed around the site. These ponds would filter and treat stormwater before draining into the City of Santa Clara stormwater system. Inadequate maintenance of the proposed on-site stormwater features could result in an increase in pollutants in stormwater runoff to local waterways. In addition, as shown in Table 4.9-1, implementation of the project would result in an approximately 22 percent decrease in impervious surfaces at the project site.

Impact HYDRO-2: Operation of the project could increase pollutant loads in stormwater runoff. **(Significant Impact)**

Mitigation Measures:

The following mitigation measures would reduce water quality impacts during operation.

MM HYDRO-2.1: When the construction phase is complete, a Notice of Termination (NOT) for the General Permit for Construction shall be filed with the RWQCB and the City of Santa Clara. The NOT shall document that all elements of the SWPPP have been executed, construction materials and waste have been properly disposed of, and a post-construction stormwater management plan is in place as described in the SWPPP for the project site.

MM HYDRO-2.2: All post-construction Treatment Control Measures (TCMs) shall be installed, operated, and maintained by qualified personnel. On-site inlets shall be cleaned out a minimum of once per year, prior to the wet season.

MM HYDRO-2.3: The property owner/site manager shall keep a maintenance and inspection schedule and record to ensure the TCMs continue to operate effectively for the life of the project. Copies of the schedule and record must be provided to the City upon request and must be made available for inspection on-site at all times.

Implementation of the identified mitigation measures would reduce operational impacts on water quality to a less-than-significant level. **(Less Than Significant Impact with Mitigation)**

4.9.2.4 Flooding

As previously discussed, the project site is located within Flood Zone X, but is not located within a 100-year flood hazard zone. Therefore, the project, which would not include any residential uses, would not result in placing housing in a 100-year flood zone or expose people or structures to any significant flood risk. **(Not a CEQA Impact; Provided for Informational Purposes Only)**

Flooding Impacts Related to Sea Level Rise

The project site is located inland from San Francisco Bay at an elevation of approximately 52 feet amsl. In addition, as previously discussed, the project site is not within an area mapped as vulnerable to sea level rise in the Santa Clara General Plan. Therefore, the project would not be subject to significant risk of flooding impacts related to sea level rise. **(Not a CEQA Impact; Provided for Informational Purposes Only)**

4.9.2.5 Dam Failure

As previously discussed, there are no dams or levee systems in the area within the vicinity of the project site; however the project site is within the dam failure inundation area for Lexington Reservoir (Leniham Dam). Lexington Reservoir is maintained by the Santa Clara Valley Water District (SCVWD) and the dam is continuously monitored for seepage and settling and inspected when an earthquake occurs. Due to the monitoring and inspection, the distance from the project site, and the nature of the on-site uses, proposed site improvements are not anticipated to result in a new substantial hazard from dam failure. While inundation resulting from dam failure could result in damage to structures, the probability of such a failure is extremely remote. Therefore, the project would not be subject to a significant risk of inundation from dam failure. **(Not a CEQA Impact; Provided for Informational Purposes Only)**

4.9.2.6 Inundation

As previously discussed, the project site is not located near a large body of water and is not near the ocean. Due to the location of the project site, the project would not be subject to inundation by seiche, tsunami, or mudflow. **(Not a CEQA Impact; Provided for Informational Purposes Only)**

4.9.3 Conclusion

With the implementation of the proposed mitigation measures, the project would have a less-than significant impact on hydrology and water quality. **(Less Than Significant Impact with Mitigation)**

4.10 LAND USE

4.10.1 Setting

4.10.1.1 Existing Land Use on the Project Site

The 8.97-acre project site is in an existing industrial area of the City. The project site is comprised of three parcels developed with existing industrial warehouse, manufacturing, and office facilities, as well as associated surface parking. The existing buildings on the project site have a total footprint of approximately 147,600 sf. Refer to Figure 2.0-3 in Section 2.0, *Project Information*, for an aerial photograph of the project site and surrounding area.

4.10.1.2 Surrounding Land Uses

The project site is bounded by Mathew Street to the south, the Southern Pacific Railroad to the east, and other commercial and industrial properties to the north and west. The project site is primarily surrounded by industrial and commercial land uses. The buildings use a variety of building materials such as metal, glass, wood, concrete, and stone. The area surrounding the project site is characterized by low-rise buildings and warehouses set back from the roadway with surface parking lots and intermittently-spaced landscaped areas. The closest parks to the project site are Reed Street Dog Park (located 0.3 mile south of the project site) and Larry J. Marsalli Park (located 0.6 mile south of the project site). The closest residences to the project site are approximately 400 feet west of the project site. The closest school to the project site is Scott Lane Elementary School at 1925 Scott Boulevard, 0.5 mile southwest of the project site.

4.10.1.3 Santa Clara General Plan Land Use Designation and Zoning

Land Use Designation

The City adopted the Santa Clara General Plan in 2010 to accommodate planned housing and employment growth through 2035. The Land Use Diagram of the Santa Clara General Plan contains three phases: Phase I: 2010–2014, Phase II: 2015–2023, and Phase III: 2023–2035. The project site will retain its designation as Heavy Industrial for Phases I, II, and III.[64]

The Heavy Industrial designation allows for primary manufacturing, refining and similar activities. It also accommodates warehousing and distribution, as well as data centers. Support ancillary office space or retail associated with the primary use, may be up to a maximum of ten percent of the building area. No standalone retail uses are allowed. Parking is typically in surface lots. The maximum floor area ratio (FAR) is 0.45.

Zoning Designation

The project site is zoned as MH (Heavy Industrial). This zoning designation is intended for any heavy industrial development including manufacturing, processing, assembling, research, wholesale, or storage uses. Such permitted uses shall not be objectionable or detrimental to adjacent properties because of noise, smoke, odor, dust, noxious gases, vibrations, glare, heat, fire hazards, or industrial or hazardous

[64] City of Santa Clara. 2014. *General Plan Land Use Diagrams: Phase I: 2010–2014, Phase II: 2015–2023, and Phase III: 2023–2035.* Updated December 9. Available: http://santaclaraca.gov/government/departments/community-development/planning-division/general-plan. Accessed October 31, 2016.

wastes or materials emanating from the property. Maximum building height under this zoning designation is 70 feet. Buildings under this designation are required to have at least 15-foot setback distance from the street.

4.10.1.4 Applicable Plans, Policies, and Regulations

The Santa Clara General Plan establishes goals and policies to guide land use development within the City of Santa Clara. Applicable Santa Clara General Plan policies are presented in Table 4.10-1. The project's consistency with these policies is discussed below.

4.10.2 Environmental Checklist and Discussion of Impacts

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the Project:				
1. Physically divide an established community?	☐	☐	☐	☒
2. Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?	☐	☐	☒	☐
3. Conflict with any applicable habitat conservation plan or natural community conservation plan?	☐	☐	☐	☒

4.10.2.1 Physical Division of an Established Community

The project would demolish all of the existing on-site structures and associated surface parking and construct two new four-story data center buildings with supporting parking. The project site is surrounded by industrial and commercial uses. Therefore, the project would not physically divide an established community within the City and would not interfere with the movement of residents through a neighborhood. **(No Impact)**

4.10.2.2 General Plan and Zoning

General Plan Designation Consistency

The proposed data halls would provide space for computer servers for private clients in secure and environmentally controlled areas. Data centers are specifically mentioned in the Santa Clara General Plan as an anticipated Heavy Industrial use that requires a large, warehouse-style building. At full build-out, the proposed project is anticipated to employ approximately 29 employees, including 14 operations personnel, 13 security personnel, and 2 janitors. Security and operations personnel would be employed in shifts, resulting in a maximum of 16 employees on-site on any single day (9 operations personnel, 5 security personnel, and 2 janitors). Therefore, employment density at the project site would be very low, which is consistent with the intent of the Heavy Industrial land use designation. The General Plan provides for a maximum FARs for industrial uses ranging from 0.45 for Heavy Industrial to 2.0 for High-

Intensity Office/R&D.[65] These FARs reflect intended employment intensities in industrial areas assumed in the Santa Clara General Plan rather than assumptions or requirements for open space around industrial buildings. The proposed FAR for the project is 1.06, which would exceed the maximum FAR allowable under the Santa Clara General Plan (0.45). However, the project as proposed is generally consistent with the General Plan, and the FAR standard in the General Plan is a guideline and not a definitive development standard, like a provision in the Zoning Ordinance would be. As stated above, the General Plan's FAR limitations are intended to control employment density, and the project's employment density would be low. Based on the above analysis, the project would not conflict with the allowed uses or assumed employment intensity for the Heavy Industrial designation. Moreover, there are numerous Santa Clara General Plan policies with which the project does achieve consistency: Therefore, the project would be consistent with the Santa Clara General Plan designation for the project site. **(Less Than Significant Impact)**

TABLE 4.10-1
PROJECT CONSISTENCY WITH SANTA CLARA GENERAL PLAN LAND USE POLICIES

Land Use Policies	Project Consistency
Land Use Policies	
5.3.1–P3: Support high quality design consistent with adopted design guidelines and the City's architectural review process.	Consistent. The façades of the proposed buildings would consist primarily of plaster or other cementitious skin materials, metal, and glass. The design of the proposed buildings incorporates the use of varied surface materials and colors as well as accent elements including an exposed stair/elevator tower, vertical bands and corrugated metal panels. These architectural elements help create visual interest and reduce the perceived height and bulk of the structure by breaking up the building facade. The buildings and site improvements would be subject to the City's design review process to ensure that the project would not adversely affect the visual quality of the area and would conform to current architectural and landscaping standards.
5.3.1–P8: Work with property owners to improve or redevelop underutilized and vacant properties.	Consistent. The project would redevelop an existing property that includes industrial warehouse, manufacturing, and office facilities, as well as associated surface parking. A substantial amount of the project site is comprised of vacant space and surface parking.
5.3.1–P29: Encourage design of new development to be compatible with, and sensitive to, nearby existing and planned development, consistent with other applicable General Plan policies.	Consistent. The project proposes to construct two four-story data center buildings. Thus, the proposed buildings would be two to three stories taller than the surrounding low-rise structures. However, the proposed building facade would be visually similar to the surrounding industrial and commercial uses. The project area is developed with buildings that feature a mix of architectural styles and no particular dominant design aesthetic. The proposed building design would be compatible with the mixed visual character of the area.
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.	Consistent. The project would include the construction of two data center buildings on a site that is designated as Heavy Industrial under the Santa Clara General Plan.

[65] Floor area ratio (FAR) is the ratio of building square footage to land square footage. For example, a three-story, 60,000 square foot building on a 30,000 square foot lot would have a FAR of 2.0.

TABLE 4.10-1
PROJECT CONSISTENCY WITH SANTA CLARA GENERAL PLAN LAND USE POLICIES

Land Use Policies	Project Consistency
Air Quality Policies	
5.10.2– P3: Encourage implementation of technological advances that minimize public health hazards and reduce the generation of air pollutants.	Consistent. The project would include four electrical vehicle charging stations that would serve nine electrical vehicle parking spots.
5.10.2-P4: Encourage measures to reduce GHG emissions to reach 30 percent below 1990 levels by 2020.	Consistent. Water conservation and energy efficiency measures included in the project would reduce GHG emissions associated with the generation of electricity.
5.10.2–P6: Require "Best Management Practices" for construction dust abatement.	Consistent. In accordance with Mitigation Measure AIR-1.1 included in Section 4.3, *Air Quality*, the project applicant would implement BAAQMD-recommended BMPs to control fugitive dust.
Energy Policies	
5.10.3-P1: Promote the use of renewable energy resources, conservation and recycling programs.	Consistent. The project would utilize lighting control to reduce energy usage for new exterior lighting and air economization for building cooling. Water efficient landscaping, ultra low flow plumbing fixtures in the proposed buildings, and the use of recycled water for the cooling towers would limit water consumption. Furthermore, the project would utilize materials (wallboard partitions, ceiling tiles, floor surfaces) that include post-consumer waste.
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.	
Water Policies	
5.10.4-P6: Maximize the use of recycled water for construction, maintenance, irrigation and other appropriate applications.	Consistent. The project would utilize recycled water for landscape irrigation and in the cooling towers.
5.10.4–P7: Require installation of native and low-water-consumption plant species when landscaping new development and public spaces to reduce water usage.	Consistent. Approximately 120 new trees (including London Plane, Coast Live Oak, and Brisbane Box trees) would be planted around the perimeter of the project site and along the central access drive. In addition, shrubs and ground cover would be planted throughout the project site. In addition, water efficient landscaping with low usage plant material to minimize irrigation requirements would be installed and maintained.
Noise Policies	
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).	Consistent. In accordance with Mitigation Measure NOI-1.1 in Section 4.12, *Noise*, the project applicant would implement measures to reduce noise from mechanical equipment (e.g., sound enclosures, mufflers, and equipment) that meets the City's 70 dBA noise standard.
5.10.6–P4: Encourage the control of noise at the source through site design, building design, landscaping, hours of operation and other techniques.	

Zoning Designation Consistency

The project site is zoned as MH. As previously discussed, the maximum building height under the MH zoning designation is 70 feet. Buildings under this designation are required to have at least 15-foot setback distance from the street. This zoning designation accommodates industries operating substantially within an enclosed building. The height of the proposed buildings to the top of the roof would be approximately 87.5 feet above ground surface (107.5 feet above ground surface to the top of the roof screen). The proposed buildings would be set back from the street by more than 15 feet. The height of the proposed buildings would exceed the maximum height allowed. The project applicant is requesting a zoning administrator modification to allow for a height increase of up to 25 percent. With approval of a zoning administrator modification, the project would be consistent with the development standards for the MH zoning designation and the proposed data center uses would be consistent with allowed uses for the MH zoning designation. Therefore, with approval of a zoning administrator modification to the MH zoning designation, the project would be consistent with the existing zoning designation for the project site. **(Less Than Significant Impact)**

4.10.2.3 Land Use Compatibility

Potential incompatibility may arise from placing a particular development or land use at an inappropriate location, or from some aspect of the project's design or scope. Depending on the nature of the impact and its severity, land use compatibility conflicts can range from minor irritation and nuisances to potentially significant effects on human health and safety. The project would modify the character of the project site by demolishing the existing industrial warehouse, manufacturing, and office facilities, as well as associated surface parking. In their place, the project would include the construction of two four-story, 206,500-gsf data center buildings and a paved surface parking lot that would become a new Vantage Data Center campus. The project site is primarily surrounded by industrial and commercial uses. Although the project would introduce taller buildings on the project site compared to the existing on-site buildings, the mass and scale of the proposed buildings would not be out of character with the surrounding buildings. Employment density at the project site would be relatively low and noise and lighting would not substantially increase over existing levels. Thus, the proposed data center would be compatible with surrounding uses and would not interfere with the existing operations of the adjacent businesses. Therefore, the proposed land use under the project would be compatible with the surrounding uses. **(Less Than Significant Impact)**

4.10.2.4 Consistency with Applicable Habitat Conservation Plan or Natural Community Conservation Plan

The project site is not subject to an approved Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan; therefore, no impact would occur. **(No Impact)**

4.10.3 Conclusion

The project would have a less-than-significant impact on land use. **(Less Than Significant Impact)**

4.11 MINERAL RESOURCES

4.11.1 Setting

The City is located in an area zoned MRZ-1 for aggregate materials by the State of California.[66] MRZ-1 zones are areas where adequate information indicates that no significant mineral deposits are present or where it is judged that little likelihood exists for their presence. The area is not known to support significant mineral resources of any type. No mineral resources are currently being extracted in the City. The State Office of Mine Reclamation's list of mines (the AB 3098 List) regulated under the Surface Mining and Reclamation Act (SMARA) does not include any mines within the City.[67]

4.11.2 Environmental Checklist and Discussion of Impacts

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the Project:				
1. Result in the loss of availability of a known mineral resource that will be of value to the region and the residents of the state?	☐	☐	☐	☒
2. Result in the loss of availability of a locally- important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?	☐	☐	☐	☒

4.11.2.1 Mineral Resources Impacts

The project site is in a developed urban area and does not contain any known or designated mineral resources. **(No Impact)**

4.11.3 Conclusion

The project would have no impact related to the loss of availability of a known important mineral resource. **(No Impact)**

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66 California Department of Conservation. 1996. *Revised Mineral Land Classification Map. Aggregate Resources Only. South San Francisco Bay Production-Consumption Region. Mountain View Quadrangle. Open-File Report 96-03.* Available: ftp://ftp.consrv.ca.gov/pub/dmg/pubs/ofr/OFR_96-03/OFR_96-03_Plate5.pdf. Accessed: September 27, 2016.

67 California Department of Conservation. 2016. AB 3098 List. Available: http://www.consrv.ca.gov/omr/SMARA%20Mines/ab_3098_list/Pages/Index.aspx. Accessed: September 27, 2016.

4.12 NOISE

4.12.1 Setting

4.12.1.1 Noise Background

Noise is commonly defined as unwanted sound that annoys or disturbs people and potentially causes an adverse psychological or physiological effect on human health. Because noise is an environmental pollutant that can interfere with human activities, evaluation of noise is necessary when considering the environmental impacts of a project.

Sound is mechanical energy (vibration) transmitted by pressure waves over a medium such as air or water, and noise is generally defined as unwanted sound that annoys or disturbs people. Sound is characterized by various parameters that include the rate of oscillation of sound waves (frequency), the speed of propagation, and the pressure level or energy content (amplitude). In particular, the sound pressure level is the most common descriptor used to characterize the loudness of an ambient (existing) sound level. Although the decibel (dB) scale, a logarithmic scale, is used to quantify sound intensity, it does not accurately describe how sound intensity is perceived by human hearing. The human ear is not equally sensitive to all frequencies in the entire spectrum, so noise measurements are weighted more heavily for frequencies to which humans are sensitive in a process called "A-weighting," written as "dBA" and referred to as "A-weighted decibels." Table 4.12-1 summarizes typical A-weighted sound levels for different noise sources.

In general, human sound perception is such that a change in sound level of 1 dB cannot typically be perceived by the human ear, a change of 3 dB is just noticeable, a change of 5 dB is clearly noticeable, and a change of 10 dB is perceived as doubling or halving the sound level.

Different types of measurements are used to characterize the time-varying nature of sound. These measurements include the equivalent sound level (L_{eq}), the minimum and maximum sound levels (L_{min} and L_{max}), percentile-exceeded sound levels (such as L_{10}, L_{20}), the day-night sound level (L_{dn})), and the community noise equivalent level (CNEL). Sensitivity to noise increases during the evening and at night because excessive noise interferes with the ability to sleep, and L_{dn} and CNEL values take this into consideration, as they involve averaging cumulative noise exposure over a 24-hour period. L_{dn} and CNEL values differ by less than 1 dB. As a matter of practice, L_{dn} and CNEL values are considered to be equivalent and are treated as such in this assessment.

For a point source such as a stationary compressor or construction equipment, sound attenuates based on geometry at a rate of 6 dB per doubling of distance. For a line source such as free-flowing traffic on a freeway, sound attenuates at a rate of 3 dB per doubling of distance.[68] Atmospheric conditions including wind, temperature gradients, and humidity can change how sound propagates over distance and can affect the level of sound received at a given location. The degree to which the ground surface absorbs acoustical energy also affects sound propagation. Sound that travels over an acoustically absorptive surface such as grass attenuates at a greater rate than sound that travels over a hard surface such as pavement. The increased attenuation is typically in the range of 1 to 2 dB per doubling of distance. Barriers such as buildings and topography that block the line of sight between a source and receiver also increase the attenuation of sound over distance.

[68] Federal Transit Administration. 2006. *Transit Noise and Vibration Impact Assessment.* FTA-VA-90-1003-06. Office of Planning and Environment. Available: http://www.fta.dot.gov/documents/FTA_Noise_and_Vibration_Manual.pdf. Accessed: October 26, 2016.

TABLE 4.12-1 TYPICAL A-WEIGHTED SOUND LEVELS[69]		
Common Outdoor Activities	**Noise Level (dBA)**	**Common Indoor Activities**
	100	Rock band
Jet flyover at 1,000 feet		
	100	
Gas lawnmower at 3 feet		
	90	
Diesel truck at 50 feet at 50 mph		Food blender at 3 feet
	80	Garbage disposal at 3 feet
Noisy urban area, daytime		
Gas lawnmower, 100 feet	70	Vacuum cleaner at 10 feet
Commercial area		Normal speech at 3 feet
Heavy traffic at 300 feet	60	
		Large business office
Quiet urban daytime	50	Dishwasher in next room
Quiet urban nighttime		Theater, large conference room (background)
	40	
Quiet suburban nighttime		
	30	Library
Quiet rural nighttime		Bedroom at night, concert hall (background)
	20	
		Broadcast/recording studio
	10	
	0	

4.12.1.2 Vibration Background

Operation of heavy construction equipment, particularly the types used for pile driving and pavement breaking, create seismic waves that radiate along the surface of the earth and downward into the earth. These surface waves can be felt as ground vibration. Vibration from operation of this equipment can result in effects ranging from annoyance of people to damage of structures. Varying geology and distance will result in different vibration levels containing different frequencies and displacements. In all cases, vibration amplitudes will decrease with increasing distance.

Perceptible ground-borne vibration is generally limited to areas within a few hundred feet of construction activities. As seismic waves travel outward from a vibration source, they excite the particles of rock and soil through which they pass and cause them to oscillate. The actual distance that these particles move is usually only a few ten-thousandths to a few thousandths of an inch. The rate or velocity (in inches per second) at which these particles move is the commonly accepted descriptor of the vibration amplitude,

[69] California Department of Transportation. 2013a. *Technical Noise Supplement to the Traffic Noise Analysis Protocol*. September. Available: http://www.dot.ca.gov/hq/env/noise/pub/TeNS_Sept_2013A.pdf.Accessed: October 26, 2016.

referred to as the peak particle velocity (PPV). Table 4.12-2 summarizes typical vibration levels generated by construction equipment.

TABLE 4.12-2
VIBRATION SOURCE LEVELS FOR DEMOLITION AND CONSTRUCTION EQUIPMENT[70]

Equipment	PPV at 25 feet	PPV at 50 feet	PPV at 75 feet	PPV at 100 feet	PPV at 400 feet
Pile driver (impact)	1.518	0.5367	0.2921	0.1875	0.0237
Pile driver (sonic/vibratory)	0.734	0.2595	0.1413	0.0918	0.0115
Hoe ram	0.089	0.0315	0.0171	0.0111	0.0014
Large bulldozer	0.089	0.0315	0.0171	0.0111	0.0014
Loaded trucks	0.076	0.0269	0.0146	0.0095	0.0012
Jackhammer	0.035	0.0124	0.0067	0.0044	0.0005
Small bulldozer	0.003	0.0011	0.0006	0.0004	0.0033

Vibration amplitude attenuates over distance and is a complex function of how energy is imparted into the ground and the soil conditions through which the vibration is traveling. The following equation can be used to estimate the vibration level at a given distance for typical soil conditions.[71] PPV_{ref} is the reference PPV from Table 4.12-2.

$$PPV = PPV_{ref} x\ (25/Distance)^{1.5}$$

Tables 4.12-3 and 4.12-4 summarize guidelines developed by California Department of Transportation (Caltrans) for damage and annoyance potential from transient and continuous vibration that is usually associated with construction activity. Equipment or activities typical of continuous vibration include excavation equipment, static-compaction equipment, tracked vehicles, traffic on a highway, vibratory pile drivers, pile-extraction equipment, and vibratory-compaction equipment. Equipment or activities typical of single-impact (transient) or low-rate repeated impact vibration include impact pile drivers, blasting, drop balls, "pogo stick" compactors, and crack-and-seat equipment.[72]

[70] Federal Transit Administration. 2006. *Transit Noise and Vibration Impact Assessment*. FTA-VA-90-1003-06. Office of Planning and Environment. Available: http://www.fta.dot.gov/documents/FTA_Noise_and_Vibration_Manual.pdf. Accessed: October 26, 2016.

[71] Federal Transit Administration. 2006. *Transit Noise and Vibration Impact Assessment*. FTA-VA-90-1003-06. Office of Planning and Environment. Available: http://www.fta.dot.gov/documents/FTA_Noise_and_Vibration_Manual.pdf. Accessed: October 26, 2016.

[72] California Department of Transportation. 2013b. *Transportation and Construction Vibration Guidance Manual*. Available: http://www.dot.ca.gov/hq/env/noise/pub/TCVGM_Sep13_FINAL.pdf. Accessed: October 26, 2016.

TABLE 4.12-3 GUIDELINE VIBRATION DAMAGE POTENTIAL THRESHOLD CRITERIA[73]		
	Maximum PPV (in/sec)	
Structure and Condition	Transient Sources	Continuous/Frequent Intermittent Sources
Extremely fragile historic buildings, ruins, ancient monuments	0.12	0.08
Fragile buildings	0.2	0.1
Historic and some old buildings	0.5	0.25
Older residential structures	0.5	0.3
New residential structures	1.0	0.5
Modern industrial/commercial buildings	2.0	0.5
Note: Transient sources create a single isolated vibration event, such as blasting or drop balls. Continuous/frequent intermittent sources include impact pile drivers, pogo-stick compactors, crack-and-seat equipment, vibratory pile drivers, and vibratory-compaction equipment.		

TABLE 4.12-4 GUIDELINE VIBRATION ANNOYANCE POTENTIAL CRITERIA[74]		
	Maximum PPV (in/sec)	
Structure and Condition	Transient Sources	Continuous/Frequent Intermittent Sources
Barely perceptible	0.04	0.01
Distinctly perceptible	0.25	0.04
Strongly perceptible	0.9	0.10
Severe	2.0	0.4
Note: Transient sources create a single isolated vibration event, such as blasting or drop balls. Continuous/frequent intermittent sources include impact pile drivers, pogo-stick compactors, crack-and-seat equipment, vibratory pile drivers, and vibratory-compaction equipment.		

4.12.1.3 Applicable Noise Standards

City of Santa Clara General Plan

The City of Santa Clara General Plan outlines the levels of exterior noise that are considered "normally acceptable," "conditionally acceptable with required design and insulation to reduce noise levels," and "normally unacceptable" for residential, educational, recreational, commercial, industrial, and open space land uses (subject to further regulation by the Santa Clara City Code). For residential uses, exterior noise levels of 55 dBA CNEL are considered normally acceptable, while levels between 55 dBA CNEL and 70 dBA CNEL are considered conditionally acceptable, as long as reduction measures are implemented to reduce interior noise to 45 dBA. Noise levels above 70 dBA CNEL are considered normally unacceptable for residential land uses. For commercial land uses, noise levels up to 65 CNEL are considered normally acceptable, with levels between 65 and 75 CNEL being considered conditionally acceptable, as long as

[73] Federal Transit Administration. 2006. Transit Noise and Vibration Impact Assessment. FTA-VA-90-1003-06. Office of Planning and Environment. Available: http://www.fta.dot.gov/documents/FTA_Noise_and_Vibration_Manual.pdf. Accessed: October 26, 2016.

[74] California Department of Transportation. 2013b. *Transportation and Construction Vibration Guidance Manual.* September. http://www.dot.ca.gov/hq/env/noise/pub/TCVGM_Sep13_FINAL.pdf. Accessed: October 26, 2016.

reduction measures are implemented to reduce interior noise to 50 dBA CNEL; noise levels about 75 CNEL are considered unacceptable. For industrial land uses, noise levels of up to 70 CNEL are considered normally acceptable, and levels between 70 CNEL and 80 CNEL are considered conditionally acceptable, as long as reduction measures are implemented to reduce interior noise to 50 dBA CNEL.

Santa Clara City Code

Chapter 9.10 of the Santa Clara City Code applies to the regulation of noise and vibration. The purpose of the noise ordinance is to protect the public welfare by limiting unnecessary, excessive, and unreasonable noise or vibration. Section 9.10.040 specifies the exterior noise limits that apply to land use zones within the City, which are provided in Table 4.12-5.

TABLE 4.12-5
SANTA CLARA CITY CODE SCHEDULE A EXTERIOR SOUND OR NOISE LIMITS

Receiving Zoning Category	Time Period	Maximum Noise Level (dBA)
Category 1		
Single-family and duplex residential (R1, R2):	Commencing at 7:00 a.m. and ending at 10:00 p.m. that evening	55
	Commencing at 10:00 p.m. and ending at 7:00 a.m. the following morning	50
Category 2		
Multiple-family residential, public space (R3, B):	Commencing at 7:00 a.m. and ending at 10:00 p.m. that evening	55
	Commencing at 10:00 p.m. and ending at 7:00 a.m. the following morning	50
Category 3		
Commercial, Office (C, O):	Commencing at 7:00 a.m. and ending at 10:00 p.m. that evening	65
	Commencing at 10:00 p.m. and ending at 7:00 a.m. the following morning	60
Category 4		
Light Industrial (ML, MP):	Anytime	70
Heavy Industrial (MH):	Anytime	75

Noise levels from fixed sources are limited at residential uses and public space land uses to 55 dBA during the daytime (7:00 a.m. to 10:00 p.m.) and 50 dBA during the nighttime (10:00 p.m. to 7:00 a.m.). Noise levels at commercial and office land uses are limited to 65 dBA during the daytime (7:00 a.m. to 10:00 p.m.) and 60 dBA during the nighttime (10:00 p.m. to 7:00 a.m.). Noise levels at light-industrial land uses are limited to 70 dBA day or night. The noise limits are not applicable to emergency work, including the operation of emergency generators, pumps, or other equipment necessary to provide services during an emergency.

Section 9.10.040 of the Santa Clara City Code establishes the following regulations on construction work:

- Construction activities are not permitted within 300 feet of residentially zoned property except between the hours of 7:00 a.m. and 6:00 p.m. on weekdays and 9:00 a.m. and 6:00 p.m. on Saturdays. No construction is permitted on Sundays or holidays.

With regard to vibration, Section 9.10.050 of the Santa Clara City Code pertains to vibration. It states that:

- It shall be unlawful for any person to operate or cause, permit, or allow the operation of, any fixed source of vibration of disturbing, excessive, or offensive vibration on property owned, leased, occupied, or otherwise controlled by such person, such that the vibration originating from such source is above the vibration perception threshold of an individual at the closest property line point to the vibration source on the real property affected by the vibration.

Santa Clara County Comprehensive Land Use Plan for Norman Y. Mineta San Jose International Airport

The Santa Clara County Airport Land Use Commission (ALUC) has adopted a Land Use Compatibility table for projects in the vicinity of Norman Y. Mineta San José International Airport. Under ALUC land use compatibility noise policies, industrial uses are compatible with noise environments (from aircraft overflights) that are 70 CNEL or less, office buildings, business commercial, and retail land uses are compatible with noise environments that are 65 CNEL or less, and residential land uses are compatible with noise environments that are 60 CNEL or less.

4.12.1.4 Existing Noise Environment

The project site is surrounded by light industrial, heavy industrial, and commercial land uses. In addition, some residential land uses are located farther from the project. The nearest residential receptors are approximately 400 feet west of the project site. The project site is designated as Heavy Industrial under the City of Santa Clara 2010-2035 General Plan (Santa Clara General Plan) and is zoned as MH (Heavy Industrial). The predominant ambient noise sources at nearby receptors are automobile traffic along Lafayette Street and other arterial roadways. Additionally, the project site is located approximately 0.3 mile west of the Norman Y. Mineta San Jose International Airport. Aircraft over-flights and off-site industrial equipment and activities are audible noise sources in the absence of traffic.

4.12.2 Environmental Checklist and Discussion of Impacts

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the Project:				
1. Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	☐	☒	☐	☐
2. Exposure of persons to, or generation of, excessive groundborne vibration or groundborne noise levels?	☐	☐	☒	☐
3. A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?	☐	☒	☐	☐
4. A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?	☐	☐	☒	☐

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the Project:				
5. For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, will the project expose people residing or working in the project area to excessive noise levels?	☐	☐	☒	☐
6. For a project within the vicinity of a private airstrip, will the project expose people residing or working in the project area to excessive noise levels?	☐	☐	☐	☒

4.12.2.1 Thresholds of Significance

The 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. The Santa Clara General Plan defines a change of three dB as noticeable, five dB as distinct.[75] Typically, project generated noise level increases of three dBA or greater are considered significant where resulting exterior noise levels would exceed the normally acceptable noise level standard. Where noise levels would remain at or below the normally acceptable noise level standard with the project, a noise level increase of five dBA or greater is considered significant.

4.12.2.2 Noise and Vibration Impacts from Construction

Excessive Demolition and Construction Noise Levels

Demolition and construction of the project would generate noise and would temporarily increase noise levels at adjacent commercial and industrial land uses. The significance of noise impacts during demolition and construction depends on the noise generated by various pieces of construction equipment, the timing and duration of noise generating activities, and the distance between construction noise sources and noise sensitive receptors. The demolition of the existing surface parking lot and construction of the proposed building and substation expansion would generate noise and would temporarily increase noise at adjacent industrial and commercial land uses.

Construction activities can generate considerable amounts of noise, especially during the demolition phase and the construction of project infrastructure when heavy equipment is used. Refer to Table 4.12-6 for a list of equipment expected to be used for project demolition and construction, the corresponding L_{max} sound levels at 50 and 100 feet, and the typical acoustical use factors. The acoustical use factor, or utilization factor, is the percentage of time each piece of construction equipment is assumed to be operating at full power (i.e., its noisiest condition) during construction, and is used to estimate L_{eq} values

[75] City of Santa Clara. 2014. *City of Santa Clara 2010-2035 General Plan*. Updated December 9. Available: http://santaclaraca.gov/government/departments/planning-inspection/planning-division/general-plan. Accessed: October 26, 2016.

from L_{max} values. For example the L_{eq} value for a piece of equipment that operates at full power 50 percent of the time (acoustical use factor of 50) is 3 dB less than the L_{max} value.

TABLE 4.12-6
TYPICAL CONSTRUCTION NOISE EMISSION LEVELS FOR PROJECT CONSTRUCTION EQUIPMENT

Equipment	L_{max} at 50 feet (dBA)[a]	L_{max} at 100 feet (dBA)[b]	Acoustical Usage/Utilization Factor (percent usage)
Air Compressor	78	72	40
Backhoe	78	72	40
Crane	81	75	16
Concrete Mixer Truck	79	73	40
Concrete Pump Truck	81	75	20
Concrete Saw	90	84	20
Forklift[c]	84	78	40
Dozer	82	76	40
Excavator	81	75	40
Front-end loader	79	73	40
Generator Set	81	75	50
Grader	85	79	40
Man lift	75	69	20
Paver	77	71	50
Roller	80	74	20
Tractor	84	78	40
Water Truck	76	70	40
Welders	74	68	40
Dump truck/haul truck[d]	76	70	40

Notes:
a. These values represent the loudest noise levels generated by each equipment type at a distance of 50 feet.
b. These values were calculated by subtracting 6 dBA from each L_{max} value at 50 feet, based on geometric attenuation for a point source.
c. Represented by Tractor from the FHWA *User's Guide*.
d. Represented by Dump Truck from the FHWA *User's Guide.*

To provide a conservative construction analysis, modeling for construction noise assumes that the three of the loudest pieces of equipment proposed to be used during a single phase (concrete saw, dozer, and tractor, which are all proposed for use during the demolition phase) would be operating simultaneously and close to one another on the project site. The combined noise level (both L_{max} and L_{EQ}) from the operation of this construction equipment was calculated. L_{EQ} values were calculated from L_{max} values using estimated utilization factors. Anticipated average (L_{EQ}) construction noise at various distances from the project site are shown in Table 4.12-7.

TABLE 4.12-7
PROJECT DEMOLITION AND CONSTRUCTION NOISE LEVELS (L_{EQ}) AT VARIOUS DISTANCES

Source Data			Utilization Factor	L_{EQ} Sound Level (dBA)
Source 1: Concrete saw - Sound level (dBA) at 50 feet = 90			0.2	83.0
Source 2: Dozer - Sound level (dBA) at 50 feet = 82			0.4	78.0
Source 3: Tractor - Sound level (dBA) at 50 feet = 84			0.4	80.0
Calculated Data:				
All Sources Combined - L_{max} sound level (dBA) at 50 feet =				91.0
All Sources Combined - L_{EQ} sound level (dBA) at 50 feet =				86.0
Distance Between Source and Receiver (ft)	**Geometric Attenuation (dB)[a]**	**Ground Effect or shielding Attenuation (dB)[b]**	**Calculated Lmax Sound Level (dBA)**	**Calculated Leq Sound Level (dBA)**
50	0	0.0	91	86
100	-6	0.0	85	80
200	-12	0.0	79	74
250	-14	0.0	78	72
300	-16	0.0	76	70
400	**-18**	**0.0**	**73**	**68**
500	-20	0.0	71	66
600	-22	0.0	70	64
650	-22	0.0	69	63
700	-23	0.0	69	63
800	-24	0.0	67	62
900	-25	0.0	66	61
1000	-26	0.0	65	60
1200	-28	0.0	64	58
1400	-29	0.0	63	57
1600	-30	0.0	61	56
1800	-31	0.0	60	54
2000	-32	0.0	59	54

Notes:
Based on noise levels from: Federal Highway Administration (FHWA). 2006. *Roadway Construction Noise Model User's Guide*. Available: http://www.fhwa.dot.gov/environment/noise/construction_noise/rcnm/rcnm.pdf. January. Washington, DC.

[a] Geometric attenuation based on 6 dB per doubling of distance.

[b] This calculation does not include the effects, if any, of local shielding from walls, topography or other barriers which may reduce sound levels further, or from ground attenuation.

The closest uses to the project site are the light industrial uses and commercial uses (Home Depot) located adjacent to the project site. These land uses are not generally considered to be noise-sensitive. As previously discussed, the nearest residence is located approximately 400 feet west of the project site. Worst-case construction noise (based on the assumptions described above) at a distance of 400 feet could be up to 68 dBA L_{EQ} based on distance alone, not accounting for ground effect attenuation or shielding offered by intervening buildings. Shielding and ground effects could potentially reduce this noise level by approximately 5 additional dB.

Construction noise impacts are more substantial when construction occurs during noise-sensitive times of the day (early morning, evening, or nighttime hours near residential uses), the construction occurs in areas immediately adjoining noise sensitive land uses, or when construction lasts extended periods of time. For the proposed project, construction would occur 8 hours per day, Monday through Friday, with no construction occurring on the weekend or on holidays. Demolition and construction activities for the project could result in annoyances to existing industrial and commercial uses adjacent to the project site, as well as to the residential land uses located at distances of 400 feet or more from the project site. However, there are no residentially zoned properties or other noise-sensitive land uses within 300 feet of the site. As discussed in the regulatory setting section, construction activities are not permitted within 300 feet of residentially zoned property except between the hours of 7:00 a.m. and 6:00 p.m. on weekdays and 9:00 a.m. and 6:00 p.m. on Saturdays. No construction is permitted on Sundays or holidays. Because the area surrounding the project site consists of mostly industrial and some commercial land uses, with the nearest residence being approximately 400 feet away, the proposed project would not be subject to the Santa Clara City Code regulation on construction hours. In addition, as no demolition or construction is proposed to occur on weekends or holidays, potential construction noise effects would be further reduced.

Haul trucks and worker trips would temporarily increase traffic noise in the vicinity of the project site. The maximum number of trips is anticipated to occur during demolition for Phases 1 and 3, with up to 330 one-way haul trips (660 total daily trips) and 15 one-way (30 round-trip) worker trips occurring on a given day.

As discussed in Section 4.16, *Transportation*, and as shown in Table 4.12-8 provided in the *Traffic* discussion below, existing AM and PM peak hours trip volumes on the roadway segments adjacent to residences near the project site (Lafayette Street north and south of Mathew Street) are all in excess of 2,000 trips. This corresponds to a daily traffic volume of about 20,000, based on the common assumption that 10 percent of the daily traffic occurs during the peak hour. The noise generated by a heavy truck is approximately equivalent to the noise generated by 13 automobiles[76] Therefore, the 660 daily haul truck trips generated during construction would generate noise equivalent to about 8,580 automobiles. On a roadway with average daily traffic of approximately 20,000, the haul truck trips during project construction would increase traffic noise by less than 2 dB. Thus, project-related haul trucks would not increase daily noise levels above existing levels by 3 dB, the threshold of a perceptible noise increase, on residential-adjacent roadway segments near the project site. Furthermore, project construction (including demolition and the use of haul trucks) would be temporary.

Given the above findings related to project construction and the use of haul trucks, noise from project demolition and construction (including the use of haul trucks) would not result in a substantial temporary or periodic increase in ambient noise levels, and would not violate the applicable local standards. **(Less Than Significant Impact)**

Excessive Groundborne Vibration or Groundborne Noise Levels

Land uses in which groundborne vibration could potentially interfere with operations or equipment, such as research facilities, manufacturing facilities, hospitals, and university research operations are considered "vibration-sensitive.[77]" The degree of sensitivity depends on the specific equipment that would be

[76] California Department of Transportation. 2013a. *Technical Noise Supplement to the Traffic Noise Analysis Protocol.* September. Available: http://www.dot.ca.gov/hq/env/noise/pub/TeNS_Sept_2013A.pdf.Accessed: October 26, 2016.

[77] Federal Transit Administration. 2006. *Transit Noise and Vibration Impact Assessment.* FTA-VA-90-1003-06. Office of Planning and Environment. Available: http://www.fta.dot.gov/documents/FTA_Noise_and_Vibration_Manual.pdf. Accessed: October 26, 2016.

affected by the groundborne vibration. None-impact construction equipment will typical not have an adverse effect on vibration-sensitive facilities at distances greater than 250 feet.[78] No vibration-sensitive land uses are within 250 feet of the project site. Therefore, any vibration generated during demolition or construction activities would not affect vibration-sensitive land uses. However, excessive levels of groundborne vibration of either a regular or an intermittent nature could result in annoyance to residential uses.

A vibration level of 0.01 PPV is considered to be barely perceptible for continuous/frequent intermittent sources of vibration, such as construction activity (refer to Table 4.12-4). The nearest residence is located approximately 400 feet away from the project site. Using the vibration attenuation equation [PPV = PPV_{ref} x $(25/Distance)^{1.5}$], vibration from demolition and construction equipment at a distance of 400 feet can be calculated (vibration levels at 400 feet are shown in Table 4.12-2). There are two options for the building foundations: a deep pile system consisting of auger cast displacement piles; and a rigid mat foundation combined with a deep ground improvement method.[79] Although pile driving, which has the greatest potential to generate vibration, would not occur, large earth-moving equipment such as a bulldozer would likely be used. A large bulldozer could generate vibration levels of 0.0014 at a distance of 400 feet (the distance to the closest residential land uses), which is nearly 10 times less than the "barely perceptible" level of 0.01 described in Table 4.12-4. Therefore, at the nearest residential receptors, vibration from project demolition and construction would not be perceptible. **(Less Than Significant Impact)**

4.12.2.3 Project-Generated Noise Impacts

Mechanical Equipment

The project would include multiple pieces of mechanical equipment with the potential to generate noise that could be audible at nearby land uses. Specifically, an approximately 24,000-sf combined generator and mechanical equipment yard would be located west of Building A and would be encircled by a 10-foot-tall yard fence with black slats. An approximately 12,700-sf generator yard would be located south of Building B and an approximately 9,500-sf generator yard would be located north of Building B. The southern generator yard would be screened with a 28-foot-tall masonry wall designed to blend into the surrounding building forms. A 10-foot-tall yard fence with black slats would encircle the northern generator yard. A separate 13,000-sf mechanical equipment yard would be located east of Building B and would be encircled by a 10-foot-tall yard fence with black slats. The 32 proposed emergency generators (Caterpillar C175-16 3000 kW output generators) located in the yards discussed above would provide backup power to the data center buildings in the event that an equipment failure or other conditions result in an interruption to the electric power provided by SVP, the electricity provider that serves the project site. The generator and mechanical equipment yards would also include chillers, cooling towers, chilled water pumps, and condenser water pumps. Mechanical equipment on the roofs of the proposed buildings would include air conditioning units and make-up air units/humidifiers. Rooftop structures would be

[78] Federal Transit Administration. 2006. *Transit Noise and Vibration Impact Assessment.* FTA-VA-90-1003-06. Office of Planning and Environment. Available: http://www.fta.dot.gov/documents/FTA_Noise_and_Vibration_Manual.pdf. Accessed: October 26, 2016.

[79] Murray Engineers. 2016. *Geotechnical Investigation, Vantage Data Centers, 651, 725, 825 Mathew Street, Santa Clara, California, 95050.* November. Subsequent to the preparation of the *Geotechnical Investigation* prepared for the project, the project applicant determined that a third option discussed in the *Geotechnical Investigation* (a deep pile system consisting of driven, precast, prestressed concrete piles) is not feasible for the project site.

concealed from view by an approximately 20-foot-tall mechanical metal screen along the rooftop perimeter.

As previously stated, the project site is surrounded by industrial and commercial land uses, with the nearest residential land use located approximately 400 feet west of the project site. The City's exterior noise limit for heavy industrial land use zones is 75 dBA L_{max} (anytime), the exterior noise limit for commercial land uses it 65 dBA L_{max} (daytime), and the exterior noise limit for residential land uses is 55 dBA L_{max} (daytime).

Note that the City noise limits for stationary noise sources are not applicable to emergency work, including the operation of emergency generators; however, the generators will be tested intermittently, and these tests are subject to the local noise regulations defined in the City Noise Ordinance.

According to the manufacturer's specification for the Caterpillar C175-16 3000 kW output generator, the operation of this generator results in an overall noise level of 127 dBA at a distance of 7 meters, or approximately 23 feet. Using the attenuation equation which includes a 6 dB noise reduction per doubling of distance, noise levels at a distance of 50 feet (nearby industrial land use) would be approximately 120 dBA, noise levels at the property line of the nearby commercial land use to the north (35 feet from the closest proposed generator) would be approximately 123 dBA, and noise levels at the nearest residential use (approximately 500 feet from the closest proposed generator) would be 100 dBA. Where there is a solid barrier intervening between the equipment and receptors noise would be reduced by 5 to 10 decibels.

As discussed previously, these are emergency generators that would only be operating simultaneously during circumstances involving a power outage at the facility. However, the testing of these generators would be subject to the local noise ordinances. With noise levels of approximately 120 dBA at the two closest land uses (commercial and industrial), and of 100 dBA at the nearest residence, noise levels would be in excess of the local standards. Although fences and, in some cases, masonry walls would be located between the generators and adjacent uses, expected noise levels are so loud that these are not expected to sufficiently reduce generator noise. Furthermore, all of the specific details are not known about other mechanical equipment proposed for the project site, but it is possible that chillers, HVAC equipment, water pumps, and humidifiers could result in excess noise at nearby land uses. Therefore, this impact is considered potentially significant.

Impact NOI-1: Noise levels from mechanical equipment associated with the project could be in excess of noise thresholds. **(Significant Impact)**

Mitigation Measures:

The following mitigation measure would reduce noise from mechanical equipment.

MM NOI-1.1: The project applicant shall prepare and implement measures to ensure that outdoor mechanical equipment does not generate noise levels in excess of the City's applicable noise standard for the applicable zoning category (i.e. 75 dBA noise standard at the nearest heavy industrial uses, 65 dBA at the nearest commercial land uses, and 55 dBA at the nearest residential land uses). All sound, noise, or vibration measurements shall be taken at the closest point to the noise or vibration source on the adjacent real property, or on any other property, affected by the noise or vibration. Measures included in this noise control plan that could help to accomplish this standard include, but are not limited to:

- Installing sound enclosures or barriers around noise-generating mechanical equipment (including but not limited to emergency generators and pumps). The generators may need to be fully enclosed to meet the applicable noise standards.
- Reducing the number of generators tested at once.
- Utilizing mufflers to reduce noise from mechanical equipment, and
- Utilizing quieter equipment (e.g. smaller, quieter generators) that meets this standard.

Prior to the issuance of an occupancy permit, the project applicant shall prepare a report, identifying measures that shall be implemented to ensure that exterior noise levels from mechanical equipment comply with the City's noise standards, to the satisfaction of the Director of Community Development.

Implementation of the identified mitigation measure would reduce noise from mechanical equipment to a less-than-significant level. **(Less Than Significant Impact with Mitigation)**

Loading and Trash Docks

The shipping and receiving areas within the project site (in the western portion of Building A and the eastern portion of Building B, all over 550 feet from the nearest residence) would be used for loading and unloading servers, equipment, and supplies. The shipping and receiving areas would also include dedicated bays for trash and recycling.

Trucks that would be used to pick up trash and recycling as well as pick up and deliver supplies at the project site would create intermittent noise (e.g., from idling engines and the beeping from backup warning signals). However, operation of the project would not involve large-scale commercial services, manufacturing, or similar work that would require frequent truck deliveries and pickups. State law currently prohibits heavy-duty diesel delivery trucks from idling more than 5 minutes.[80] Therefore, due to the short duration and relative infrequency of truck trips to the project site, truck pick ups and deliveries would not impact any sensitive receptors near the project site and would not result in a substantial permanent increase in noise in the vicinity of the project site. **(Less Than Significant Impact)**

Traffic

Although the project would add some traffic to nearby roadway segments, most of the roadway segments used to access the project site from the north (from US 101 or from Central Expressway) are adjacent to industrial land uses, which are not considered noise sensitive. Although it is possible that some traffic may access the project site from the south, it is likely the main segment (with residential land uses along it) that would experience an increase in traffic from the proposed project is the segment of Lafayette Street between Martin Avenue and Memorex Drive. Residences along this segment are located between Shulman Avenue and Memorex Drive near Mathew Street, which provides access to the project site. The Existing peak-hour traffic volumes on Lafayette Street between Shulman Avenue and Mathew Street as well as between Mathew Street and Memorex Drive are shown in Table 4.12-9.

Approximately sixteen employees are anticipated to occupy the building on a given day. As discussed in Section 4.16, *Transportation*, it is estimated that there would be up to 410 trips to and from the facility on

[80] California Air Resources Board. 2006. *Final Regulation Order – Requirements to Reduce Idling Emissions from New and In-Use Trucks, Beginning in 2008.* November 15. Available: http://www.arb.ca.gov/regact/hdvidle/hdvidle.htm. Accessed: June 30, 2016.

a given day (including visitors), with an AM peak-hour volume of approximately 37 trips and a PM peak-hour volume of 37 trips. Peak-hour Existing and Existing plus Project volumes for the roadway segments adjacent to residences near the project site (Lafayette Street north and south of Mathew Street) are shown in Table 4.12-8.

TABLE 4.12-8
EXISTING AND EXISTING PLUS PROJECT PEAK-HOUR TRAFFIC VOLUMES ON LAFAYETTE STREET NEAR THE PROJECT SITE.

Roadway Segment	Existing		Existing plus Project	
	AM Peak-hour Volume	PM Peak-hour Volume	AM Peak-hour Volume	PM Peak-hour Volume
Lafayette Street Between Shulman Avenue and Mathew Street	2,089	2,087	2,108	2,106
Lafayette Street Between Mathew Street and Memorex Drive	2,077	2,124	2,096	2,143

Both segments of Lafayette shown in Table 4.12-8 would experience an increase in traffic from project implementation of approximately 19 trips in the AM peak hour and 19 trips in the PM peak hour. Since Existing peak-hour volumes are over 2,000 for both the AM and PM peak hour on these roadway segments, adding 19 project-related trips to these totals would have a very small effect on traffic noise. Specifically, this would be a less than 1 percent increase in traffic, which would result in less than a 0.1 dB increase in traffic noise. Therefore, traffic noise increases would be well below 3 dB (the threshold of a perceptible noise increase) along roadway segments near the project site (including those near residential receptors), and project traffic would not impact any sensitive receptors near the project site. The project would not result in traffic noise levels in excess of applicable thresholds, and would not result in a substantial permanent increase in noise in the vicinity of the project site. **(Less Than Significant Impact)**

4.12.2.4 Exposure of Persons to Excessive Noise Levels from Public Airports and Private Air Strips

The project site is located approximately 0.3 mile (1,750 feet) west of the Norman Y. Mineta San Jose International Airport, the nearest airport, and is located just outside Airport's noise zone (the 65 CNEL contour, as set forth by state law) as defined in the Comprehensive Land Use Plan for the airport.[81] The 65 CNEL contour extends as far as Mathew Street near the project site, but the project site itself is located outside of this contour. As previously stated, for industrial land uses, noise levels of up to 70 CNEL are considered normally acceptable. Thus, persons would not be exposed to excessive noise levels from this or any other nearby public airports. In addition, there are no private airstrips located in the vicinity of the project site. **(Less Than Significant Impact)**

[81] Santa Clara County Airport Land Use Commission. 2011. *Comprehensive Land Use Plan, Santa Clara County, Norman Y. Mineta San Jose International Airport.* May 25. Available: https://www.sccgov.org/sites/dpd/DocsForms/Documents/ALUC_SJC_CLUP.pdf. Accessed October 20, 2016.

4.12.3 Conclusion

With the implementation of the proposed mitigation measure, the project would have less-than-significant noise impacts. **(Less Than Significant Impact with Mitigation)**

4.13 POPULATION AND HOUSING

4.13.1 Setting

According to California Department of Finance data, the City has a population of approximately 123,752 residents as of January 1, 2016.[82] ABAG projects that the City's population will increase to 135,000 residents by 2025.[83]

The jobs/housing ratio quantifies the relationship between the number of housing units required as a result of local jobs and the number of residential units available in the City. When the ratio reaches 1.0, a balance is struck between the supply of local housing and local jobs. The jobs/housing ratio is determined by dividing the number of local jobs by the number of employed residents that can be housed in local housing.

The City has fewer employed residents than jobs with a ratio of approximately two jobs per employed resident.[84] Accordingly, most employees within the City are required to seek housing outside the community. ABAG is projecting that jobs in Santa Clara will increase to 134,650 by 2025.[85]

4.13.2 Environmental Checklist and Discussion of Impacts

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the Project:				
1. Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	☐	☐	☒	☐
2. Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒
3. Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒

[82] State of California Department of Finance. *E-1 Population Estimates for Cities, Counties, and the State—January 1, 2015 and 2016.* May 2016. Available: http://www.dof.ca.gov/research/demographic/reports/estimates/e-1/view.php. Accessed: September 27, 2016.

[83] Association of Bay Area Governments (ABAG). *Projections 2013.* December 2013.

[84] Based on the ABAG-projected 106,750 jobs in 2010 and Santa Clara General Plan Housing Element.

[85] ABAG. Projections 2013. December 2013.

4.13.2.1 Impacts to Population and Housing

The project would demolish all of the existing on-site structures and associated surface parking and construct two new four-story data center buildings with supporting parking and an electrical substation. The proposed buildings would be on existing industrial sites and would not displace housing or residents. The project would not induce any direct population or housing growth on the project site.

Because the primary function of the proposed data center buildings would be to house servers, the project would employ a minimal number of employees. Specifically, at full build-out, the proposed project is anticipated to employ approximately 29 employees. This number of employees would have a negligible effect on induced population and housing growth in the City. As such, approval of the project would not result in an appreciable increase in jobs in the City, would not induce substantial population growth in the City, and would not substantially alter the City's jobs/housing ratio. The project, therefore, would result in a less than significant population and housing impact. **(Less Than Significant Impact)**

4.13.3 Conclusion

The project would not result in significant population or housing impacts. **(Less Than Significant Impact)**

4.14 PUBLIC SERVICES

4.14.1 Setting

4.14.1.1 Fire Services

Fire protection and emergency medical response services for the project site are provided by the Santa Clara Fire Department (SCFD). Santa Clara County Emergency Medical Services contracts with Rural Metro to provide emergency medical transport services for the City. The SCFD comprises approximately 130 fire service personnel.[86] The SCFD consists of 10 stations distributed throughout the City. The closest fire station to the project site is Fire Station 1 located at 777 Benton Street, one mile south of the project site.

4.14.1.2 Police Protection Services

Police protection services for the project site are provided by the Santa Clara Police Department (SCPD). In the case of extreme emergency, there is a mutual aid agreement with surrounding jurisdictions. The SCPD has 216 full-time employees, including 149 sworn officers and 67 civilians.[87] In 2015, the SCPD received approximately 56,757 calls for service and 27,583 self-initiated calls for service. The SCPD has two police stations that service the City, with headquarters at 601 El Camino Real and the Northside Substation in Rivermark Village at 3992 Rivermark Parkway. The Northside Substation is a satellite

[86] Andrew Hyatt, Fire Prevention Specialist, City of Santa Clara Fire Department. Fire Prevention and Hazardous Materials Division. Email communication on August 15, 2016.

[87] City of Santa Clara. 2016. Santa Clara Police Department – About Us. Available: http://santaclaraca.gov/government/departments/police-department/about-us. Accessed: September 28, 2016.

police facility that allows officers to conduct training, host meetings, and file police reports.[88] As such, the project site would be served by the SCPD headquarters located 1.3 miles south of the project site.

4.14.1.3 Schools

The Santa Clara Unified School District (SCUSD) provides public education services to students in the City. The SCUSD consists of 16 elementary, three middle, two high schools, one K–8 school, one continuation high school, one alternative high school, one community day school, and one educational options/adult education campus.[89] The SCUSD serves approximately 15,434 K–12 students and 1,731 alternative schools and program of choice students. The project site is in the school district boundaries of the following schools:[90]

- Scott Lane Elementary School at 1925 Scott Boulevard, 0.5 mile southwest of the project site;
- Buchser Middle School at 1111 Bellomy Street, 1.6 mile south of the project site; and
- Santa Clara High School at 3000 Benton Street, 3.2 mile southwest of the project site.

4.14.1.4 Parks

The closest parks to the project site are Reed Street Dog Park (located 0.3 mile south of the project site) and Larry J. Marsalli Park (located 0.6 mile south of the project site).

4.14.1.5 Libraries

Library services for the project site are provided by the Santa Clara City Library (SCCL), which consists of three libraries: the Central Park Library at 2635 Homestead Road, Mission Library Family Reading Center at 1098 Lexington Street, and Northside Branch Library at 695 Moreland Way.[91] The closest library to the project site is the Mission Library Family Reading Center, which is approximately 1.5 miles south of the project site.

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88 City of Santa Clara. 2016. Santa Clara Police Department – Northside Substation. Available: http://santaclaraca.gov/government/departments/police-department/community/northside-substation. Accessed: September 28, 2016.

89 Santa Clara Unified School District. 2016. Fast Facts. Available: http://www.santaclarausd.org/overview.cfm?subpage=122626. Accessed: September 28, 2016.

90 Santa Clara Unified School District. 2016. SchoolFinder – 2015 -16 School Year Boundary Lookup. Available: http://www.schfinder.com/SantaClaraUSD/Lookup.aspx?DistrictID=0635430. Accessed: September 28, 2016.

91 City of Santa Clara. 2016. Santa Clara City Library – About the Library. Available: http://santaclaraca.gov/government/departments/library/about-the-library. Accessed: September 28, 2016.

4.14.2 Environmental Checklist and Discussion of Impacts

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the Project:				
1. Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, the need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:				
Fire Protection?	☐	☐	☒	☐
Police Protection?	☐	☐	☒	☐
Schools?	☐	☐	☒	☐
Parks?	☐	☐	☒	☐
Other Public Facilities?	☐	☐	☒	☐

4.14.2.1 Impacts to Public Services

The project would demolish the existing on-site industrial warehouses, manufacturing, and office facilities as well as associated surface parking and construct two new four-story data center buildings with supporting parking and an electrical substation. As discussed in Section 4.13, *Population and Housing*, the project would not introduce any new residents to the project site. Additionally, because the primary function of the proposed data center buildings would be to house servers, the project would employ a minimal number of employees. Specifically, the proposed project is anticipated to employ approximately 29 employees. This number of employees would have a negligible effect on induced population and housing growth in the City.

Fire and Police Protection. The project would be located on a site that is already served by fire, emergency, and police protection services. The 29 employees that would be generated by the project would have a negligible effect on the service populations of the fire and police stations that serve the project site. The project would be completed in conformance with the Santa Clara Municipal Fire and Environmental Code to reduce potential fire hazards. Because of the nature of the data center function, the entire project site would be secured by fencing, which minimizes criminal activity. The project would also include security cameras and secure lobby entrances with full-time coverage to monitor the site and provide support services, which would further minimize criminal activity. Therefore, while the project could incrementally increase demand for fire, emergency, and police protection services, the project would not result in substantial adverse physical environmental impacts associated with the provision of other new or physically altered fire, emergency, or police service facilities in order to maintain acceptable service ratios, response times, or other performance objectives. **(Less Than Significant Impact)**

Schools. The project would not include new residential uses in the City and, thus, would not directly generate any students. Further, the 29 employees that would be generated by the project would have a negligible effect on the service populations of the schools that serve the project site. Therefore, the project

would not trigger the need for expansion or construction of new schools. **(Less Than Significant Impact)**

Parks. Under the project, approximately 29 employees are anticipated to occupy the building. The project would not substantially increase employment and, as discussed previously, would not include new residential uses in the City. Although it is possible that employees could use Reed Street Dog Park and Larry J. Marsalli Park or other nearby parks, such use would likely be modest given the number of employees proposed under the project and the distance between the site and the parks. Therefore, while the project could incrementally increase demand for park services, the project would not result in substantial adverse physical environmental impacts associated with the provision of other new or physically altered park facilities in order to maintain acceptable service ratios or other performance objectives. **(Less Than Significant Impact)**

Libraries. The project would not include new residential uses in the City and, thus, would not directly generate any new residents in the service area of the SCCL. It is unlikely that the 29 employees proposed under the project would be attracted to the closest library, Mission Library Family Reading Center, during lunch breaks and/or after work due to the 1.5 miles between the site and the library. Therefore, while the project could incrementally increase demand for library services, the project would not result in substantial adverse physical environmental impacts associated with the provision of other new or physically altered library facilities in order to maintain acceptable service ratios or other performance objectives. **(Less Than Significant Impact)**

4.14.3 Conclusion

Based on the above analysis, the project would not substantially increase the demand for fire, emergency, or police protection services within the City and would have no significant impact on the use of school, parks, libraries, or other public facilities. The project would not result in significant impacts on public services or public facilities within the City. **(Less Than Significant Impact)**

4.15 RECREATION

4.15.1 Setting

The City of Santa Clara Parks & Recreation Department (Department) is responsible for maintaining and programming the various parks and recreation facilities, and works cooperatively with public agencies in coordinating all recreational activities within the City. Overall, the Department maintains and operates Central Park (a 52-acre community park), 25 neighborhood parks (122.67 acres), 5 mini parks (2.59 acres), public open space (16.13 acres improved and 40.08 acres unimproved), recreational facilities (14.86 acres, excluding the Santa Clara Golf and Tennis Club and BMX track), recreation trails (3.72 acres) and joint use facilities (47.52 acres) throughout the city totaling approximately 252.53 improved acres. Community parks are over 15 acres, neighborhood parks are 1 to 15 acres and mini parks are typically less than 1 acre in size.

The closest parks to the project site are Reed Street Dog Park (located 0.3 mile south of the project site) and Larry J. Marsalli Park (located 0.6 mile south of the project site).

4.15.2 Environmental Checklist and Discussion of Impacts

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the Project:				
1. Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility will occur or be accelerated?	☐	☐	☒	☐
2. Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?	☐	☐	☐	☒

4.15.2.1 Recreational Impacts

The project would not include new residential uses, and the estimated 29 employees that would be generated by the project (see Section 4.13, *Population and Housing*) would have a negligible effect on the permanent population of the City. Although it is possible that employees could use Reed Street Dog Park, Larry J. Marsalli Park, or other nearby parks, such use would likely be modest given the number of employees proposed under the project. The project would not cause physical deterioration of existing recreational facilities, or require the expansion of existing recreational facilities which might have an adverse effect on the environment. **(Less Than Significant Impact)**

4.15.3 Conclusion

The project would not cause physical deterioration of recreational facilities within the City, nor require the construction of new facilities. The project would not result in significant impacts on recreation. **(Less Than Significant Impact)**

4.16 TRANSPORTATION

Unless otherwise noted, the following discussion of potential impacts related to transportation is based on the *Traffic Evaluation* prepared for the project, which is included in Appendix G of this Initial Study.[92]

4.16.1 Setting

4.16.1.1 Existing Roadway Network

Regional access to the project site is provided by US 101 and Central Expressway (discussed below). Local access to the project site is provided by Lafayette Street and Mathew Street.

Central Expressway is generally a six-lane east-west expressway. In the vicinity of the project site, the Central Expressway has a width of six lanes.

[92] Kimley-Horn. 2016. *Santa Clara Vantage Data Center Traffic Evaluation.* September 29, 2016.

Lafayette Street is a major arterial roadway that generally extends in a north-south direction through Santa Clara. In the vicinity of the project site, Lafayette Street is a five-lane roadway, with two northbound and southbound lanes and a center turn lane.

Mathew Street is a two-lane local roadway that extends east from Lafayette Street in an east-west direction for a distance of approximately 950 feet. It terminates with a cul-de-sac adjacent to the Union Pacific Railroad corridor. Mathew Street provides access to surrounding industrial and commercial areas. Direct access to the project site is provided via three driveways along Mathew Street.

4.16.1.2 Existing Intersection Operations

Level of Service (LOS) is a qualitative assessment of perceived traffic conditions by motorists. LOS generally reflects driving conditions such as travel time and speed, freedom to maneuver, and traffic interruptions. LOS uses quantifiable traffic measures such as average speed, intersection delay, and volume-to-capacity ratio to determine driver satisfaction. LOS is reported for individual intersections and is designated by a range of letters – "A" represents the most favorable conditions (free flow) and "F" represents the least favorable conditions (jammed with excessive delays).

Methodology

Intersection LOS analysis for the AM (7:00 AM – 9:00 AM) and PM (4:00 PM – 6:00 PM) peak hour traffic was conducted for selected intersections following the methodology established in the Transportation Research Board's *Highway Capacity Manual 2000* within the Traffix software. This approach is consistent with the standards and methodology set forth by the City of Santa Clara and Santa Clara County Congestion Management Program (CMP) administered by Santa Clara Valley Transportation Authority (VTA). Intersection LOS analysis was conducted for the following five intersections:

- Lafayette Street and Central Expressway
- Lafayette Street and Walsh Avenue
- Lafayette Street and Martin Avenue
- Lafayette Street/Memorex Drive to Mathew Street
- Lafayette Street and El Camino Real

Based on existing roadway geometries and traffic controls, traffic conditions were evaluated for existing conditions and existing plus project conditions. Existing plus project conditions were assessed by adding traffic volumes generated by the proposed project to existing traffic volumes.

Existing Levels of Service

Existing traffic conditions were evaluated at five intersections along Lafayette Street between Central Expressway and El Camino Real. As shown in Table 4.16-1, all study intersections currently function with acceptable LOS standards.

TABLE 4.17-1
EXISTING INTERSECTION LEVEL OF SERVICE SUMMARY

Intersection	LOS Criteria	Existing AM Peak LOS	Existing PM Peak LOS
Lafayette Street and Central Expressway	E	E+	E
Lafayette Street and Walsh Avenue	D	B	B-
Lafayette Street and Martin Avenue	D	B-	B-

TABLE 4.17-1 EXISTING INTERSECTION LEVEL OF SERVICE SUMMARY			
Intersection	**LOS Criteria**	**Existing AM Peak LOS**	**Existing PM Peak LOS**
Lafayette Street/Memorex Drive to Mathew Street	D	A	B+
Lafayette Street and El Camino Real	E	D	D+
Source: Kimley-Horn. 2016. *Santa Clara Vantage Data Center Traffic Evaluation.* September 29, 2016.			

4.16.1.3 Existing Transit Services

Transit service in the area includes rail service provided by Caltrain and Altamont Corridor Express (ACE), and local bus and shuttle service provided by Santa Clara Valley Transportation Authority (VTA). VTA oversees the Santa Clara County Congestion Management Program (CMP).

Local Bus Service

Two local bus routes and one limited stop bus route serve the area near the project site. VTA Route 58 provides weekday service between West Valley Community College to Alviso, with a stop at Lafayette and Central Expressway in the project vicinity. VTA Route 60 provides weekday and weekend service from Winchester Transit Center to Great America, with a stop west of the project site at Scott Boulevard and Central Expressway. VTA Route 304 operates north and east of the project site on weekdays along Central Expressway and De La Cruz Boulevard and provides limited stops between South San Jose to Sunnyvale Transit Center.[93]

Caltrain

The Santa Clara Caltrain Station is located approximately one mile south of the project site on Railroad Avenue and El Camino Real in Santa Clara. Caltrain commuter rail provides service between San Francisco to Gilroy with headways of between 5- to 60-minutes on weekdays.[94]

Altamont Corridor Express (ACE)

ACE provides service between Stockton and San Jose via eight daily trains on weekdays. In the project vicinity, it stops at the Santa Clara Transit Center, approximately one mile south of the project site on Railroad Avenue and El Camino Real in Santa Clara.[95]

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93 Santa Clara Valley Transportation Authority. *Bus & Rail Map (Effective January 4, 2016).* Available: http://www.vta.org/getting-around/maps/bus-rail-map. Accessed: October 2, 2016.

94 Caltrain. 2016. *Printer-Friendly Caltrain Schedule*. Effective April 4, 2016. Available: <http://www.caltrain.com/Assets/Assets/Schedules/Weekday+Southbound+Printer-Friendly+Schedule+04042016.pdf >. Accessed: September 30, 2016.

95 Altamont Corridor Express (ACE). *Schedule.* Available: http://www.acerail.com/Getting-You-There/Timetable-and-Fare-Chart/train-schedule. Accessed: October 10, 2016.

4.16.1.4 Existing Pedestrian and Bicycle Facilities

Pedestrian Facilities

Pedestrian facilities include sidewalks, crosswalks, and pedestrian signals. There are no sidewalks along Mathew Street, which forms the southern boundary of the project site. A sidewalk is provided along the western side of Lafayette Street. The existing sidewalks in the vicinity of project site have adequate connectivity and provide pedestrians with safe routes to most surrounding land uses in the area.

Bicycle Facilities

Bicycle facilities include paths (Class I), lanes (Class II) and routes (Class III). Bicycle paths are paved trails that are separate from roadways. Bicycle lanes are lanes on roadways designated for bicycle use by striping, pavement legends, and signs. Bicycle routes are roadways designated for bicycle use by signs only. The closest bicycle facility to the project site is the Class II bicycle lane on Central Expressway.[96]

4.16.2 Environmental Checklist and Discussion of Impacts

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the Project:				
1. Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non- motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?	☐	☐	☒	☐
2. Conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways?	☐	☐	☒	☐
3. Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?	☐	☐	☒	☐
4. Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible land uses (e.g., farm equipment)?	☐	☐	☒	☐
5. Result in inadequate emergency access?	☐	☐	☒	☐

[96] City of Santa Clara. 2014. *City of Santa Clara 2010-2035 General Plan*. Updated December 9. Available: http://santaclaraca.gov/government/departments/community-development/planning-division/general-plan. Accessed: September 20, 2016.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the Project:				
6. Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities?	☐	☐	☒	☐

4.16.2.1 Impact Criteria

The LOS standard for a signalized intersection in the City of Santa Clara is LOS D or better during the AM or PM peak periods. Acceptable LOS for signalized intersections that are included in the Santa Clara County CMP is LOS E or better. Intersections that are included in the Santa Clara County CMP are the Lafayette Street and Central Expressway intersection and the Lafayette Street and El Camino Real intersection.

Significant impacts at signalized intersections would occur when the addition of the project traffic would result in the following conditions:

- If the intersection operates at an acceptable LOS without the project and degrades to an unacceptable LOS (i.e. LOS E or F for City intersections and LOS F for CMP intersections).
- If the intersection operates at an unacceptable LOS (LOS E or F for City intersections; LOS F for CMP intersections) without the project and the project increases the average control delay for the critical movements by four (4) or more seconds and increases the critical volume to capacity (v/c) by 0.01 or more.
    - If the addition of the project traffic reduces the amount of average control delay for a critical movement (i.e. negative change in delay) and the project increases the v/c by 0.01 or more.

4.16.2.2 Traffic

Construction

Demolition and construction activities would require use of construction vehicles. In addition, demolition and construction would generate traffic from hauling demolition debris to the recycling facility and nearest landfill. Demolition and construction traffic would also include construction worker commute traffic. Demolition and construction would temporarily increase the number of vehicular trips, including construction worker and hauling truck trips, in the Project vicinity for approximately 15 months. An average of approximately 17 construction-related truck trips would occur daily, with a maximum of 330 trips per day during the peak construction period. The number of construction workers on-site would typically be 65 per day. The peak number of construction workers on-site is expected to be 300.

For purposes of this analysis, it is assumed that construction would occur 8 hours per day five days a week. Many of the construction worker commute trips would be expected to occur prior to morning peak hour and prior to the evening peak hour, which is reflective of typical work schedules in the construction industry. The temporary truck-hauling trips would also generate trips throughout the 8-hour work day and would be scheduled to occur outside of peak traffic hours to the extent feasible. The addition of up to approximately 300 worker trips (600 trips total, including both the trips to and from the project site) and

truck trips during the peak hours would not be a substantial amount of additional traffic and is not anticipated to lower existing LOS to an unacceptable level. Overall, project traffic impacts during demolition and construction would be temporary in nature and less than significant. **(Less Than Significant Impact)**

Operation

The project would demolish all of the existing on-site structures and associated surface parking and construct two new four-story data center buildings with supporting parking and an electrical substation. Vehicle ingress and egress would be provided by four new gated driveways along Mathew Street, and approximately 162 parking spots would be provided within the project site. At full build-out, the proposed project is anticipated to employ approximately 29 employees, including 14 operations personnel, 13 security personnel, and 2 janitors. Security and operations personnel would be employed in shifts, resulting in a maximum of 16 employees on-site in a given day (9 operations personnel, 5 security personnel, and 2 janitors). Visitors and deliveries to the project site would also generate occasional trips.

The need for the preparation of a transportation impact analysis (TIA) for a particular development is based on its estimated trip generation and its effect on surrounding transportation facilities. For this analysis, the criterion used to determine the need for a traffic study is based on the City of Santa Clara trip generation thresholds and level of service standards.

The city requirements for a full traffic study based on trip generation are as follows:

1. New development that generates 100 peak hour trips or more based on the Institute of Transportation Engineers (ITE) Trip Generation Manual;
2. New development that generates less than 100 peak hour trips and impacts a traffic sensitive corridor where an existing intersection exceeds the CMP (LOS) standard or is very close to the standard limit, and
3. New development that generates less than 100 peak hour trips and there is community concern about traffic impacts to a residential neighborhood.

Based on the minimal number of employees and visitors associated with the project, implementation of the project is anticipated to generate less than 100 new peak hour trips. Specifically, the proposed project is estimated to generate 410 daily trips, 37 trips in the AM peak hour, and 37 trips in the PM peak hour.[97] The number of net new project trips would likely be reduced when accounting for the removal of the trips to and from the project site that are currently generated by the approximately 60 existing employees at the project site; therefore, this analysis is conservative. The project would not impact a traffic sensitive corridor, and there is no community concern about traffic impacts to a residential neighborhood. Due to the low number of project-generated trips, a TIA is not required to be prepared for the project. Nonetheless, a *Traffic Evaluation* was prepared for the project. Furthermore, while the project is not required to develop and implement a TDM Program to reduce project trips, the project would include the following elements, or alternative equivalents, in a TDM Program:

- Pre-tax deductions for employee transit costs;
- Flexible work schedules and opportunities to telecommute;
- Bicycle parking and storage facilities;
- Showers for employees walking, biking, or taking alternative modes of transportation to work;
- Video conferencing software;

[97] Kimley-Horn. 2016. *Santa Clara Vantage Data Center Traffic Evaluation*. September 29, 2016.

- Four electric vehicle charging stations that would serve nine electric vehicle parking spots;
- Preferred carpool/vanpool and electric vehicle parking; and
- On-site food and beverage amenities to reduce off-site traffic trips.

Overall, due to the minimal amount of employees and visitors at the project site as well as the proposed TDM Program, the project would have minimal traffic impacts during operation. **(Less Than Significant Impact)**

4.16.2.3 Existing Plus Project Intersection Operations

Existing plus project intersection LOS was evaluated for the proposed project at five intersections along Lafayette Street between Central Expressway and El Camino Real. As shown in Table 4.16-2, all study intersections would function within acceptable LOS standards under the existing plus project operational scenario, and no change in LOS would occur compared to existing conditions (refer to Table 4.16-1). As a result, the proposed project would have minimal transportation LOS impacts to signalized intersections. **(Less Than Significant Impact)**

TABLE 4.17-2
EXISTING PLUS PROJECT INTERSECTION LEVEL OF SERVICE SUMMARY

Intersection	LOS Criteria	Existing Plus Project AM Peak LOS	Existing Plus Project PM Peak LOS
Lafayette Street and Central Expressway	E	E+	E
Lafayette Street and Walsh Avenue	D	B	B-
Lafayette Street and Martin Avenue	D	B-	B-
Lafayette Street/Memorex Drive to Mathew Street	D	A	B+
Lafayette Street and El Camino Real	E	D	D+

Source: Kimley-Horn. 2016. *Santa Clara Vantage Data Center Traffic Evaluation.* September 29, 2016.

4.16.2.4 Transit Operations and Pedestrian/Bicycle Facilities

Transit Operations

Employees and visitors generated by the proposed project would result in a minimal increase in transit demand. It is anticipated that VTA, Caltrain, ACE, and the existing bus services can accommodate an increase in ridership demand resulting from the project. In addition, regular bus service provided by VTA would continue as usual throughout demolition and after the project is completed. Caltrain and ACE service would also not be affected by construction or operation of the project. Therefore, the proposed project would not alter existing transit facilities or conflict with the operation of existing or planned facilities. In addition the project would not conflict with any adopted programs or policies associated with transit. **(Less Than Significant Impact)**

Pedestrian and Bicycle Facilities

As previously discussed, there are sidewalks and crosswalks in the vicinity of the project site that provide access to nearby transit. The closest bicycle facility to the project site is the Class II bicycle lane on Central Expressway. Although the environment may be less appealing for bicyclists and pedestrians at the project site during demolition and construction, the project would not directly obstruct any existing

sidewalks or bicycle facilities. Employees and visitors generated by the project would result in a minimal increase in demand for pedestrian and bicycle facilities in the vicinity of the project site. However, the project would not result in conflicts with pedestrians in the vicinity of the project site. In addition, the project would not alter existing bicycle facilities and would not conflict with existing or planned bicycle facilities. The increase in bicycle usage on the nearby facilities is not anticipated to exceed the capacity of those facilities. Therefore, the project would not result in unsafe conditions for bicyclists. In addition, the project would not conflict with any adopted programs or policies associated with pedestrian and bicycle facilities. **(Less Than Significant Impact)**

4.16.2.5 Other Transportation Issues

Airport Operation

The project site is located approximately 0.3 mile west of the Norman Y. Mineta San Jose International Airport, and is within the Norman Y. Mineta San Jose International Airport Influence Area. The height of the proposed buildings to the top of the metal screen would be approximately 107.5 feet above ground surface. Airport safety hazards associated with the Norman Y. Mineta San Jose International Airport were evaluated according to airport safety zones and Federal Aviation Regulations Part 77 airspace surfaces.[98] The project site is outside of all airport safety zones with the exception of the traffic pattern zone, which restricts development types with high concentrations of people (e.g. sports stadiums). Additionally, the proposed project would not intrude upon the Part 77 airspace surface for the Norman Y. Mineta San Jose International Airport, which establishes a maximum structure height of 212 feet (above mean sea level) for the project site.[99] In addition, in accordance with FAA requirements, the project applicant would complete and submit all necessary notices and documentation to the FAA to obtain the necessary approvals for construction in compliance with FAA's Notice of Proposed Construction requirements. Due to compliance with applicable regulations set forth by the Norman Y. Mineta San Jose International Airport and the FAA, the project would not result in a change in air traffic patterns or obstruct airport operations. **(Less Than Significant Impact)**

Emergency Access and On-Site Circulation

Vehicle ingress and egress would be provided by four new gated driveways along Mathew Street. The central entry would provide the main passenger vehicle and pedestrian access to the site, while the east and west entries are intended for service vehicles related to loading and deliveries. The service vehicles would drive around the north portion of the project site and exit through the middle exit driveway. Based upon a review of Figure 3.0-4 in Section 3.0, *Project Description*, the project would not increase on-site hazards due to the design of the proposed building, parking, or other on-site improvements, and would not result in inadequate emergency access. In addition, truck turning movements at the east and west entry driveways would be adequate. **(Less Than Significant Impact)**

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98 A Part 77 airspace surface is an imaginary surface of a takeoff and landing area of an airport stablished for the airport under 14 CFR Part 77.24 as a means to identify objects that are obstructions to air navigation.

99 Santa Clara County Airport Land Use Commission. 2011. *Norman Y. Mineta San Jose International Airport Comprehensive Land Use Plan.* Available: <https://www.sccgov.org/sites/dpd/DocsForms/Documents/ALUC_20110525_SJC_CLUP.pdf >. Accessed: September 26, 2016.

On-Site Queuing

Queue lengths were evaluated for the southbound and eastbound approaches at the central entry and exit. The queue lengths for both southbound and eastbound approaches would be minimal and, therefore, the project would not cause any queuing impacts. **(Less Than Significant Impact)**

Parking

The City of Santa Clara's Zoning Ordinance does not provide a minimum number of parking spaces for a data center. However, the proposed project is estimated to provide enough parking for its employees and visitors. To provide a conservative analysis, it was assumed that each of the 29 employees would arrive on-site at the same time and each would drives individually (requiring 29 employee parking spaces). Approximately 162 parking spots would be provided within the project site, which would allow for 133 parking spaces for visitors to the project site. It is not anticipated that the 133 parking spaces would be necessary for visitors to the site on a consistent basis. Therefore, the proposed parking supply would be adequate to satisfy the City's parking requirements. **(Not a CEQA Impact; Provided for Informational Purposes Only)**

4.16.3 Conclusion

The project would not result in significant transportation impacts. **(Less Than Significant Impact)**

4.17 UTILITIES AND SERVICE SYSTEMS

Unless otherwise noted, the following discussion of existing utilities in the vicinity of the project site is based on the *Existing Utilities Plan* and the *Due Diligence Report* prepared for the project.[100,101]

4.17.1 Setting

4.17.1.1 Water Service

Potable Water

The water system in the City is operated and maintained by the City's Water and Sewer Utility. This system is supplied with potable water from three sources: Santa Clara Valley Water District (SCVWD), which gets its water from the San Joaquin Delta, local surface water sources, and local groundwater; the San Francisco Public Utilities Commission (SFPUC), which gets its water from the Hetch Hetchy system; and 26 groundwater wells operated by the City's Water and Sewer Utility. The three sources are used interchangeably or are blended together. In 2015, about 35 percent of the City's potable water came from the imported treated water supplies (the SCVWD and SFPUC).[102] Groundwater made up approximately 65 percent of the City's potable water supply in 2015. The water system in the City consists of more than 335 miles of distribution mains, the 26 groundwater wells discussed above, and seven storage tanks with approximately 28.8 million gallons of water capacity. According to the 2015 Urban Water Management

[100] Planning Submittal for the McLaren Project, dated September 16, 2016.

[101] Kier & Wright Civil Engineers & Surveyors, Inc., 2016. *Vantage Data Center Due Diligence Report*. July 20, 2016.

[102] City of Santa Clara. 2016. *2015 Urban Water Management Plan*. Adopted November 22. Available: http://santaclaraca.gov/home/showdocument?id=48088. Accessed: December 13, 2016.

Plan (UWMP) prepared for the City, which the Santa Clara City Council approved and adopted on November 22, 2016, the citywide demand for potable water in 2015 was 17,620 acre-feet.[103]

Water service to the project site is provided via a 10-inch potable water line under Mathew Street.

Recycled Water

Recycled water is supplied from South Bay Water Recycling (SBWR), which provides advanced tertiary treated water from the San Jose – Santa Clara Regional Wastewater Facility (formerly known as the San Jose/Santa Clara Water Pollution Control Plant) (discussed in more detail below). In 2015, recycled water purchased from the SBWR made up approximately 17 percent of the overall water use in the City.[104] The City of Santa Clara recycles approximately one percent of its water through non-potable uses by businesses, industries, parks, and schools along pipeline routes. The City's recycled water program delivers recycled water throughout the City for landscaping, parks, public services, and businesses. According to the 2015 UWMP, the citywide recycled water demand in 2015 was 3,529 acre-feet.[105]

A 12-inch recycled water line is located under Mathew Street. Currently, there are no recycled water laterals serving the project site.

4.17.1.2 Wastewater Services

The City of Santa Clara Departments of Public Works and Water and Sewer Utilities are responsible for the wastewater collection system within the City. Wastewater is collected by sewer systems in Santa Clara and is conveyed by pipelines to the San Jose-Santa Clara Regional Wastewater Facility (Regional Wastewater Facility). The Regional Wastewater Facility is owned jointly by the Cities of San Jose and Santa Clara and is operated by the City of San Jose's Department of Environmental Services.[106] The facility is one of the largest advanced wastewater treatment facilities in California and serves over 1.4 million people in San Jose, Santa Clara, Milpitas, Campbell, Cupertino, Los Gatos, Saratoga, and Monte Sereno.[107] The Regional Wastewater Facility provides primary, secondary, and tertiary treatment of wastewater. The Regional Wastewater Facility treats an average of 110 million gallons of wastewater per day (mgd), which is 57 mgd (or 35 percent) under its 167-mgd treatment capacity.[108] Currently, the Regional Wastewater Facility is operating under a 120 million gallon per day dry weather effluent flow constraint. Approximately 13 percent of the Regional Wastewater Facility's effluent flows to SBWR's adjacent pump station for non-potable uses and the remainder flows into San Francisco Bay.[109]

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103 City of Santa Clara. 2016. *2015 Urban Water Management Plan*. Adopted November 22. Available: http://santaclaraca.gov/home/showdocument?id=48088. Accessed: December 13, 2016.

104 City of Santa Clara. 2016. *2015 Urban Water Management Plan*. Adopted November 22. Available: http://santaclaraca.gov/home/showdocument?id=48088. Accessed: December 13, 2016.

105 City of Santa Clara. 2016. *2015 Urban Water Management Plan*. Adopted November 22. Available: http://santaclaraca.gov/home/showdocument?id=48088. Accessed: December 13, 2016.

106 City of San José Environmental Services. About Us. Available at: http://www.sanjoseca.gov/index.aspx?NID=4544. Accessed: October 14, 2016.

107 City of San José Environmental Services. San José/Santa Clara Water Pollution Control Plant. Available at: http://www.sanjoseca.gov/index.aspx?NID=1663. Accessed: October 14, 2016.

108 City of San José Environmental Services. San José/Santa Clara Water Pollution Control Plant. Available at: http://www.sanjoseca.gov/index.aspx?NID=1663. Accessed: October 14, 2016.

109 City of San José Environmental Services. San José/Santa Clara Water Pollution Control Plant. Available at: https://www.sanjoseca.gov/DocumentCenter/View/34681. Accessed: October 14, 2016.

The San José-Santa Clara Regional Wastewater Facility is currently operating under a 120 mgd dry weather effluent flow constraint. This requirement is based upon the State Water Resources Control Board and the Regional Water Quality Control Board concerns over the effects of additional freshwater discharges from the Regional Wastewater Facility on the saltwater marsh habitat, and pollutant loading to the Bay. The NPDES permit for the Regional Wastewater Facility, which includes wastewater discharge requirements, was reissued September 2014.[110]

Wastewater from the project site discharges to an 8-inch sanitary sewer line (lateral), 14-inch sanitary sewer line (lateral), 10-inch sanitary sewer line (lateral), 12-inch sanitary sewer line (lateral), and a 4-inch sanitary sewer line (lateral). Wastewater then discharges to a 15-inch and 18-inch vitrified clay pipe (main) under Mathew Street. Public sanitary sewer lines that serve the project site are maintained by the City of Santa Clara Sewer Utility.

4.17.1.3 Storm Drainage

The City of Santa Clara owns and maintains the municipal storm drainage system in the vicinity of the project site. The City's storm drain system consists of curb inlets that collect and channel surface water, from rainfall and other sources, into a series of pipelines beneath City roadways. Stormwater from the project site drains by a combination of surface flow and underground pipes (including 6-inch pipes and a 12-inch lateral) towards Mathew Street and ultimately discharges into a 33-inch storm drain under Mathew Street.

4.17.1.4 Solid Waste

Solid waste and recycling collection for businesses at commercial and institutional properties in the City of Santa Clara is provided by Mission Trail Waste Systems through a contract with the City.[111] Newby Island Landfill, located in San José, provides disposal capacity to nearby cities, including San José, Milpitas, Santa Clara, Cupertino, Los Altos, and Los Altos Hills.[112] The City has an arrangement with the owners of the Newby Island Landfill to provide disposal capacity for the City through 2024, as well as other landfills located outside of the County, according to the City's General Plan.[113,114] The Santa Clara County Integrated Waste Management Plan estimates there is adequate waste capacity through its planning horizon of 2024.[115] The Newby Island Landfill has a permit to accept a maximum of 3,260 tons of solid waste per day and has a remaining disposal capacity of 21.2 million cubic yards (cy).[116]

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110 San José-Santa Clara Regional Wastewater Facility. 2015. *2015 Annual Self-Monitoring Report. Reporting Period January 1- December 31, 2015*. Available at: http://www.sanjoseca.gov/ArchiveCenter/ViewFile/Item/2797. Accessed: October 14, 2016.

111 City of Santa Clara. 2015. Commercial Garbage & Recycling. Available: http://santaclaraca.gov/index.aspx?page=2687. Accessed: October 14, 2016.

112 City of San José. 2014. Planning Commission Staff Report: PD14-014. Available: http://www.sanjoseca.gov/DocumentCenter/View/38008. December 10. Accessed: October 14, 2016.

113 City of Santa Clara. 2010. Resolution No. 10-7737. Available: http://santaclaraca.gov/modules/showdocument.aspx?documentid=2744. Accessed: October 14, 2016.

114 City of Santa Clara. 2014. *City of Santa Clara 2010-2035 General Plan*. Updated December 9. Available: http://santaclaraca.gov/home/showdocument?id=13934. Accessed: October 14, 2016.

115 City of Santa Clara. 2011. *Integrated Final Environmental Impact Report, City of Santa Clara Draft 2010-2035 General Plan*. January. Available: http://santaclaraca.gov/home/showdocument?id=12900. Accessed: October 14, 2016.

116 CalRecycle. n.d.a. Facility/Site Summary Details: Newby Island Sanitary Landfill (43-AN-0003). Available: http://www.calrecycle.ca.gov/SWFacilities/Directory/43-AN-0003/Detail/. Accessed: October 14, 2016.

The City of Santa Clara has a waste diversion goal of 50 percent set by the Santa Clara County Integrated Waste Management Plan. As of 2011 (the most recent year for which data approved by CalRecycle is available), the City is exceeding its diversion goal.[117]

4.17.1.5 Natural Gas and Electricity

Pacific Gas and Electric (PG&E) provides natural gas and electrical services to the vast majority of Northern California. However, some cities, like Santa Clara, have historically provided their own municipal electric supply. The City of Santa Clara's municipal electric utility, SVP, provides electric utility power to all residences as well as commercial and industrial businesses in the City.

PG&E provides gas service to the project site via a 4-inch and 6-inch main line that extends under Mathew Street. SVP provides electrical service through overhead conduits on Mathew Street.

4.17.1.6 Applicable Plans, Policies, and Regulations

Title 24

In accordance with California Code of Regulations Title 24, Part 6 (Last amended in 2016, effective January 1, 2017), buildings constructed after June 30, 1977, must comply with standards identified in Title 24 of the California Code of Regulations. Title 24 requires the inclusion of state-of-the-art energy conservation features in building design and construction, including the incorporation of specific energy-conserving design features, use of non-depletable energy resources, or a demonstration that buildings would comply with a designated energy budget. Part 11 of the Title 24 Building Standards Code is referred to as the California Green Building Standards Code (CALGreen Code). Unless otherwise noted in the regulation, all newly constructed buildings in California are subject to the requirements of the CALGreen Code.

General Plan Policies

The Santa Clara General Plan includes numerous policies related to utilities and service systems. With respect to energy and water use, General Plan Policy 5.10.3-P5 states that energy consumption is to be reduced through sustainable construction practices, materials and recycling and General Plan Policy 5.10.3-P6 promotes sustainable buildings and land planning for all new development, including programs that reduce energy and water consumption in new development. In addition, with respect to water use, General Plan Policy 5.10.4-P1 promotes water conservation through development standards, building requirements, landscape design guidelines, education, compliance with the State Water Conservation Landscaping Ordinance and other applicable City-wide policies and programs. With respect to solid waste, General Plan Policy 5.10.1-P8, which aims to increase to an 80 percent reduction for solid waste tonnage by 2020, or as consistent with the Climate Action Plan.

Santa Clara City Code

According to Santa Clara City Code Section 8.25.285 (referred to as the City's Construction & Demolition Debris Recycling Program), applicants seeking building or demolition permits for projects greater than 5,000 sf are required to recycle at least 50 percent of its discards.

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[117] CalRecycle. n.d.b. Jurisdiction Diversion/Disposal Rate Summary (2007 – Current). Available: http://www.calrecycle.ca.gov/LGCentral/reports/diversionprogram/JurisdictionDiversionPost2006.aspx. Accessed: October 14, 2016.

4.17.2 Environmental Checklist and Discussion of Impacts

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the Project:				
1. Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?	☐	☐	☒	☐
2. Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	☐	☐	☒	☐
3. Require or result in the construction of new stormwater drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	☐	☐	☒	☐
4. Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?	☐	☐	☒	☐
5. Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	☐	☐	☒	☐
6. Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?	☐	☐	☒	☐
7. Comply with federal, state and local statutes and regulations related to solid waste?	☐	☐	☒	☐

The water demand, wastewater generation, and energy demand analysis provided below is based on estimates provided by the project engineers.

4.17.2.1 Water Supply

Potable Water

It is anticipated that demolition and construction activities for the project would use recycled water to the extent feasible, and therefore would not result in a substantial increase in demand for potable water. The project engineer estimates that, during operation, indoor uses at the project site would generate a potable water demand of approximately 20.7 million gallons of water per year or 63.7 acre-feet per year. The project would increase water demand on the project site beyond existing conditions and may increase demand beyond the anticipated demand for the site based on the maximum FAR allowable for the project site. However, the project would not substantially increase demand beyond anticipated demand in the City's General Plan. Specifically, the total annual potable water demand of the project (63.7 acre-feet per year) would represent less than 0.4 percent of the citywide potable water demand in 2015 (17,620 acre-feet). Furthermore, the project would comply with all applicable City and State water conservation

(indoor and outdoor) measures, including Title 24, Part 6, California Energy Code baseline standard requirements for energy efficiency, based on the 2016 Energy Efficiency Standards requirements, and the 2016 California Green Building Standards Code, commonly referred to as CALGreen. Therefore, the water demand generated by the project would not exceed the capacity of the City's Water and Sewer Utility to provide water services to the project site and adequate potable water supply services are available to serve the project. **(Less Than Significant Impact)**

Recycled Water

Demolition and construction activities for the project would result in a temporary increase in recycled water demand. These activities (e.g., dust control, mixing and placement of concrete, equipment and site cleanup, irrigation for plant and landscaping establishment, and water line testing and flushing) would occur periodically throughout the project's construction period. Recycled water demand during construction would be minimal and temporary. Therefore, adequate recycled water supply services are available to serve the project during demolition and construction. During operation, the project would use recycled water for irrigation and in the cooling towers, which can be accommodated by the existing recycled water system serving the site and would represent a beneficial environmental impact by reducing the project's demand for potable water. The project engineer estimates that the cooling towers would generate a recycled water demand of 143.3 million gallons of water per year or 439.8 acre-feet per year. The project would not substantially increase demand beyond anticipated demand in the City's General Plan. Specifically, the total annual recycled water demand of the project (439.8 acre-feet per year) would represent approximately 12.5 percent of the citywide recycled water demand in 2015 (3,529 acre-feet). Therefore, the water demand generated by the project would not exceed the capacity of the City's Water and Sewer Utility to provide water services to the project site and adequate recycled water supply services are available to serve the project. **(Less Than Significant Impact)**

4.17.2.2 Wastewater

The project's wastewater flow would be treated by the Regional Wastewater Facility, which is monitored by the San Francisco Bay RWQCB to ensure compliance the facility's NPDES wastewater discharge permit. The Regional Wastewater Facility is permitted to treat the industrial and sanitary waste flows that would be generated by the project. Further, as discussed below, the Regional Wastewater Facility has capacity to accommodate the project's estimated wastewater flow. Therefore, the project would not exceed wastewater treatment requirements of the San Francisco Bay RWQCB. **(No Impact)**

Demolition and construction activities for the project would result in a temporary increase in wastewater generation as a result of on-site construction workers. Wastewater generation would occur periodically throughout the project's construction period. However, this increase would be temporary and nominal. In addition, construction workers typically utilize portable toilets, which would not contribute to flows to the City's wastewater conveyance system. Therefore, demolition and construction activities for the project would result in a minimal increase in wastewater generation and would not be anticipated to have a substantial adverse impact on available wastewater treatment or conveyance capacity. **(Less Than Significant Impact)**

As previously stated, the Regional Wastewater Facility treats an average of 110 mgd, which is 57 mgd (or 35 percent) under its 167-mgd treatment capacity. Currently, the Regional Wastewater Facility is operating under a 120 mgd dry weather effluent flow constraint. For the purposes of the Sanitary Sewer Capacity Evaluation, it is conservatively assumed that all of the project's water demand would result in

wastewater.[118] As a result, the project would generate approximately 164 million gallons per year (or an average of 449,315 gpd) of wastewater under worst possible conditions. According to the project engineers, the actual project design maximum is approximately 190,000 gpd of wastewater. Effluent flows from the Regional Wastewater Facility would be reduced to the extent that the project would comply with mandatory water conservation (indoor and outdoor) measures, which would also serve to reduce the wastewater generated by the project, set forth in CALGreen. With implementation of the project, the Regional Wastewater Facility would still operate below the required 120 mgd constraint and would not increase the need for wastewater treatment beyond the capacity of the Regional Wastewater Facility of the City of Santa Clara's allocation at the Regional Wastewater Facility. Therefore, the Regional Wastewater Facility has the ability to treat wastewater generated by the project.

The project would increase flows to the wastewater conveyance infrastructure that serves the project site. According to the Sanitary Sewer Capacity Evaluation prepared for the project, there is adequate capacity in the wastewater conveyance system for the flows that would be generated by the project and no improvements would be needed.[119] **(Less Than Significant Impact)**

4.17.2.3 Storm Drainage Impacts

As discussed in Section 4.9, *Hydrology and Water Quality*, implementation of the project would result in an approximately 21 percent decline in impervious surfaces at the project site. Stormwater on site would drain into biotreatment areas located within the project site. The biotreatment areas would treat the stormwater before draining into the City of Santa Clara stormwater system. On-site drainage facilities would be designed to meet City of Santa Clara standards and would drain to the existing storm drain system. Therefore, runoff from the project site would not exceed the capacity of the City's storm water drainage system. **(Less Than Significant Impact)**

4.17.2.4 Solid Waste Impacts

Demolition and construction activities for the project would result in a temporary increase in solid waste generation. Solid waste generation would occur periodically throughout the project's construction period. However, this increase would be temporary and nominal. In addition, 50 percent of the construction and demolition materials would be required to be recycled in conformance with the City of Santa Clara's Construction and Demolition Program. Furthermore, the applicant has expressed a preference to use a construction contractor that has consistently achieved diversion rates that exceed the minimum requirement of 50 percent. Therefore, demolition and construction activities for the project would not result in a significant increase in solid waste and recyclable materials generated within the City and would not require that new landfill facilities be contracted with or constructed to serve the project. **(Less Than Significant Impact)**

Operation of the project would generate approximately 140 pounds of solid waste per day.[120] This increase represents 0.002 percent of the maximum daily intake allowed at the Newby Island Landfill

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[118] RMC Water and Environment. 2017. *Sanitary Sewer Capacity Evaluation for the McLaren Data Center Development at 651, 725-795, and 825 Mathew Street (APN: 224-40-001, 224-40-002, and 224-40-011)*. January 20. See Appendix I of this Initial Study.

[119] RMC Water and Environment. 2017. *Sanitary Sewer Capacity Evaluation for the McLaren Data Center Development at 651, 725-795, and 825 Mathew Street (APN: 224-40-001, 224-40-002, and 224-40-011)*. January 20. See Appendix I of this Initial Study.

[120] CalRecycle. n.d.c. Estimated Solid Waste Generation Rates for Commercial Establishments. Available: http://www.calrecycle.ca.gov/wastechar/wastegenrates/Commercial.htm. Accessed: October 16, 2016. Solid waste generation was estimated for the project at a rate of six pounds per 1,000 square feet per day for office

(3,260 tons). As previously discussed, the City has an arrangement with the owners of the Newby Island Landfill to provide disposal capacity for the City through 2024, as well as other landfills located outside of the County, according to the City's General Plan. Newby Island Landfill is currently in the process of seeking authorization from San José to expand the permitted capacity and accept an additional 15.12 million cy and extend its closure date to 2041.[121] If the landfill is not available to accept waste, the City will prepare a contract with another landfill, such as Guadalupe Mines in San José, which is anticipated to close in 2048. In addition, the City is currently exceeding its waste diversion goal of 50 percent. In accordance with the CALGreen Code (Section 5.410.1), the project would provide readily accessible areas that serve the entire building and are identified for the depositing, storage and collection of nonhazardous materials for recycling. The project would contribute to and would not preclude the City's achievement of the City's goal to increase the Citywide diversion rate to 80 percent. Increased recycling within the City would extend the useful life of the landfill. Therefore, the project would not result in a significant increase in solid waste and recyclable materials generated within the City and would not require that new landfill facilities be contracted with or constructed to serve the project. **(Less Than Significant Impact)**

4.17.2.5 Natural Gas and Electricity

Natural Gas

Natural gas is not typically used during construction. Therefore, construction of the project would not require the construction of any additional natural gas service facilities by PG&E. **(Less Than Significant Impact)**

PG&E owns natural gas distribution facilities within the City. Natural gas service to the project site would be provided to meet the needs of the project as required by California Public Utilities Commission, which obligates PG&E to provide service to its existing and potential customers. The project would be served by existing natural gas infrastructure. Therefore, operation of the project would increase natural gas use, but would not require the construction of any additional natural gas service facilities by PG&E. **(Less Than Significant Impact)**

Electricity

SVP provides electric utility power to all residences as well as commercial and industrial businesses in the City. Electric service to the project site would be provided to meet the needs of the project as required by California Public Utilities Commission, which obligates SVP to provide service to its existing and potential customers. Demolition and construction activities for the project would result in a temporary increase in demand for electricity. Electricity demand would occur periodically throughout the project's construction period. However, this increase would be temporary and nominal. Therefore, demolition and construction activities for the project would increase electricity use, but would not require the construction of any additional electricity service facilities by SVP. **(Less Than Significant Impact)**

space based on a source from April 1992. There would be approximately 11,660 square feet of office space in each building, for a total of 23,320 square feet of office space.

[121] Bauer, Ian. 2016. *San Jose To Study Odors From Newby Island Landfill Before Considering Any Expansion.* Available: http://www.mercurynews.com/milpitas/ci_29385378/san-jose-study-odors-from-newby-islandlandfill. Accessed: October 16, 2016.

On an annual basis, the project would consume 665,760 MWh per year at full buildout.[122] To provide the electricity that would be consumed by the project, SVP is planning to restructure the electrical loop that serves the project site (the Southern Loop), and expects this project to be completed in 2020. SVP has confirmed that upon completion of SVP's electrical loop restructuring and the onsite substation proposed as part of the project, it can serve the project's anticipated electricity demand.[123] Therefore, impacts related to electricity service would be less than significant. Additional discussion of the project's energy demand is provided in Section 4.18, *Mandatory Findings of Significance*. **(Less Than Significant Impact)**

4.17.3 Conclusion

The project would have a less-than-significant impact on water, wastewater, stormwater, solid waste, and natural gas and electricity. **(Less Than Significant Impact with Mitigation)**

4.18 MANDATORY FINDINGS OF SIGNIFICANCE

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the Project:				
1. Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?	☐	☒	☐	☐
2. Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?	☐	☒	☐	☐
3. Does the project have the potential to achieve short-term environmental goals to the disadvantage of long-term environmental goals?	☐	☐	☒	☐
4. Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?	☐	☒	☐	☐

[122] Ramboll Environ US Corporation. 2016. *Air Quality and Greenhouse Gas Technical Report, Vantage Data Centers, 651, 725, 825 Mathew Street, Santa Clara, California, 95050.* November.

[123] Silicon Valley Power. 2016. Letter addressed to Justin Thomas regarding 725 and 651 Mathew Street, Santa Clara, CA. November 3. See Appendix H of this Initial Study.

4.18.1 Findings

The project would result in no impacts to agricultural and forest resources and mineral resources. The project would result in less-than significant impacts to aesthetics, GHG, land use, population and housing, public services, recreation, transportation, and utilities and service systems.

With the implementation of the proposed mitigation measures described in air quality, biological resources, cultural resources, geology and soils, hazards and hazardous materials, hydrology and water quality, and noise sections of this document (refer to *Section 4, Environmental Setting, Checklist, and Discussion of Impacts*), the project would not result in significant environmental impacts.

4.18.2 Cumulative Impacts

A number of projects have been recently approved or are reasonably foreseeable in the City of Santa Clara. These include the development or redevelopment of residential, industrial, and commercial uses.[124] While these individual projects may result in significant impacts in particular issue areas, it is assumed that the projects will comply with existing regulations and statutes, and will incorporate mitigation measures to reduce potential impacts to a less-than-significant level, if necessary. For example, all projects are required to incorporate best management practices and comply with local and regional regulations to reduce impacts to water quality to the maximum extent feasible.

4.18.2.1 Construction Impacts

With mitigation, the project would also result in less than significant impacts from the effects of project construction on air quality, noise, transportation, and water quality. The construction of the anticipated or pending projects in the area would result in short-term impacts at various locations throughout the area. The majority of the cumulative project sites, however, are scattered throughout the City, their construction schedules are different, and their construction is likely to occur over the next several years. Two notable projects in the city are projects proposed by the project applicant: the 2880 Northwestern Parkway (Building V5) Data Center Project and 2895 Northwestern Parkway (Building V6) Data Center Project, both located approximately 1.5 miles northwest of the project site. The Building V5 Project proposes to demolish an existing surface parking lot and construct a four-story, 109,000-sf data center building, expand an existing electrical substation, and construct a paved surface parking lot. In total, construction would be expected to take approximately 15 months and may overlap with construction of the project. The Building V6 Project proposes to demolish an existing single-story, vacant commercial building and adjacent surface parking lot and construct a two-story, approximately 69,000-sf data center and surface parking lot. In total, construction would be expected to take approximately 9 months and may overlap with construction of the project. The project applicant would coordinate construction activities accordingly to avoid overlap of high disturbance activities. Further, as noted above, all three sites are located in a commercial/light industrial area, and there are no sensitive receptors in the vicinity of any sites. In addition, related projects, including the Building V5 and Building V6 Projects, would generally be required to implement standard measures and controls to further reduce construction impacts. Given

[124] City of Santa Clara. No date. Development Projects Story Map: Where what's possible becomes reality. Available: <http://missioncity.maps.arcgis.com/apps/MapTour/index.html?appid=5afdbed13fad458cb6288c46a0bad060#>. Accessed: December 1, 2016.

these factors, the construction impacts associated with the pending projects would not result in a significant cumulative impact.

4.18.2.2 Energy Impacts

Data centers are, by nature, large consumers of electricity. As stated in Section 4.17, *Utilities and Service Systems*, the project would consume an estimated 665,760 MWh per year at full buildout. While this would represent a substantial increase in consumption from existing conditions, the project's energy usage would not be wasteful, inefficient, or unnecessary. With today's rapid advances in information technology, there is an immense and growing need for data storage. Thus, the project's energy usage would fuel a necessary service. The project would incorporate numerous efficiency measures to avoid the wasteful use of energy, including energy star appliances, energy use meters, outside air economizers, and LED lighting. Further, electricity for the project would be provided by SVP, which has an energy portfolio that is largely comprised of renewable sources. Santa Clara currently has ownership interest, or has purchase agreements for 1,079.15 MW of electricity.[125] This capacity far exceeds City of Santa Clara's current peak electricity demand of approximately 522 MW. No new generation peak capacity is necessary to meet the capacity requirements of new construction, or redeveloped facilities within the City to meet the near or projected future demand.

4.18.2.3 Air Quality and Greenhouse Gas Emission Impacts

Past, present and future development projects contribute to the region's adverse air quality impacts on a cumulative basis. By its very nature, air pollution is largely a cumulative impact. No single project is sufficient in size to, by itself, result in nonattainment of ambient air quality standards. Instead, a project's individual emissions contribute to existing cumulatively significant adverse air quality impacts. If a project's contribution to the cumulative impact is considerable, then the project's impact on air quality would be considered significant. As discussed in Section 4.3, *Air Quality*, the total increase in average daily emissions of criteria pollutants from operation of the project and cumulative air toxics health hazards at the closest sensitive receptor are estimated to be below the significance thresholds used by the City of Santa Clara in this Initial Study. Therefore, the project would not result in a cumulative air quality impact.

Similar to regulated air pollutants, GHG emissions and global climate change also represent cumulative impacts. The project's contribution to global climate change is discussed in Section 4.7, *Greenhouse Gas Emissions*, in terms of the project's GHG emissions. With implementation of the efficiency measures included in the project in combination with the green power mix utilized by SVP, the project would comply with the City's CAP, and would not conflict with plans, policies or regulation adopted for the purpose of reducing the emissions of GHGs.

4.18.3 Short-term Environmental Goals vs. Long-term Environmental Goals

The project involves redevelopment of an urban site and would not result in the conversion of a greenfield site to urban uses or otherwise commit resources in a wasteful or inefficient manner. The energy efficiency of servers within the proposed datacenter could be improved as new technology becomes available while the building shell remains the same. The project would not induce substantial job or population growth or result in a large or irretrievable commitment of resources.

[125] Silicon Valley Power, City of Santa Clara. *The Silicon Valley Power Resources Map*. Available: <http://www.siliconvalleypower.com/home/showdocument?id=5763>. Accessed: December 1, 2016.

4.18.4 Direct or Indirect Adverse Effects on Human Beings

As noted previously, the project could result in hazardous materials impacts during construction that could have health effects on people. With the implementation of the proposed mitigation measures described in Section 4.8, *Hazards and Hazardous Materials*, which would reduce possible hazardous materials impacts from contaminated soil and/or groundwater, the project would not result in substantial adverse effects on human beings, individually or cumulatively.

4.18.5 Conclusion

The project would not degrade the quality of the environment, reduce habitat for plant or animal species, or eliminate examples of periods of California history. The project would not make a cumulatively considerable contribution towards a significant cumulative impact, achieve short-term goals to the disadvantage of long-term goals, or cause adverse effects on human beings. **(Less Than Significant Impact with Mitigation)**

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SECTION 6.0 AUTHORS AND CONSULTANTS

Lead Agency

City of Santa Clara
Andrew Crabtree, Director of Community Development
Gloria Sciara, Development Review Officer
Yen Han Shen, Associate Planner
Alexander Abbe, Assistant City Attorney

Consultants

ICF Jones & Stokes, Inc.
Environmental Consultants and Planners
Heidi Mekkelson, Project Director
Jessica Viramontes, Project Manager
Anne Winslow, Environmental Planner
Lawrence Truong, Environmental Planner
Diana Roberts, Environmental Planner
Shannon Hatcher, Air Quality Specialist
Laura Yoon, Air Quality Specialist
Seth Hartley, Air Quality Specialist
Eric Christensen, Biologist
Gretchen Hilyard, Architectural Historian
Aisha Fike, Architectural Historian
David Buehler, Noise Specialist
Liz Scott, Noise Specialist
Alan Barnard, Graphics
James Harmon, Publication Specialist

Ramboll Environ US Corporation
Preparer of the Air Quality and Greenhouse Gas Technical Report
Shari Libicki
Catherine Mukai

Kimley-Horn
Preparer of the Traffic Evaluation
Mike Mowery, P.E.