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February 28, 2019

Mr. Drew Bohan
Executive Director
California Energy Commission
1516 Ninth Street
Sacramento, California 95814-5512

RE: Application for Small Power Plant Exemption: Laurelwood Data Center

Dear Mr. Bohan:

Pursuant to Section 1936 of the Commission's Regulations (20 C.C.R. 1936 *et seq.*), on behalf of MECP1 Santa Clara 1, LLC (the "Applicant"), we are pleased to submit this Application for a Small Power Plant Exemption ("SPPE") for the Laurelwood Data Center ("LDC") located in Santa Clara, California. The LDC is a data center which will incorporate backup generators sized to serve the LDC's maximum load of 99 megawatts in the event of an interruption of electrical service to the site by the local utility, Silicon Valley Power.

Please find attached to this Letter the Affidavit of Matt Muell, Senior Vice President of Acquisitions & Development for MECP1 Santa Clara 1, LLC, signed by the Applicant, attesting under penalty of perjury to its truth and accuracy.

Sincerely,

Jeffery D. Harris

ELLISON SCHNEIDER HARRIS & DONLAN LLP
Jeffery D. Harris
Samantha G. Neumyer

Attorneys for the Applicant

AFFIDAVIT OF MATT MUELL
Application for Small Power Plant Exemption
Laurelwood Data Center

I, Matt Muell, declare as follows:

1. I, Matt Muell, am the Senior Vice President of Acquisitions & Development for MECP1 Santa Clara 1, LLC.

2. As an officer of MECP1 Santa Clara 1, LLC, I hereby attest, under penalty of perjury under the laws of the State of California that the contents of this application are truthful and accurate to the best of my knowledge and belief.

By: Matt Muell,
Senior Vice President of Acquisitions & Development
MECP1 Santa Clara 1, LLC

Date: 2-28-2019

Laurelwood Data Center

Small Power Plant Exemption Application

for the

Laurelwood Data Center
Santa Clara, California

February 2019

Submitted to the:
California Energy Commission

Submitted by:
MECP1 Santa Clara 1, LLC

With Technical Assistance by:

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Acronyms and Abbreviations

>	greater than
µg/L	microgram(s) per liter
µg/m^3	microgram(s) per cubic meter
AB 32	Assembly Bill 32
AB 52	Assembly Bill 52
ABAG	Association of Bay Area Governments
ADT	average daily traffic
amsl	above mean sea level
ARB	Air Resources Board
ARM2	Ambient Ratio Method 2
BAAQMD	Bay Area Air Quality Management District
BACT	best available control technology
bbl/year	barrels per year
BMP	best management practice
CAA	Clean Air Act
CAAQS	California Ambient Air Quality Standards
CalEPA	California Environmental Protection Agency
Caltrans	California Department of Transportation
CAP	Climate Action Plan
CARB	California Air Resources Board
CCR	California Code of Regulations
CDE	California Department of Education
CEC	California Energy Commission
CEQA	California Environmental Quality Act
City	City of Santa Clara
CMP	Congestion Management Program
CNDDB	California Natural Diversity Database
CNEL	community noise equivalent level
CO	carbon monoxide
CO_2	carbon dioxide
CO_2e	carbon dioxide equivalent
CRHR	California Register of Historical Resources
CWA	Clean Water Act
dB	decibel
dBA	A-weighted decibels
DOC	California Department of Conservation

DPM	diesel particulate matter
DTSC	Department of Toxic Substances Control
EIR	environmental impact report
EJ	environmental justice
EPA	U.S. Environmental Protection Agency
FAA	Federal Aviation Administration
ft^2	square foot
FRA	Federal Railroad Administration
FTA	Federal Transit Administration
g/s	gram(s) per second
General Plan	*City of Santa Clara 2010–2035 General Plan*
GHG	greenhouse gas
HAP	hazardous air pollutant
HARP2	Hotspot and Reporting Program Version 2
HI	hazard index
HOV	high-occupancy vehicle
HRA	health risk assessment
ID	identification
ISR	in-stack NO_2/NO_X ratio
IT	Information Technology
K	degree(s) Kelvin
km	kilometer(s)
kV	kilovolt
lb/day	pound(s) per day
lb/hr	pound(s) per hour
lb/project	pound(s) per project
lb/yr	pound(s) per year
kV	kilovolt
LDC	Laurelwood Data Center
LOS	level of service
m	meter(s)
m/s	meters per second
MACT	maximum achievable control technology
MEIR	maximally exposed individual resident
MEIW	maximally exposed individual worker
MESR	maximally exposed sensitive receptor
MRZ-1	Mineral Resource Zone 1
MSA	Metropolitan Statistical Area

MTC	Metropolitan Transportation Commission
MW	megawatt
MWh	megawatt-hour
NAAQS	National Ambient Air Quality Standards
NAHC	Native American Heritage Commission
NO	nitric oxide
NO_2	nitrogen dioxide
NO_X	nitrogen oxide
OEHHA	California Office of Environmental Health Hazard Assessment
NPDES	National Pollutant Discharge Elimination System
NRHP	National Register of Historic Places
PAH	polycyclic aromatic hydrocarbon
PM_{10}	particulate matter with aerodynamic diameter less than or equal to 10 microns
$PM_{2.5}$	particulate matter with aerodynamic diameter less than or equal to 2.5 microns
ppb	part(s) per billion
ppm	part(s) per million
PPV	peak particle velocity
PRC	Public Resources Code
PSD	Prevention of Significant Deterioration
PUE	power usage effectiveness
R&D	research and development
REL	reference exposure level
RMS	root-mean-square
RPS	Renewables Portfolio Standard
RWQCB	Regional Water Quality Control Board
SB	Senate Bill
SB X1-2	SB 2 of the First Extraordinary Session
SCS	Sustainable Communities Strategy
SCVURPPP	Santa Clara Valley Urban Runoff Pollution Prevention Program
SCVWD	Santa Clara Water Valley District
SEASHR	seasonal hour
SFBAAB	San Francisco Bay Area Air Basin
SGMA	Sustainable Groundwater Management Act
SIL	significant impact level
SLCP	Short-Lived Climate Pollutant
SMARA	Surface Mining and Reclamation Act
SO_2	sulfur dioxide
SPPE	Small Power Plant Exemption

State Water Board	California State Water Resources Control Board
SVP	Silicon Valley Power
SWPPP	Stormwater Pollution Prevention Plan
TAC	toxic air contaminant
TBACT	best available control technology for toxics
TCE	trichloroethene
tDCE	trans 1,2-dichloroethylene
TOG	total organic gas
UST	underground storage tank
VdB	vibration decibels
VMT	vehicle miles travelled
VOC	volatile organic compound
VRP	visibility-reducing particle
VTA	Santa Clara Valley Transportation Authority
WBAN	Weather Bureau Army Navy
WEAP	Worker Environmental Awareness Program

1. Introduction

MECP1 Santa Clara 1, LLC (Applicant) proposes to construct and operate the Laurelwood Data Center (LDC) in Santa Clara, California. The LDC will consist of two, four-story data center buildings. The maximum load of the servers in the LDC, including the cooling and ancillary load of the building, is 99 megawatts (MW), meaning the project is subject to the California Energy Commission's (CEC) Small Power Plant Exemption (SPPE) process. To ensure reliability in the unlikely event of loss of electric service from Silicon Valley Power (SVP), the LDC will include 56 standby generators to provide electrical power during outages. These 3.0-MW generators will be grouped in redundant set configurations to ensure uninterrupted power for the LDC's maximum demand. These standby generators will not deliver electricity for general consumption but will be restricted to providing power exclusively for LDC demand in the event of an emergency. In addition to the physical limitations on LDC's energy demand, the Applicant's agreements with SVP also provide a contractual limit not to exceed the LDC's maximum of 99 MWs.

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

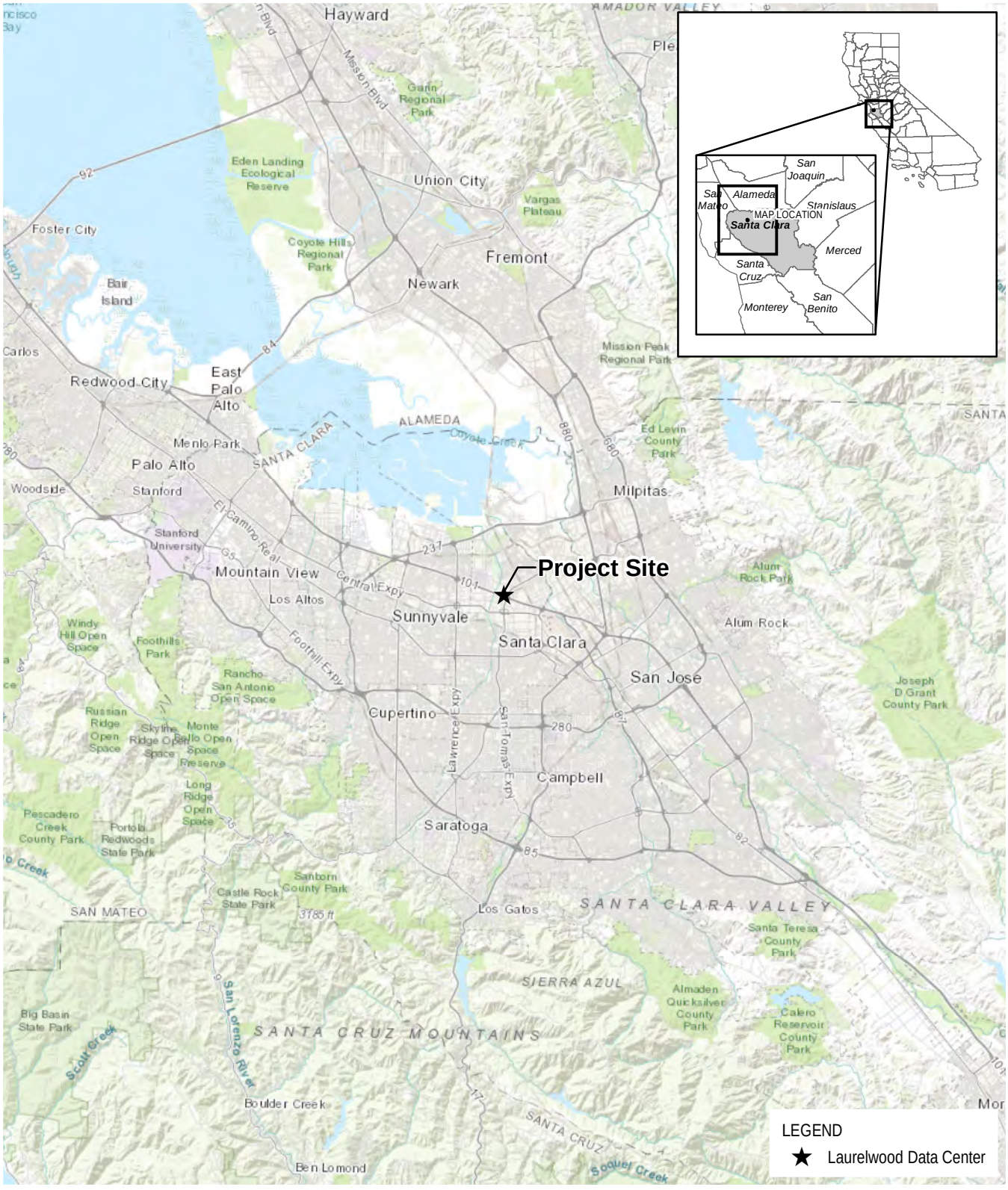
The Applicant prepared this SPPE application in the form of a draft Initial Study for the LDC. The SPPE application is intended to show that the construction and operation of the project will not result in a substantial adverse impact on the environment or energy resources. This SPPE application uses the most recent 2019 California Environmental Quality Act (CEQA) environmental checklist outlined in Appendix G of the CEQA Guidelines.

1.2 Project Description

The LDC consists of two, four-story buildings. Building 1 is an approximately 279,744-square-foot structure with a common building that connects with Building 2. Building 2 is an approximately 348,800-square-foot structure with two connected office/common spaces. Both buildings include loading docks, generator yards, stormwater bio-swales, paved surface parking lots, and landscaping features. The LDC also includes an onsite 60-kilovolt (kV) substation in the southwestern corner of the parcel with an electrical supply line that connects to SVP distribution line located to the west. The 12-acre LDC site is zoned planned industrial (MP) with an Assessor's Parcel Number of 104-39-023. Figure 1-1 shows the regional location of the LDC and Figure 1-2 identifies the project location. A site plan is provided as Figure 1-3.

The standby generation for the LDC consists of 56 diesel-fired standby generators, each with a peak output capacity of 3.0 MW and a continuous steady state output capacity of 2.725 MW to support the need for the LDC to provide an uninterruptible power supply. Additional project features include electrical switchgear, distribution lines between the substation and buildings and from the generator yards to each respective building.

The approximately 29,000-sf 60-kV substation will be located in the southwest corner of the project site, adjacent to a public utility easement located along the southern edge of the project parcel (see Figure 1-4 for an ALTA Survey map of the existing site). The approximately 600-foot-long electrical distribution line will interconnect to SVP's existing 60 kV distribution line located on the west side of the San Tomas Aquino Creek. No power poles will be located within the bed or banks of the San Tomas Aquino Creek (see Figures 1-2 and 1-3).



Source:
ESRI Service Layer

Figure 1-1
Regional Location
Laurelwood Data Center
Santa Clara, California

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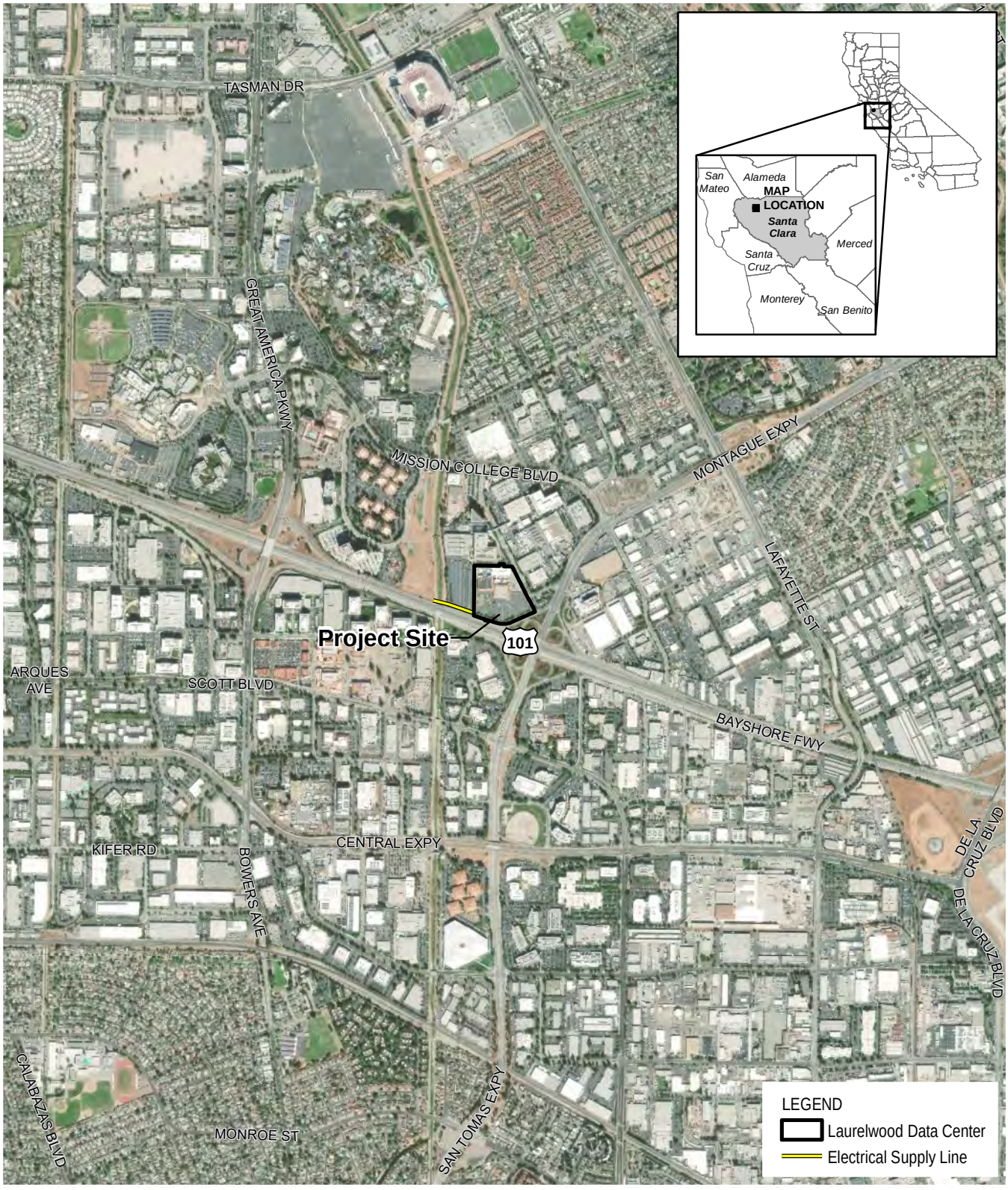
\\BROOKSIDEFILES\GIS_SHARE\ENBG\00_PROJ\E\EDGECORE\GIS\MAPS\REPORT\FIG1-1_REGIONALMAP.MXD 2/15/2019 2:08:47 PM



Source:
ESRI Service Layer

N

0 2,000 4,000

Approximate scale in feet

Figure 1-2
Project Location
Laurelwood Data Center
Santa Clara, California

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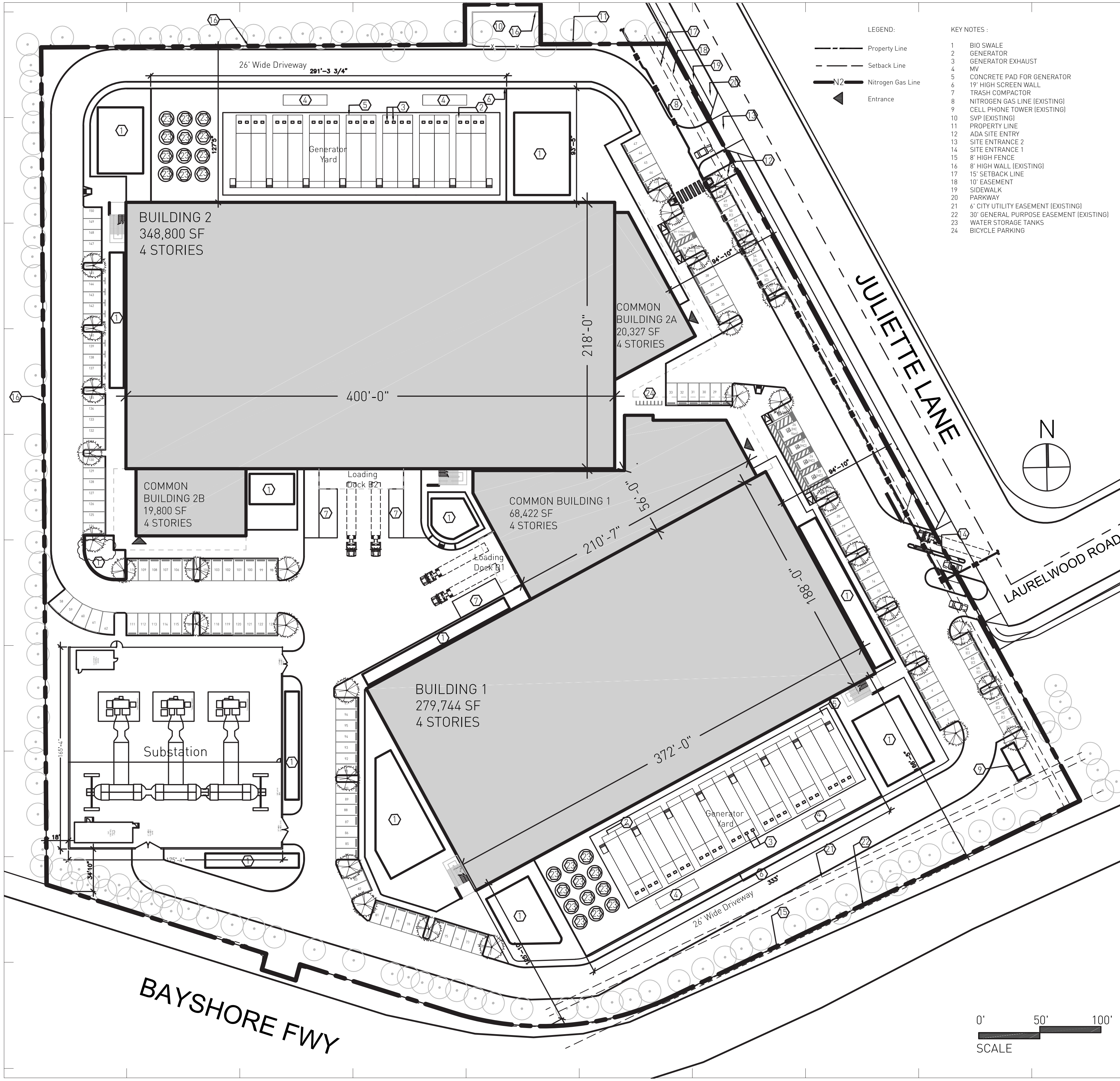

PROJECT DESCRIPTION:

Proposed construction of new two 4 story data center facility.
Each Building consisting of entrance lobby, toilets, offices, security rooms, conference rooms, storage rooms, electrical rooms, bicycle storage and loading docks.
Site development work includes screened generator yard, sub station, parking areas, landscaping and site drainage systems.

PROPOSED USE:

Data Center	
2 New 4-Story Buildings	737,093 SF
Building 1	348,166 SF
Building 2	388,927 SF

BUILDING INFORMATION:

Occupancies:	B, S-1, S-2, H-2
Type of Construction:	2B Fully Sprinklered (CBC 602.2)

LOT COVERAGE:

	Lot Area	%
2201 Laurelwood Rd:	521,511 SF	100%
Building Footprint	184,273 SF	35%
Substation	28,950 SF	6%
Landscape Area	133,769 SF	26%

FAR CALCULATION:

Total Building SF:	737,093 SF
FAR	1.41

OUTDOOR STORAGE:

No Outdoor Storage

PARKING CALCULATION:
2201 LAURELWOOD ROAD

REQUIRED
2201 Laurelwood Rd: 737,093 SF total

737,093 SF Light Industrial @ 1/5000	147 Spaces
Total Required:	147 Spaces

PARKING PROVIDED:

Standard Spaces:	124
Compact Spaces:	19
ADA Parking Spaces:	5 (4 ADA+1 VAN)
EV Spaces:	2
Bicycle Parking Spaces:	8
Bicycle Storage:	8
Total Provided:	150 Spaces

dcm
dotterweich carlson mehner design, inc.

REV.	DATE	DESCRIPTION
R0	02.08.2019	PCC Submission

PROJECT:

EDGECORE INTERNET REAL ESTATE

EdgeCore Laurelwood
2201 Laurelwood Road
Santa Clara, California

PROJECT NUMBER: 18.0014

DRAWING TITLE:
PROPOSED SITE PLAN

DRAWING NUMBER:
SP102

Figure 1-3
Site Plan
Laurelwood Data Center
Santa Clara, California

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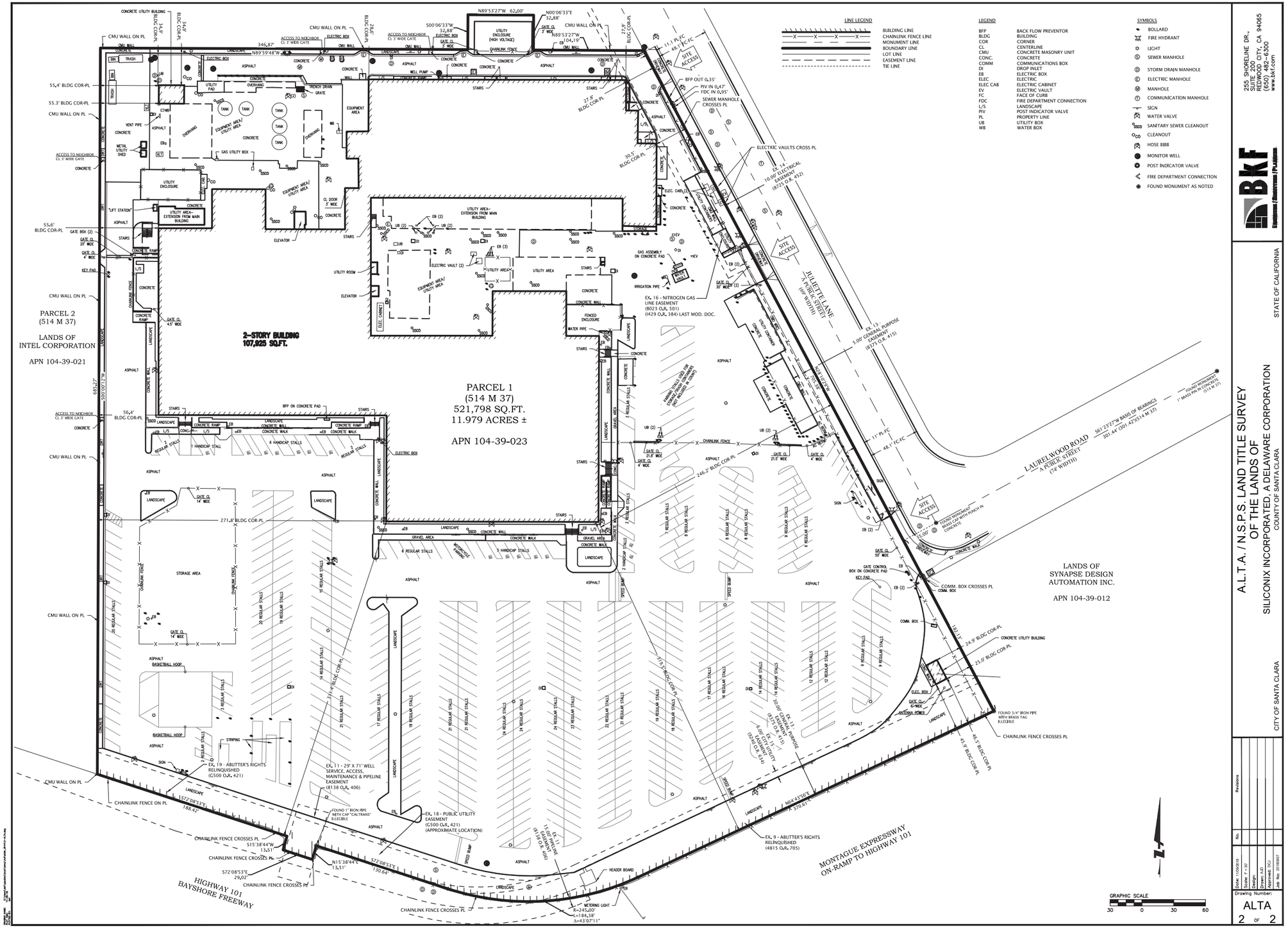

LINE LEGEND

BUILDING LINE
CHAINLINK FENCE LINE
MONUMENT LINE
BOUNDARY LINE
LOT LINE
EASEMENT LINE
TIE LINE

LEGEND

BFP	BACK FLOW PREVENTOR
BLDG	BUILDING
COR	CORNER
CL	CENTERLINE
CMU	CONCRETE MASONRY UNIT
CONC.	CONCRETE
COMM	COMMUNICATIONS BOX
DI	DROP INLET
EB	ELECTRIC BOX
ELEC	ELECTRIC
ELEC CAB	ELECTRIC CABINET
EV	ELECTRIC VAULT
FC	FACE OF CURB
FDC	FIRE DEPARTMENT CONNECTION
L/S	LANDSCAPE
PIV	POST INDICATOR VALVE
PL	PROPERTY LINE
UB	UTILITY BOX
WB	WATER BOX

SYMBOLS

- BOLLARD
- FIRE HYDRANT
- LIGHT
- (S) SEWER MANHOLE
- (D) STORM DRAIN MANHOLE
- (E) ELECTRIC MANHOLE
- (M) MANHOLE
- (T) COMMUNICATION MANHOLE
- SIGN
- WATER VALVE
- SSCO SANITARY SEWER CLEANOUT
- CO CLEANOUT
- HOSE BIBB
- MONITOR WELL
- POST INDICATOR VALVE
- FIRE DEPARTMENT CONNECTION
- FOUND MONUMENT AS NOTED

255 SHORELINE DR., SUITE 200
REDWOOD CITY, CA 94065
(650) 482-6300
www.bkf.com

BKF Engineers | Surveyors | Planners

A.L.T.A. / N.S.P.S. LAND TITLE SURVEY OF THE LANDS OF SILICONIX INCORPORATED, A DELAWARE CORPORATION

STATE OF CALIFORNIA
COUNTY OF SANTA CLARA
CITY OF SANTA CLARA

No.	Revisions

Date: 11/09/2018
Scale: 1" = 30'
Design:
Drawn: KJD
Approved: DCI
Job No: 20180807

Drawing Number:
ALTA
2 OF 2

Figure 1-4
Existing Site
Laurelwood Data Center
Santa Clara, California

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The 56 standby generators will be located in two generation yards along the outside of each building, serving the adjacent building. Each of the two building includes 28 standby generators. One generator will provide continuous power to the essential systems (fire suppression and other emergency operations) for the project during electrical outages.

Each standby 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 aboveground conduit/cabling to a location within the building that houses electrical distribution equipment.

1.3 Environmental Determination

This SPPE application identifies the potential impacts from the construction and operation of the LDC and evaluates those impacts to significance standards for each SPPE/CEQA topic area. The SPPE application shows that the construction and operational impacts of the LDC are less than significant with the incorporation of design measures proposed to reduce or eliminate the potentially significant environmental impacts.

2. Project Description

MECP1 Santa Clara 1, LLC (Applicant) proposes to construct and operate the Laurelwood Data Center (LDC or project) in Santa Clara, California. The LDC will consist of two, four-story data center buildings. The maximum electrical load of the buildings is 99 megawatts (MW), inclusive of tenant-installed information technology (IT) equipment in the LDC and cooling and ancillary electrical and telecommunications equipment operating to support IT equipment. To ensure reliability in the unlikely event of loss of electrical service from the local electric utility provider, Silicon Valley Power (SVP), the LDC will include 56 3.0-MW standby diesel generators to provide electrical power during utility outages or certain onsite electrical equipment interruption or failure. These generators will be distributed in redundant configurations (that is, all 56 generators will never be operating at the same time) to ensure uninterrupted power up to the maximum of 99 MW to the LDC. Equipment will be placed at SVP's grid-to-onsite interconnection point, ensuring these backup generators cannot and will not create electricity for offsite distribution and consumption and will be restricted to providing power exclusively for onsite consumption to support customer loads when SVP power is unavailable. The Applicant's agreements with SVP contractually limit the amount of electricity available from SVP's system to a maximum of 99 MW, which ensures the back-up generation system will never exceed onsite generation in excess of this amount.

2.1 Project Overview

The LDC consists of two, four-story buildings. Building 1 is an approximately 279,744-square-foot structure with an attached service building providing supporting amenities including elevators, restrooms, lobby, staging, and storage. Building 2 is an approximately 348,800-square-foot structure with two connected office/common spaces. Both buildings include loading docks, backup generator yards, stormwater bio-swales, paved surface parking lots, and landscaping features. The LDC also includes an onsite 60-kilovolt (kV) substation with an electrical supply line that will connect to an SVP distribution line located 0.1 miles west of the LDC. The approximately 12-acre LDC site is zoned planned industrial with an Assessor's Parcel Number of 104-39-023. Figure 1-1 shows the regional location of the LDC and Figure 1-2 identifies the project location.

The standby generation for the LDC consists of 56 3.0-MW diesel-fired generators, each with a peak output capacity of 3.0 MW and with a continuous steady state output capacity of 2.725 MW to support the need for the LDC to provide an uninterruptible power supply. Additional project features include electrical switchgear and distribution lines between the substation and buildings as well as from the backup generator yards and each respective building.

The approximately 29,000-square-foot substation will be located in the southwest corner of the project site, adjacent to a public easement located along the southern edge of the project parcel. The approximately 600-foot-long electrical supply line will be located within this public easement and head west from the LDC to tie into SVP's existing 60-kV distribution line located on the western side of the San Tomas Aquino Creek. This distribution line will consist of three distribution poles located within the existing easement. A site plan is provided as Figure 2-1 with the electrical supply line route.

The standby generators will be located in equipment yards along the outside of each building. Each building will include up to 28 standby generators. One generator will provide continuous power to the essential systems (fire suppression and other emergency operations) for the project during electrical outages. At no time will the total LDC electrical demand exceed 99 MWs. Therefore, at no time will the standby generators generate more than 99 MWs of electricity for onsite consumption.

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 backup generation yard will be electrically interconnected to the building it serves through a combination of underground and aboveground conduit/cabling to a location within the building that houses electrical distribution equipment.

2.1.1 Data Center Design

Buildings 1 and 2 will be up to four-story buildings constructed of steel structural components with metal-framed and insulated exterior walls with stucco or metal panel façade containing accent fields and reveals. The entries will include curtain wall glazing and an aluminum canopy. Heating/ventilation and air-conditioning equipment, including chiller units, will be located on the roof of each building and screened using perforated corrugated steel panels. Figures 2-2a to 2-2c provide conceptual floor layout for the data center buildings. Elevation drawings are presented on Figures 2-3a to 2-3c. The exterior of the building will conform to City of Santa Clara (City) design standards. Figure 2-4 provides a rendering of the project from Juliette Lane.

2.2 Electrical System Engineering

The standby generator system includes a 5-to-make-4 design topology, meaning that for every 4 standby generators that would support load in the event of a utility failure there is 1 backup standby generator (i.e. only if one of the four generators running in the event of a utility failure were to fail would the fifth generator in that lineup begin operating). This means that of the 56 standby generators, only 33 generators operating at 100% of their maximum rated output are required to support the operation of LDC under peak summer-time ambient conditions (99 MW of backup generator output). Each building's standby generators will be supported by an Uninterruptible Power Supply (UPS) system consisting of batteries, an inverter, and switches to facilitate the uninterrupted transfer of electrical power supply from the SVP substation to the onsite standby generators in the event of a utility or equipment failure. The UPS system includes valve-regulated battery banks, with each bank capable of providing up to 10 minutes of backup at 100 percent load

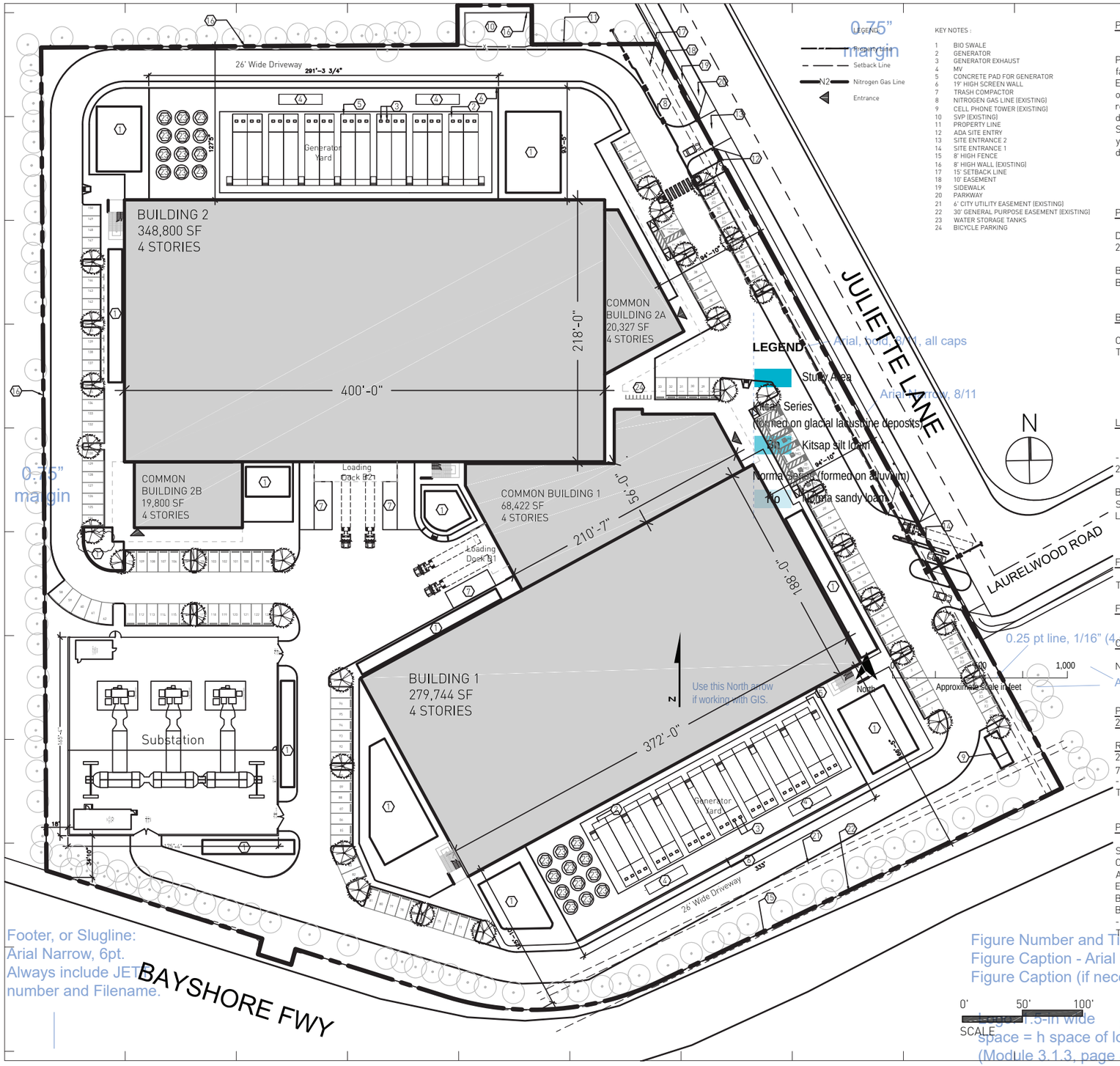
A single electrical system consists of a 12.47-kV to 480-volt substation transformer feeding the 480-volt critical bus that feed two independent Uninterruptable Power System (UPS) modules. The UPS modules are electrically independent of one another for the purposes of loading. The critical bus is supported by its own standby generator and each standby generator operates independent of one another. A utility main breaker and a generator main breaker are included in the critical bus 480-volt switchgear, which are controlled by an automatic transfer controller that transfers the electricity generated by the dedicated standby generator in the event of a power outage.

The SVP distribution line supplying electricity to the onsite substation will be located within an existing 30-foot public easement along the southern portion of the project parcel. This distribution line will interconnect to SVP's existing 60-kV distribution line located on the west side of the San Tomas Aquino Creek. Three power poles will be required to support the distribution line. No power poles will be located within the bed or banks of the San Tomas Aquino Creek (Figures 1-2, 1-3, and 1-4).

2.2.1 Electrical Generation Equipment

Each of the 56 standby generators will be an Environmental Protection Agency (EPA) Tier-2 diesel fired generator equipped with diesel particulate filters (DPF). The generators will be Caterpillar Model C175-16 with a maximum generating capacity of 3.0 MW and a continuous generating capacity of 2.725 MW.

Each standby generator includes an engine and alternator within a sound-attenuated enclosure. Each generator can be independently operated based on signals from the UPS system programable logic controllers. The standby generators are optimized for rapid start, with redundant starters, redundant batteries, redundant battery chargers, and a best battery selector switch. The standby generators are designed to minimize space requirements by stacking one generator on top of another generator. Each generator is approximately 9.5 feet wide, 26 feet long, and 11 feet high. The stacked generators will be approximately 36 feet tall when installed on its foundation. The backup generator yards will include an approximately 19-foot-high sound-attenuated wall to minimize visual and noise impacts from the equipment. Each pair of standby generators will include a separate exhaust stack enclosed in a plenum to enhance the appearance of these industrial components. The exhaust stacks will be approximately 40 feet above grade.



LEGEND

- Property Line
- Setback Line
- N2 Nitrogen Gas Line
- Entrance

KEY NOTES :

1 BIO SWALE
2 GENERATOR
3 GENERATOR EXHAUST
4 MV
5 CONCRETE PAD FOR GENERATOR
6 19' HIGH SCREEN WALL
7 TRASH COMPACTOR
8 NITROGEN GAS LINE (EXISTING)
9 CELL PHONE TOWER (EXISTING)
10 SVP (EXISTING)
11 PROPERTY LINE
12 ADA SITE ENTRY
13 SITE ENTRANCE 2
14 SITE ENTRANCE 1
15 8' HIGH FENCE
16 8' HIGH WALL (EXISTING)
17 15' SETBACK LINE
18 10' EASEMENT
19 SIDEWALK
20 PARKWAY
21 6' CITY UTILITY EASEMENT (EXISTING)
22 30' GENERAL PURPOSE EASEMENT (EXISTING)
23 WATER STORAGE TANKS
24 BICYCLE PARKING

PROJECT DESCRIPTION:

Proposed construction of new two 4 story data center facility.
Each Building consisting of entrance lobby, toilets, offices, security rooms, conference rooms, storage rooms, electrical rooms, bicycle storage and loading docks.
Site development work includes screened generator yard, sub station, parking areas, landscaping and site drainage systems.

PROPOSED USE:

Data Center	
2 New 4-Story Buildings	737,093 SF
Building 1	348,166 SF
Building 2	388,927 SF

BUILDING INFORMATION:

Occupancies:	B, S-1, S-2, H-2
Type of Construction:	2B Fully Sprinklered (CBC 602.2)

LOT COVERAGE:

	Lot Area	%
2201 Laurelwood Rd:	521,511 SF	100%
Building Footprint	184,273 SF	35%
Substation	28,950 SF	6%
Landscape Area	133,769 SF	26%

FAR CALCULATION:

Total Building SF:	737,093 SF
FAR	1.41

OUTDOOR STORAGE:

No Outdoor Storage

PARKING CALCULATION:
2201 LAURELWOOD ROAD

REQUIRED

2201 Laurelwood Rd: 737,093 SF total	
737,093 SF Light Industrial @ 1/5000	147 Spaces
Total Required:	147 Spaces

PARKING PROVIDED:

Standard Spaces:	124
Compact Spaces:	19
ADA Parking Spaces:	5 (4 ADA+1 VAN)
EV Spaces:	2
Bicycle Parking Spaces:	8
Bicycle Storage:	8
Total Provided:	150 Spaces

NOTE: FOR DRAWING CLARITY, DEMOLITION PLAN MAY NOT INDICATE ALL TREES THAT ARE TO REMAIN. COORDINATE WORK WITH ALL TREES TO REMAIN INDICATED ON LANDSCAPE DRAWINGS.

dcm
dotterweich carlson mehner design, inc.
4311 Normandie St. Los Angeles Ca 90029 213 232 3748

PROJECT:
EdgeCore Laurelwood
2201 Laurelwood Road
Santa Clara, California

PROJECT NUMBER: 18.0014

PROPOSED SITE PLAN

SP102

0.75" margin

Arial, bold, 8/11, all caps

Arial Narrow, 8/11

0.25 pt line, 1/16" (4.5 pt) high

Arial Narrow, 6 pt

Z-fold 4.25"

0.75" margin

0.75" margin

Title block should lay within 3.5" from the right edge of the page (for printed, Z-folded figures)
Z-fold at 4.25" from right edge

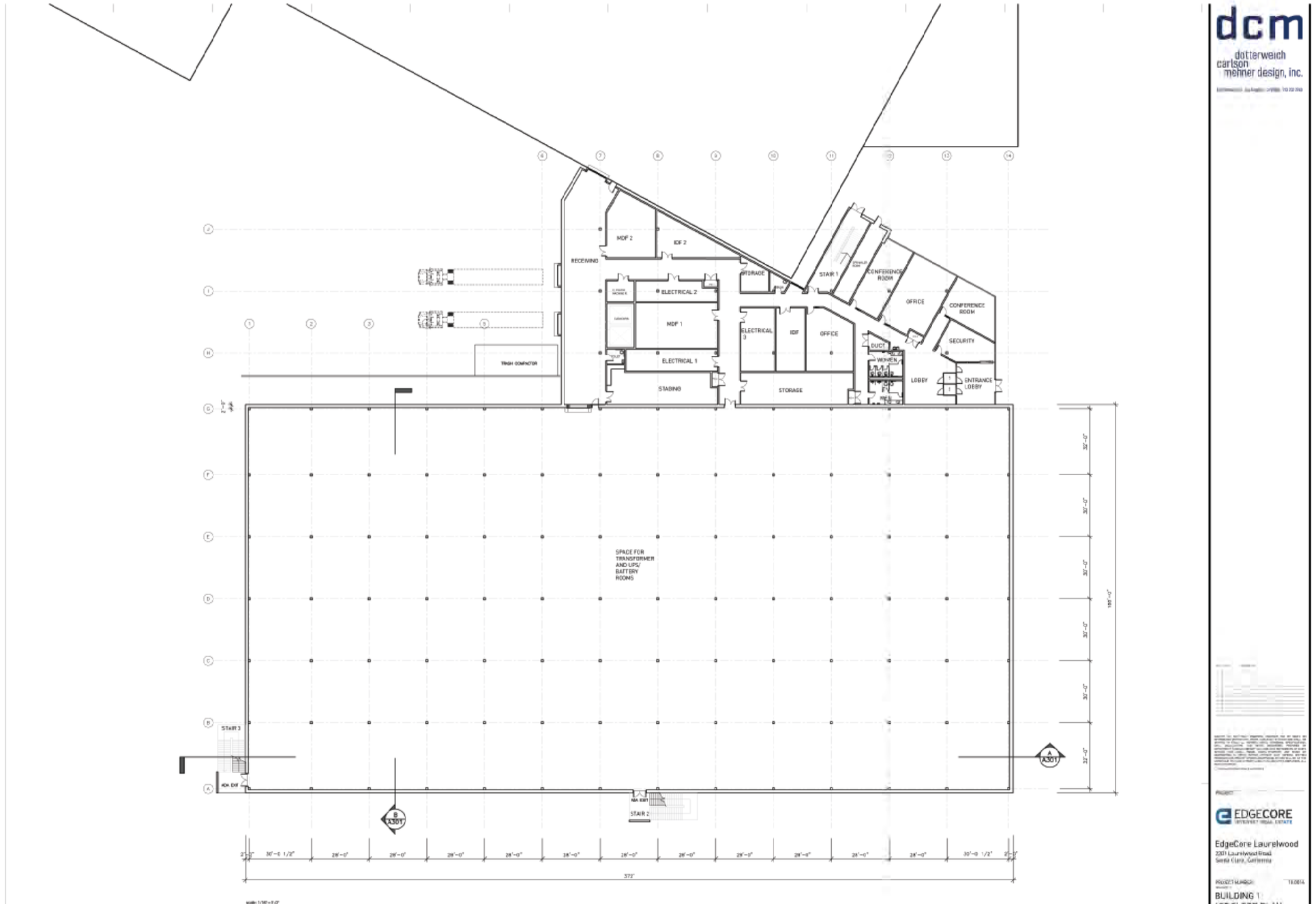
Footer, or Slugline:
Arial Narrow, 6pt.
Always include JETS number and Filename.

Figure Number and Title - Arial Narrow, bold, 10/12
Figure Caption - Arial Narrow, 10/12
Figure Caption (if necessary) - Arial Narrow, 10/12

Figure 2-1
Site Plan
Laurelwood Data Center
Santa Clara, California

Legend: 1.5-in wide space = h space of Idaho
(Module 3.1.3, page 88 of Jacobs Style Guide)

JACOBS



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EDGECORE
INTERNET REAL ESTATE

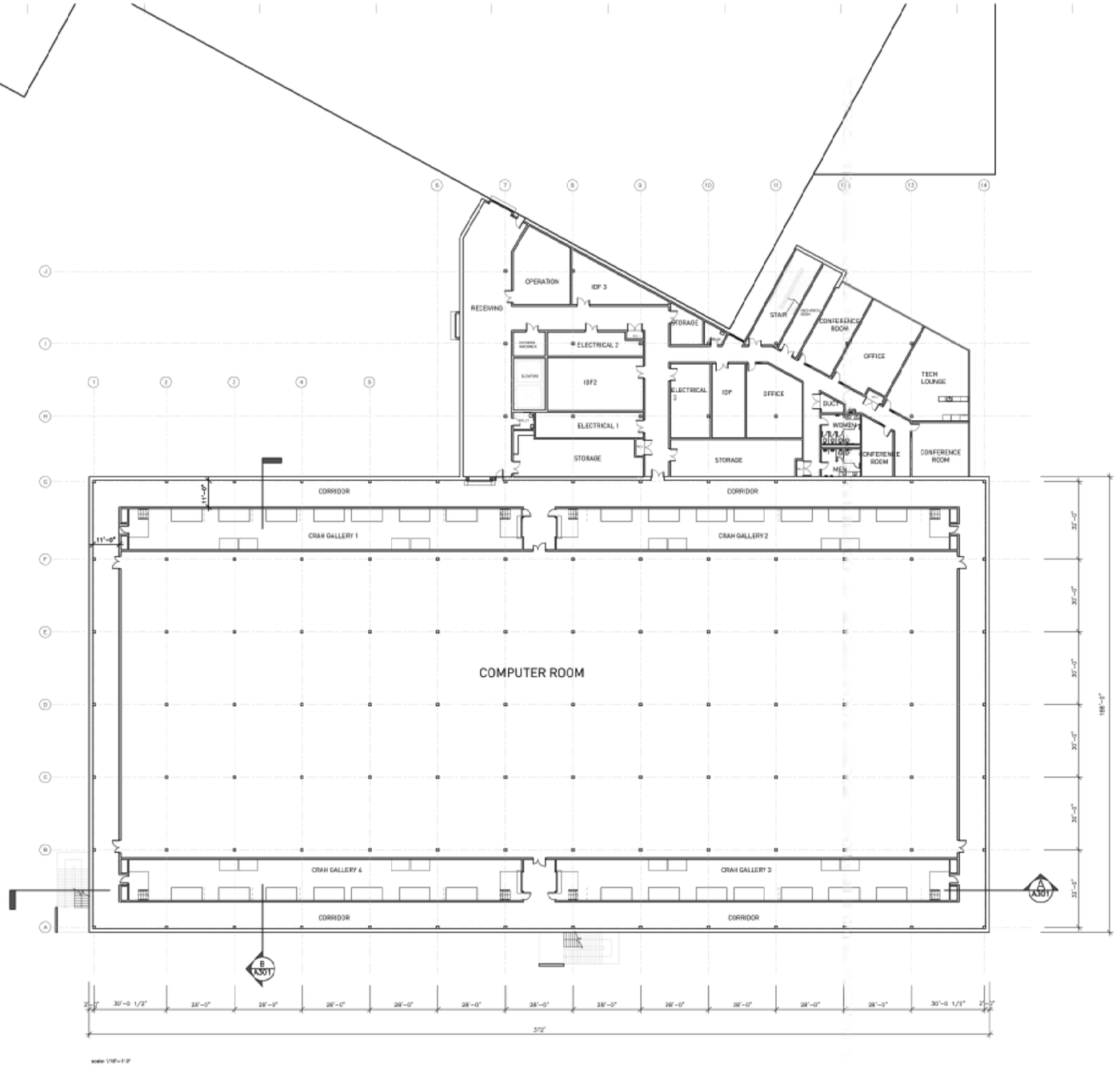
EdgeCore Laurelwood
2301 Laurelwood Road
Santa Clara, California

BUILDING 1
1ST FLOOR PLAN

A101

Figure 2-2a
1st Floor Plan
Laurelwood Data Center
Santa Clara, California

JACOBS



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EDGECORE
INTERNET REAL ESTATE

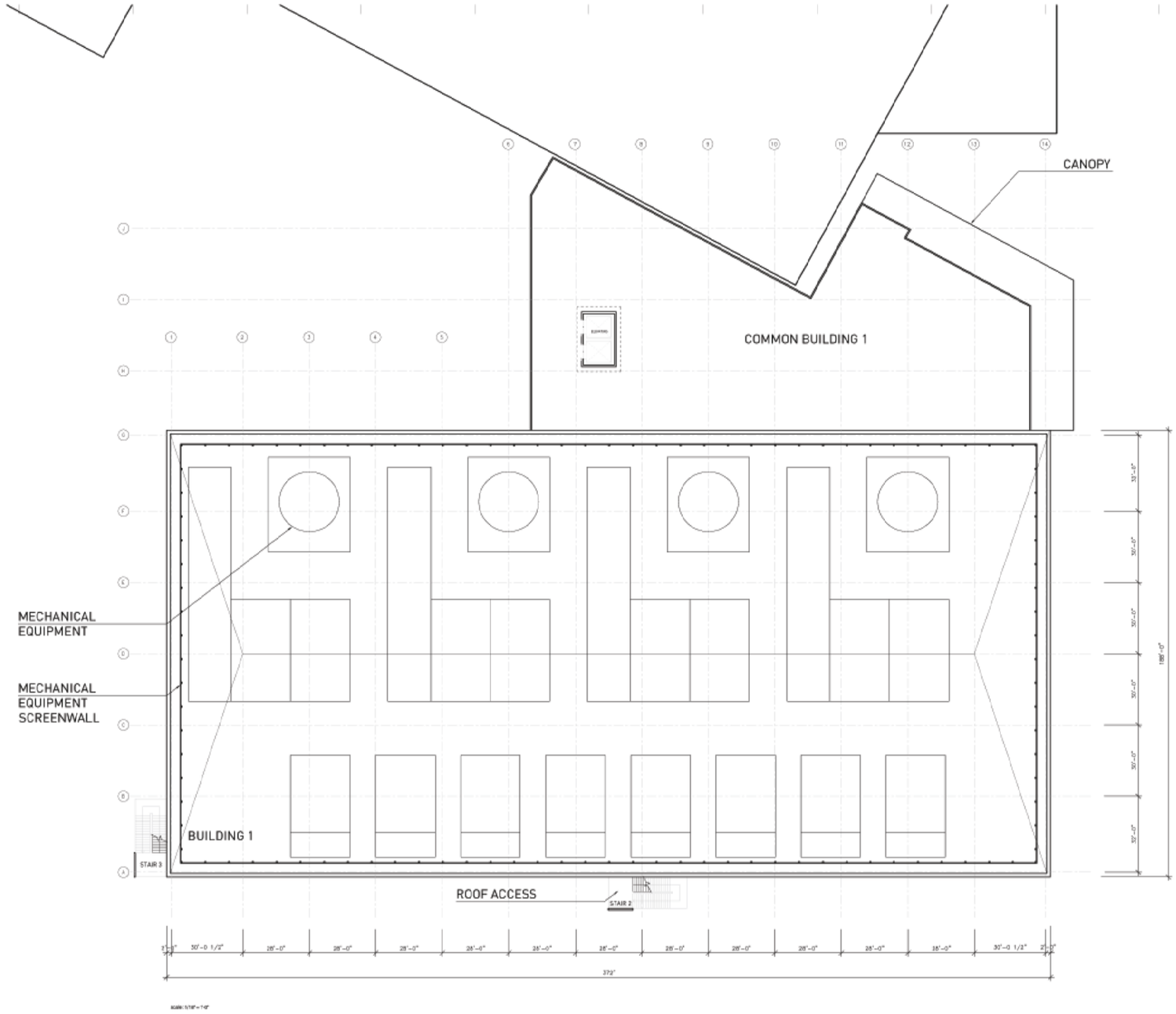
EdgeCore Laurelwood
2301 Laurelwood Road
Santa Clara, California

BUILDING 1
2ND, 3RD AND 4TH FLOOR PLAN

A102

Figure 2-2b
2nd, 3rd, and 4th Floor Plan
Laurelwood Data Center
Santa Clara, California

JACOBS



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EDGECORE
INVESTMENT REAL ESTATE

EdgeCore Laurelwood
2301 Laurelwood Road
Santa Clara, California

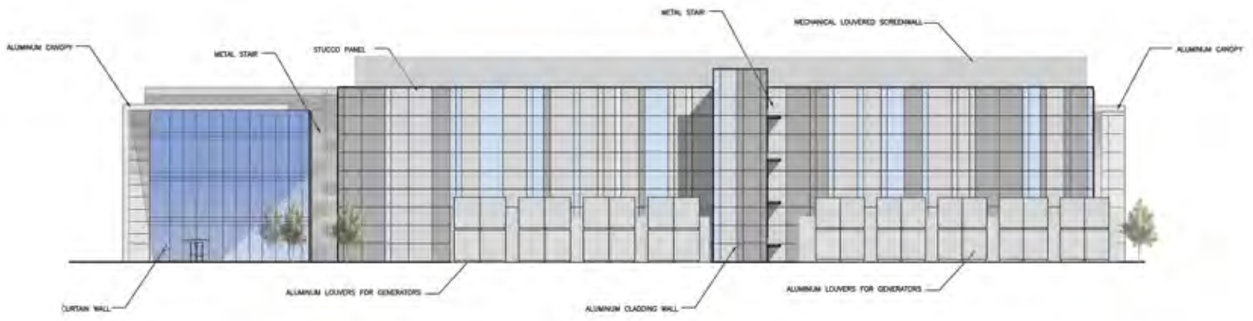
BUILDING 1
ROOF PLAN

A103

Figure 2-2c
Roof Plan
Laurelwood Data Center
Santa Clara, California

JACOBS

1 EAST ELEVATION



2 SOUTH ELEVATION

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EDGECORE INTERNET REAL ESTATE

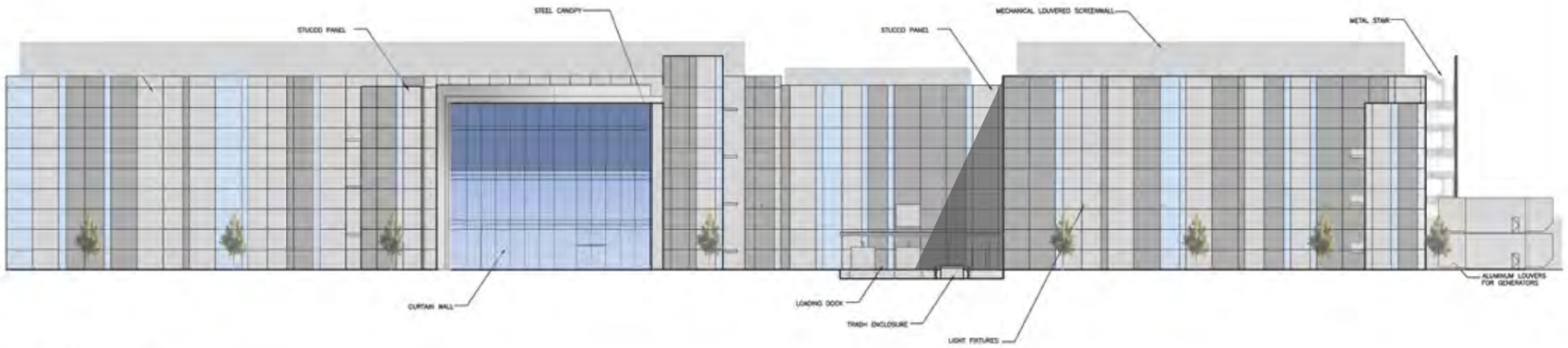
EdgeCore Laurelwood
2201 Laurelwood Road
Santa Clara, California

ELEVATIONS

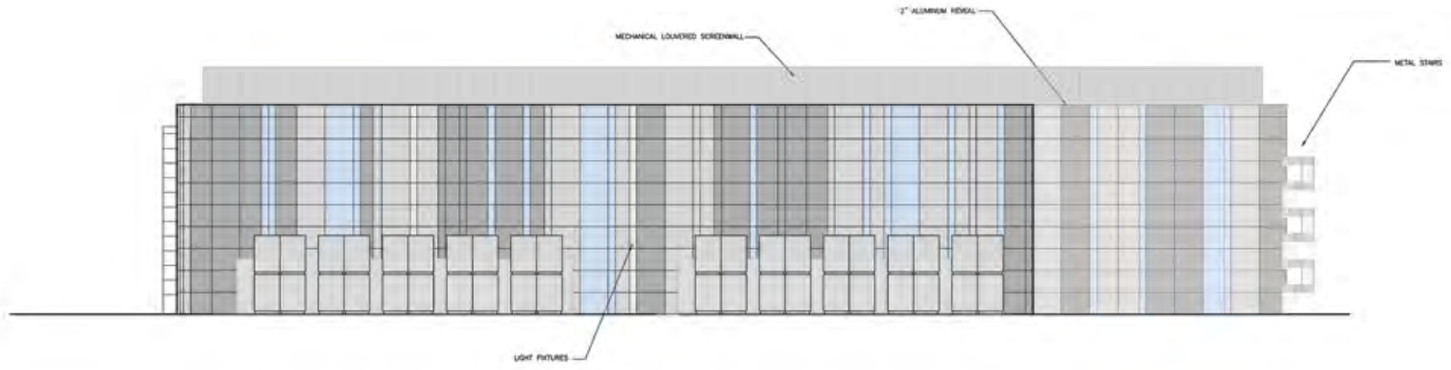
A201

Figure 2-3a
Elevation Drawings
Laurelwood Data Center
Santa Clara, California

JACOBS



1 WEST ELEVATION



2 NORTH ELEVATION

dcm
dotterweich carlson mehner design, inc.

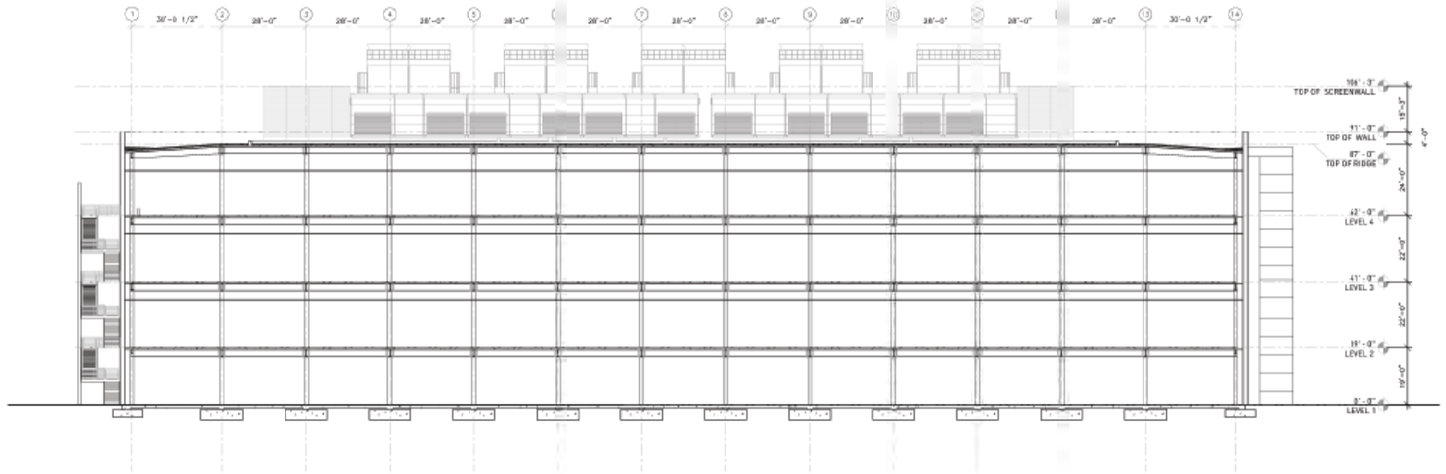
PROJECT
EDGECORE INTERNET REAL ESTATE
EdgeCore Laurelwood
2201 Laurelwood Road
Santa Clara, California

ELEVATIONS

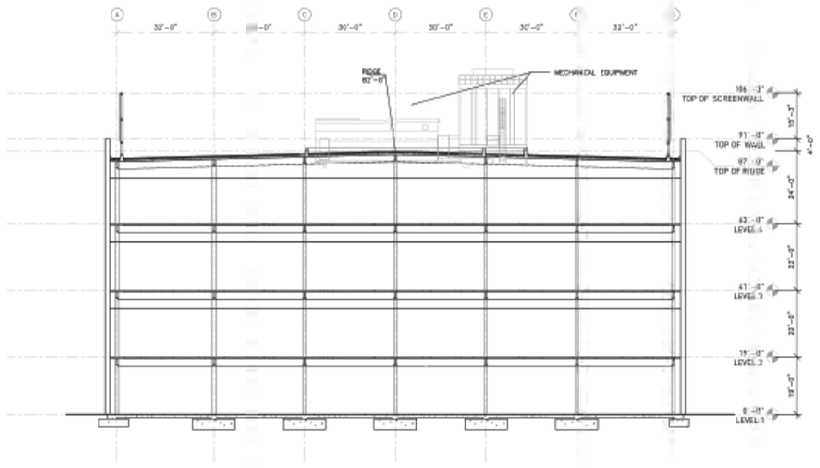
A202

Figure 2-3b
Elevation Drawings
Laurelwood Data Center
Santa Clara, California

JACOBS



1 SECTION A-A



2 SECTION B-B

dcm
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EDGECORE
INTERNET REAL ESTATE

EdgeCore Laurelwood
2901 Laurelwood Road
Santa Clara, California

TYPICAL SECTIONS

A301

Figure 2-3c
Elevation Drawings
Laurelwood Data Center
Santa Clara, California

JACOBS

VIEW FROM JULIETTE LANE

Figure 2-4
Rendering
Laurelwood Data Center
Santa Clara, California

JACOBS

2.2.2 Fuel System

Each standby generator includes an approximately 10,300-gallon diesel fuel tank with polishing filtration. The tank will be located underneath each standby generator and provides sufficient fuel storage to operate the generator at steady state continuous load for at least 48 hours.

2.2.3 Cooling System

Each generator will be self-contained within an enclosure with its own radiator for cooling.

2.2.4 Water Supply and Use

Potable water will be provided to LDC by the City. The standby generators will require water during the initial filling of the closed-loop radiator system and periodically during maintenance events. After the initial fill, no further consumption of water by the standby generators is required.

2.2.5 Waste Management

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

2.2.6 Hazardous Materials Management

Each standby generator will include a double-walled fuel tank to minimize the potential of an accidental fuel release. The space between the walls of the fuel tank will be monitored for the presence of liquids. This monitoring system is monitored by the onsite operations staff who will receive automated alerts in the event of fuel leak or release. The diesel fuel and potentially battery electrolyte (sulfuric acid) represents the only hazardous materials stored onsite in reportable quantities.

Fuel deliveries will occur as needed via a tanker truck. The tanker truck will park at the gated entrances to the backup generator yard for refueling. Fueling will occur within a spill catch basin located under each generator fill connection. The drain to the spill catch basin will be closed prior to the start of fueling. Spill control equipment will be stored within the backup generation yard to allow immediate responses in the event of an accident.

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

The Applicant will install warning signs at the fuel unloading areas to minimize the potential of refueling accidents occurring due to tanker trucks departing prior to disconnecting the transfer hose. Also, an emergency pump shut-off will be utilized if a pump hose breaks while fueling the tanks. Tanker truck loading and unloading procedures will be posted at the fuel unloading areas.

2.3 Existing Site Condition

The LDC site is located at 2201 Laurelwood Road in Santa Clara, California (Figure 1-2). The approximately 12-acre site is bounded to the south by U.S. 101, to the west by a covered parking lot, to the east by Juliette Lane and commercial/industrial uses, and to the north by commercial/industrial uses. The site includes a 30-foot public easement along the southern edge of the parcel that also includes parking and landscaping (Figure 1-4). There are two existing access gates off Laurelwood Road.

The site is a single parcel previously used for electrical component manufacturing and office space with mature landscaping including trees and shrubs. Existing structures, including underground infrastructure, are being removed by the former owner as a condition of sale, pursuant to the demolition requirements of the City. Underground infrastructure at a depth of 8 feet or less will also be removed. Perimeter trees and shrubs will be retained to the extent feasible. An arborist report is included in Appendix 2-A documenting the types and conditions of the landscaping and identifying trees that will be retained.

The nearest airport, the Norman Y. Mineta San Jose International Airport, is located approximately 1.4 miles to the southeast.

2.4 Project Construction

The Applicant will commence construction of the LDC with a cleared and leveled project site. All existing buildings and structures are being removed by the previous owner. Building 1, including the common building located between the two buildings, will be a four-story, approximately 279,744-square-foot structure with a 68,422-square-foot common building. Building 1 construction will include a loading dock, parking lot/spaces (150 total parking spaces at full buildout), a 26-foot-wide perimeter road, bioswales, a backup generator yard, landscaping, and the 29,000-square-foot substation with the distribution supply power line. The main entrance will be off Laurelwood Road, with a secondary entrance off Juliette Lane. All entrances will include security gates with controlled access. Building 2 construction will include a loading dock, two, four-story office/common space structures (approximately 19,800 square feet and 20,327 square feet), parking lot/spaces, the remainder of a 26-foot-wide perimeter road, bioswales, a backup generator yard, and landscaping.

In addition, Class I bicycle lockers and Class II bicycle racks will be provided on site.

Construction is scheduled to commence in the 3rd quarter of 2019 and completed in the 4th quarter of 2020, approximately 1 months. Construction is expected to require a maximum of 129 workers (craft and supervisory) per month and an average of 71 workers per month. Table 2-1 presents the construction workforce by month and classification.

Table 2-1. Construction Workforce by Month and Classification

Month	1	2	3	4	5	6	7	8	9	10	11	12	13	14
Labor Classification														
Carpenters	1	5	1	3	5	5	8	15	15	16	16	16	10	2
Laborers	1	5	5	5	5	5	8	15	15	16	16	16	10	2
Teamsters	0	1	0	0	1	0	0	5	5	2	2	3	3	0
Electricians	1	2	3	3	5	8	8	13	13	17	18	18	17	2
Iron Workers	0	2	1	0	1	1	8	6	6	7	7	7	0	0
Millwrights	0	0	0	0	0	0	0	0	0	2	2	3	3	0
Boilermakers	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Plumbers	0	3	1	2	5	1	2	7	7	12	13	13	10	2
Pipefitters	0	0	0	2	5	1	2	7	7	12	13	13	10	2
Insulation Workers	0	0	0	0	0	0	0	3	4	6	6	6	6	2
Operating Engineers	4	9	5	6	6	3	5	15	15	7	7	5	4	0
Oilers / Mechanics	0	1	0	0	0	0	0	4	4	8	8	6	6	0
Cement Finishers	0	0	5	5	6	8	5	5	3	3	1	1	0	0
Roofers	0	0	0	0	0	0	0	7	7	1	1	0	3	0
Sheetmetal Workers	0	0	0	0	3	1	1	4	4	6	7	5	5	0
Sprinkler Fitters	0	0	0	0	0	2	2	2	2	1	1	0	0	0
Painters	0	0	0	0	0	0	0	0	2	2	3	1	4	2
TOTAL CRAFT LABOR	7	28	21	26	42	35	49	108	109	118	121	113	91	14
TOTAL SUPERVISION	8	8	8	8	8	8	8	8	8	8	8	8	8	8
TOTAL STAFFING	15	36	29	34	50	43	57	116	117	126	129	121	99	22

Table 2-2 presents the expected construction equipment on a monthly basis. The first two months of construction will require the most construction equipment with 22 and 20 pieces of equipment onsite,

respectively. By month 5 the construction equipment numbers drop by half with 11 pieces of equipment required onsite.

Table 2-2. Construction Equipment by Month

Month	1	2	3	4	5	6	7	8	9	10	11	12	13	14
Description														
Excavators	2	1	1	0	0	0	0	0	0	0	0	0	0	0
Backhoe	1	2	2	1	1	1	1	0	0	0	0	0	0	0
10 Wheel Dump Truck	8	3	2	1	1	0	0	0	0	0	0	0	0	0
Dozer	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Front End Loader	2	3	3	1	1	0	0	0	0	0	0	0	0	0
75 Ton Hydraulic Crane	0	0	0	1	0	0	1	1	0	0	0	0	0	0
35 Ton Hydraulic Crane	0	0	0	0	0	0	0	0	2	2	0	0	0	0
Fork Lift	1	2	2	2	2	3	3	3	3	3	2	2	1	1
Grader	2	2	2	2	1	1	0	0	0	0	0	0	0	0
Compactor	2	2	1	1	1	1	1	1	0	0	0	0	0	0
Stake Truck	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Water Truck	2	2	1	1	1	1	1	1	1	1	1	1	1	1
Pick-up Truck	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Air Compressor	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Light Towers	1	1	1	2	2	2	1	1	1	1	0	0	0	0
Heavy Lift Lattice Boom Main Crane	0	1	1	0	0	0	0	0	0	0	0	0	0	0

Construction will require a number of vehicle trips to the site. These trips include workers, material, and equipment deliveries. Table 2-3 presents the number of morning and evening vehicle trips to the site.

Table 2-3. Construction Trip Generation

Trip Type	AM Peak Hour			PM Peak Hour		
	In	Out	Total	In	Out	Total
Delivery/Haul Trucks	20	20	40	30	30	60
Workers	200	0	200	0	200	200
Total Construction Traffic	220	20	240	30	230	260

Based on the geotechnical investigation, the soils under the project site include approximately 2.5 feet of undocumented fill consisting of hard fat clay with gravel. Beneath the undocumented fill is a 2.5 to 7 feet of stiff to hard fat clay with varying amounts of sand. Beneath the hard fat clays, boring encountered medium stiff to very stiff lean clays with varying amounts of sand and silt with interbedded layers of loose to very dense sands with varying amounts of clay and silt to the extent of the geotechnical investigation (at 80 feet below grade). The geotechnical investigation determined that the potential exists for liquefaction-induced settlement, lateral spreading, shallow groundwater (6.5 to 13 feet below grade), and expansive soils common in this region.

The geotechnical investigation suggests the use of spread footings for building foundations and densification techniques to address the liquefaction/lateral spreading and expansive soils. The densification technique involves the vertical/horizontal compaction of soils beneath the foundations to reduce the total settlement to acceptable levels.

2.5 Project Design Measures

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

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

These project design measures are consistent with best practices and existing regulatory requirements. They include the following by environmental discipline:

2.5.1 Air and Water Quality

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

2.5.2 Biological Resources

- Preconstruction surveys will be performed for biological resources by a qualified biologist. The surveys will identify any active nests that could be disturbed during construction. Surveys will be completed no more than 7 days prior to the initiation of ground disturbance. During this survey, the biologist shall inspect vegetation along the perimeter of the project site.
- A no-work buffer will be established around any active nests with an appropriate buffer for the nesting species. The buffer widths will be developed by a qualified biologist, based on species’ sensitivity to disturbance, planned construction activities, and baseline level of human activity.

- The biologist will draft a technical memorandum documenting the result of the survey and any designated buffer zones, which may be submitted to the Director of Community Development prior to the start of ground disturbance activities.

2.5.3 Cultural Resources

- The Applicant will secure the services of a Secretary of the Interior-qualified archaeologist and a Native American monitor to be on-call during construction in the event a historic or prehistoric resource is encountered. If prehistoric and/or historic resources are encountered during construction, all activity within a 50-foot radius of the find will be stopped and the archaeologist/Native American monitor will 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 will provide recommendations regarding eligibility for the California Register of Historical Resources, data recovery, curation, or other appropriate mitigation. Ground disturbance within the 50-foot radius can resume once these steps are taken and the City Director of Community Development has concurred with the recommendations.
- If human remains are discovered during construction, a 50-foot radius exclusion zone will be established to protect the find and the Santa Clara County Coroner will be notified to 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 will comply with Health and Human Safety Code Section 7050.5(b).
- Within 30 days of the completion of construction or archaeological/Native American monitoring is terminated, the Applicant will have the archaeologist/Native American monitor prepare a report of findings. The report will document the archaeological/Native American resource finds, recommendations, data recovery efforts, and other pertinent information gleaned during construction. The report may be submitted to the City Director of Community Development for review and approval. The Applicant will submit the final report to the Northwest Information Center at Sonoma State University.

2.5.4 Paleontological Resources

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

2.6 Facility Operation

The standby generators will be run for testing and maintenance purposes and otherwise will not operate unless there is an interruption of the electrical supply. 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). Table 2-4 presents the expected testing and maintenance operations for each engine on a monthly, quarterly, and annual basis.

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

	Duration		Fuel Consumption		Annual Operations	
Maintenance Event	Frequency	Hours	Load Factor	Gallons/Hour	Gallons/Event	Hours/Year
Monthly Generation	8	0.5	50%	160	320	4
Quarterly Generation	3	0.5	100%	160	240	1.5
Annual Generation	1	1.25	100%	160	200	1.25
Annual UPS Testing	2	3	100%	160	960	6
Annual Switchgear Testing	1	1	100%	160	160	1
Contingency Testing	1	1.6	100%	160	258	1.6
Total	NA	NA	NA	NA	2138	15.4

2.7 Alternate Standby Generation Technologies

The purpose of the standby generators is to provide LDC's customers with a high degree of electrical reliability, which requires installation of redundant systems (i.e., twice as much generating capability as necessary to operate the facility). Diesel fired electrical generators have a long and successful history of satisfying the needs of emergency electrical needs of critical infrastructure. Even though there will be no significant impacts from the project due to the measures incorporated into the project design, the Applicant considered alternate standby generation technologies. The technologies considered included alternative-fueled generators (propane/gasoline/natural gas), fuel cells, renewable generation, and storage. However, none of the alternatives can meet the basic project objectives in a feasible, cost-effective manner, nor do they lessen any of the already insignificant impacts from the project.

2.7.1 Alternative Fuel Sources

The use of alternative-fueled generators included consideration of the use of propane, gasoline, and natural gas fired standby generators. The proposed diesel-fired standby generators include up to 10,300 gallons of fuel. Storage of diesel fuel does not require vapor control systems to protect public health/safety and can be stored for indefinite periods of time. Diesel fuel is widely used in automobiles, emergency generators supporting other critical infrastructure (hospitals, police stations, communication systems, etc.), and construction equipment. Diesel fuel accounted for 21 percent of the fuels consumed in the United States transportation sector.[1] Diesel fuel has a lower vapor pressure as compared to other fuels (gasoline, propane, and natural gas), making it inherently safer to use and store as compared to alternative fuel sources. In contrast, natural gas and propane gas fired generators are available in 3.0-MW units, however, designing and installing an onsite natural gas storage system would not be cost effective and would require a significantly larger project site to accommodate the equipment required to pressurize and store the fuel. Natural gas fueled units would also be susceptible to outages from the natural gas supplier in the event of extraordinary natural gas system events (such as line ruptures or supply shortage due to extreme weather events). Propane fired generators requires fuel storage tanks. The amount of propane required to support 99 MWs of standby generation for 48-hours (consistent with the reliability provided by proposed diesel standby generators) would require multiple storage tanks, increasing the risk to public health from accidental releases from transportation and onsite storage.

2.7.2 Alternative Technologies

The Applicant considered whether alternative technologies could provide the same level of reliability and consistency as the standby generators. Fuel cells convert chemical energy, in the form of hydrogen or natural gas, to electricity with water, heat, and carbon dioxide as the possible by-products. Standby fuel

[1] https://www.eia.gov/energyexplained/index.php?page=diesel_use

cells are configured in “stacks” of units, allowing the fuel cell output to be scalable up to utility scales.[2] The use of fuel cells will either require the installation of a natural gas pipeline, increasing the project’s impacts, or the storage of hydrogen sufficient to generate 99 MWs. The LDC standby generators do not require the installation of a new, significant natural gas pipeline to support the project. Assuming the use of natural gas fuel cell, and a pipeline of sufficient size and capacity were available, 99 MWs of fuel cells will require a substantially greater area than is required for the standby diesel generators. Given the standby diesel generators are expected to operate under 16 hours per year, the environmental impacts associated with installing a natural gas pipeline of sufficient size for fuel cells in an urban area like Santa Clara County will have a greater impact than the use of the proposed standby generators. Hydrogen is a highly flammable material stored under significant pressure and storage is a challenge for stationary and portable applications.[3] Hydrogen is not considered feasible in similar project applications.

Due to the intermittent nature, the use of renewable generation sources (wind/hydroelectric/solar) on their own would not satisfy LDC’s need for reliable standby generation. The space and resource requirements for 99 MWs of renewable power and their intermittent nature make such applications infeasible for this project and site. Renewable generation resources, such as solar or wind, coupled with a battery installation, would require significantly more space than that currently operated by the standby generators, and would not fit on the current project site and would not avoid or minimize any potentially significant impacts.

[2] https://www.energy.gov/sites/prod/files/2014/10/f19/ftco_early_mkts_fc_backup_power_fact_sheet.pdf
[3] https://www.energy.gov/eere/fuelcells/hydrogen-storage

3. Environmental Information

This section contains 21 individual sections representing the environmental, public health and local impact assessment disciplines for which the California Energy Commission (CEC) Energy Facilities Siting Regulations (Title 20, California Code of Regulations, Section 1936 et seq.) Application for a Small Power Plant Exemption.

3.1 Aesthetics

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

Environmental checklist established by CEQA Guidelines, Appendix G.

3.1.1 Setting

The LDC project is located at 2201 Laurelwood Road in Santa Clara, California. The project site is bounded by industrial and commercial land uses on Juliette Lane to the east, a parking lot to the west, US-101 to the south, and industrial/commercial uses to the north. The site is composed of a single parcel that was previously developed with industrial warehouse, manufacturing, and office facility uses, and a paved parking area. All structures will have been removed by the previous owner as a condition of the sales agreement prior to occupancy by the Applicant. The site will be graded level, and the existing perimeter landscape trees and fencing will remain. There are no unique or high-quality visual resources on the project site itself.

3.1.2 Existing Landscape Setting and Viewer Characteristics

The project is bordered by US-101 to the south and a parking lot to the west, and commercial and industrial properties to the north and east. The surrounding buildings range in size from 2 to 6 stories high and typically use concrete and glass as building materials. 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, solar-panel-topped parking structures, and reflective building surface and windows.

As identified in the Laurelwood Tree Protection Report (provided as Appendix 3.1-A), there are 166 trees on the landscaped areas on and near the project site (98 on the property itself and 68 immediately adjacent on neighboring properties). These trees are located along the perimeter of the site, including along Juliette Lane, the frontage with US-101, between the site and a parking lot to the west, and between the site and an office building to the north. Most of the trees to the west and north are located on neighboring properties.

Regional Context. The project site and the surrounding area are relatively flat and, as a result, the site is viewable primarily from adjacent commercial and industrial buildings and local streets. Fleeting views are visible between landscaping trees from US-101.

No designated scenic vistas or view corridors are located within the city of Santa Clara (City); however, the City's *General Plan Integrated Environmental Impact Report* (EIR) (2011) lists the Santa Cruz Mountains, Diablo Range, San Tomas Aquino Creek, and the Guadalupe River as visual resources within the city. Views of the foothills to the east and west of the project site are obscured by existing buildings and landscaping trees.

The project site is mostly screened from views from San Tomas Aquino Creek (located approximately 500 feet west of the project site) by a row of trees and commercial and industrial buildings located to the north and northwest of the site.

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 (2018).

3.1.3 Environmental Impacts and Mitigation Measures

Aesthetics Impacts

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

No Impact. No designated scenic vistas or view corridors are located within the city. Views of the foothills to the east and west of the project site are obscured by existing buildings and landscaping trees.

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 will not be visible from the viewsheds of any of the visual resources in the city identified by the Santa Clara General Plan EIR because of existing development, vegetation, and distance, and there are no scenic vistas within the city (2011). The project site is not within a scenic viewshed or along a scenic highway designated by Caltrans. Therefore, the project will have no potential to impact scenic vistas or view corridors. No trees, rock outcroppings, and historic buildings are affected.

Visible Water Vapor Plumes

When internal combustion engines (for example, diesel standby generators) operate during conditions of low ambient temperature and high relative humidity, the water vapor in the exhaust plume condenses as it mixes with the cooler ambient air, resulting in formation of a visible water vapor plume. This is similar to when the moisture-laden air in a person's breath on a cold day is chilled to the point where the water vapor condenses into 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.

Internal combustion engines, such as the proposed 56 standby generators, produce high temperature exhausts that will disperse quickly, thereby minimizing the probability that visible plumes will form. Typically, the ambient conditions that produce visible plumes (low ambient temperatures and high relative humidity) are unlikely to coincide with the operation of the standby generators. Emergency operation of the standby generators are more likely to occur during warm ambient conditions when electrical demand is at its highest, not during cooler ambient conditions that tend to increase the potential for visible plume formation. As such, the formation of visible plumes from the project's standby generators is unlikely. In addition, there are no unique, quality visual resources on the project site itself or the vicinity. No impact on visual resources will occur pertaining to visible plumes.

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

Less than Significant Impact. As discussed in Section 3.11, Land Use and Planning, the project is consistent with applicable zoning. The buildings and site improvements will be subject to the City's[1] design review process to ensure that the project will not adversely affect the visual quality of the project area and will 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, implementation of the project will not have the potential to substantially degrade the existing visual quality or character of the site or its surroundings.

Consistent with applicable City requirements, 20 trees located on the site will be removed to accommodate project features; however, 142 existing trees will remain in place as part of the project. In addition, approximately 37 landscape trees will be added as part of the project design. The project will not result in adverse aesthetic impacts related to tree or landscape removal because the number of trees planted exceeds the number of trees removed.

Santa Clara's design review process ensures that the project will construct buildings with similar height and density as surrounding industrial development. The height of the proposed buildings, as defined by the City, will be 87.5 feet above ground surface. The façades of the proposed data center structures will consist primarily of a smooth stucco finish in varying shades of gray. Each of the data center structures will have a storefront that will be constructed of aluminum and glass. The enclosures for the generators will consist of powder-coated metal panels in grey. The design of the proposed buildings incorporates the use of grey and silver tones and varied textures, along with accent elements such as an exposed stair/elevator tower. The design of the project will assist in creating visual interest and reduce potential perceived height and bulk of the structures by breaking up the building's facade.

The proposed buildings will be similar in scale to the surrounding commercial and industrial structures. The façades of the proposed buildings will be different than, but visually similar to, the surrounding land uses, which primarily include industrial and commercial structures that use concrete and glass with blue accents. The proposed buildings and surface parking lot design will be compatible with the visual character of the surrounding area. Overall, the project will be consistent with adjacent industrial and commercial development in terms of visual character and quality.

Construction Activities

The project will involve construction activities for new 87.5-foot-tall data center buildings with supporting parking, an electrical substation, and 56 standby generators located in generation yards adjacent to the data center buildings. During construction, the project site will be enclosed by the existing fencing that will obscure views of onsite storage of soils, pipes, machinery, and building materials. Visual impacts during construction will be temporary and will cease upon completion of construction activities. Therefore, the temporary construction-related activities of the project will not substantially degrade the existing visual quality or character of the project site or its surroundings.

[1] 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.

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

Less than Significant Impact. The project will include outdoor security and wayfinding lighting on the project site located along walkways, driveways, entrance areas, and in surface parking areas, comparable to the existing ambient lighting in the surrounding industrial and commercial area. The project will increase the amount of lighting on the project site, but will not increase the overall level of illumination in the area given the previous development on the project site. The design of exterior facades of the proposed buildings will be subject to the City's design review process prior to issuance of building permits to ensure the project will 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 will be required as part of the project. In addition, the exterior surfaces of the proposed buildings will use low-glare glazing and will not be a significant source of glare during daytime hours. Lastly, signage will be subject to the City's design review process and consistent with applicable regulations.

Previously Identified Mitigation Measures: None.

New Proposed Mitigation Measures: Because there are no significant impacts to aesthetics due to the incorporation of the project design features described above, no additional mitigation measures are required. As noted above, the buildings and site improvements will be subject to the City's design review process to ensure that the project will not adversely affect the visual quality of the area and will conform to current architectural and landscaping standards.

3.1.4 References

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

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

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

3.2 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 prepared by the California Department of Conservation (DOC) (1997) as an optional model to use in assessing impacts on agriculture and farmland. In determining whether impacts to forest resources, including timber land, 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 Program, the Forest Legacy Program, and forest carbon measurement methodology provided in the compliance offset protocol for U.S. forest projects adopted by the California Air Resources Board (2014).

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.

3.2.1 Setting

The Laurelwood Data Center site is within an extensive urban area designated as Urban and Built-up Land on the Santa Clara County Important Farmland 2014 map (DOC, 2016). 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" (DOC, 2016). The project site, as well as the city of Santa Clara and surrounding cities, does not include farmland of any type.

The site and surrounding area are not designated as forest land, and there are no forest resources or timberland present in the region. According to the City of Santa Clara Planning Division (2019), the site is zoned as MP (Planned Industrial) and is primarily surrounded by industrial and commercial uses.

3.2.2 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 LDC site is designated as Urban and Built-up Land on the Santa Clara County Important Farmland 2014 map (DOC, 2016) and has been in industrial/commercial use since the 1960s. The project does not convert designated farmland to non-agricultural use, therefore no agriculture resource impacts will occur.

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

No Impact. As the project site is designated as Urban and Built-up Land and located within an urban area, with no farmland located near the project vicinity, Furthermore, the site is not subject to a Williamson Act contract. Therefore, no agriculture or forest resources impacts will 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 MP (Planned Industrial), which permits light manufacturing and activity that, in the opinion of the Planning Commission, are similar in character to other permitted uses and not more detrimental to the health, safety, and general welfare of the neighborhood than any permitted use. The project site and surrounding areas are not zoned for forest land, timberland, or timberland production. Therefore, no forest resources impact will 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 has been in historic use as an industrial facility since the 1960s. The immediate surrounding area has also been historically used for industrial uses. The site does not contain forest land and is not in an area where forest land is present. Therefore, no forest resource impacts will occur.

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

No Impact. The project site use will remain MP (Planned Industrial) and will not convert farmland or forest land to a new use. The site has historically been developed for industrial uses and will continue this use with this project. Therefore, no agriculture or forest resource impacts will occur.

Previously Identified Mitigation Measures: None.

New Proposed Mitigation Measures: None.

3.2.3 References

California Air Resources Board. 2014. *Compliance Offset Protocol U.S. Forest Offset Projects*. Adopted November 14, 2014. Accessed February 2019. https://www.arb.ca.gov/cc/capandtrade/protocols/usforest/usforestprojects_2014.htm.

California Department of Conservation (DOC). 1997. Land Evaluation & Site Assessment Model (LESA) Model.

California Department of Conservation (DOC). 2016. *Santa Clara*. Accessed February 5, 2019. ftp://ftp.consrv.ca.gov/pub/dlrp/FMMP/pdf/2014/scl14.pdf.

City of Santa Clara. 2019. *Planning Division MAP Santa Clara*. Accessed February 5, 2019. https://map.santaclaraca.gov/public/index.html?viewer=regional.

3.3 Air Quality

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

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

Environmental checklist established by CEQA Guidelines, Appendix G.

3.3.1 Setting

Overall air quality in the San Francisco Bay Area Air Basin (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[1]. The project area's proximity to both the Pacific Ocean and the San Francisco Bay has a moderating influence on the climate. This portion of the Santa Clara Valley is bounded by the San Francisco Bay to the north, the Santa Cruz Mountains to the southwest, and 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 particulate matter standards continue to persist in the SFBAAB and still pose challenges to state and local air pollution control agencies (CARB, 2013).

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

Air quality is determined by measuring ambient concentrations of criteria pollutants, which are those pollutants for which acceptable levels of exposure can be determined and for which standards have been set. Degradation of air quality is determined by comparing projected air concentrations to the available ambient air quality standards. Toxic air contaminants (TACs) are different from criteria pollutants as there are no ambient air quality standards for TACs, and a health risk assessment (HRA) is conducted to evaluate whether risks of exposure to TACs create an adverse impact.

Please see Section 3.8 of this document for more details on the project's greenhouse gas emissions.

3.3.1.1 Overview of Existing Air Quality

Air Quality Standards. The U.S. Environmental Protection Agency (EPA) has established National Ambient Air Quality Standards (NAAQS) for the following seven pollutants, termed criteria pollutants: ozone, nitrogen dioxide (NO_2), carbon monoxide (CO), sulfur dioxide (SO_2), particulate matter with aerodynamic diameter less than or equal to 10 microns (PM_{10}), particulate matter with aerodynamic

[1] The rapid horizontal movement of air and injection of cleaner air.

diameter less than or equal to 2.5 microns ($PM_{2.5}$), and airborne lead. Similarly, the California Air Resources Board (CARB) has established California Ambient Air Quality Standards (CAAQS) for the seven pollutants listed above and for visibility-reducing particles (VRP), sulfates, hydrogen sulfide, and vinyl chloride. Unique meteorological conditions in California and differences of opinion by medical panels established by the CARB and 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 Table 3.3-1a.

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

Pollutant	Averaging Time	CAAQS[a]	NAAQS[b]	
			Primary[c]	Secondary[d]
Ozone	1 hour 8 hours	0.09 ppm 0.070 ppm	-- 0.070 ppm	-- 0.070 ppm
CO	1 hour 8 hours	20 ppm 9.0 ppm	35 ppm 9 ppm	-- --
NO2	1 hour Annual Arithmetic Mean	0.18 ppm 0.030 ppm	0.100 ppm[e] 0.053 ppm	-- 0.053 ppm
SO2	1 hour 3 hours 24 hours Annual Arithmetic Mean	0.25 ppm -- 0.04 ppm --	0.075 ppm[f] -- 0.14 ppm 0.030 ppm	-- 0.5 ppm -- --
PM10	24 hours Annual Arithmetic Mean	50 µg/m^3 20 µg/m^3	150 µg/ m^3 --	150 µg/ m^3 --
PM2.5	24 hours Annual Arithmetic Mean	-- 12 µg/ m^3	35 µg/ m^3 12 µg/ m^3	35 µg/ m^3 15 µg/ m^3
Lead	30-Day Average Calendar Quarter Rolling 3-Month Average	1.5 µg/ m^3 -- --	-- 1.5 µg/ m^3 0.15 µg/ m^3	-- 1.5 µg/ m^3 0.15 µg/ m^3
VRP	8 hours	g	--	--
Sulfates	24 hours	25 µg/ m^3	--	--
Hydrogen Sulfide	1 hour	0.03 ppm	--	--
Vinyl Chloride	24 hours	0.01 ppm	--	--

Source: CARB, 2016.

[a] CAAQS for ozone, CO, SO2 (1- and 24-hour), NO2, and particulate matter (PM10, PM2.5, and VRP) are values that are not to be exceeded. All others are not to be equaled or exceeded.

[b] NAAQS (other than ozone, particulate matter, and those based on annual arithmetic mean) are not to be exceeded more than once a year. The ozone standard is attained when the fourth highest 8-hour concentration measured at each site in 1 year, averaged over 3 years, is equal to or less than the standard. For PM10, the 24-hour standard is attained when the expected number of days per calendar year with a 24-hour average concentration above 150 µg/ m^3 is equal to or less than 1 on average over 3 years. For PM2.5, the 24-hour standard is attained when 98 percent of the daily concentrations, averaged over 3 years, are equal to or less than the standard.

[c] Primary Standards: The levels of air quality necessary, with an adequate margin of safety, to protect the public health.
d Secondary Standards: The levels of air quality necessary to protect the public welfare from any known or anticipated adverse effects of a pollutant.

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

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

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

Notes:

-- = No standard has been adopted for this averaging time
µg/ m^3 = microgram(s) per cubic meter
ppm = part(s) per million

Attainment Status. The EPA, CARB, and local air districts classify areas 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 Laurelwood Data Center (LDC or project) would be located within Santa Clara County, under the jurisdiction of the Bay Area Air Quality Management District (BAAQMD). Table 3.3-1b summarizes attainment status for the criteria pollutants in the SFBAAB with regards to both the federal and state standards.

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

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

Sources: EPA, 2019b; CARB, 2019a; BAAQMD, 2017a

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

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

The LDC will either not emit or emit in immeasurable quantities lead, VRP, sulfates, hydrogen sulfide, or vinyl chloride. Therefore, these pollutants are not addressed in further detail in this report.

Existing Conditions. The existing conditions in the project area are summarized in Table 3.3-1c, which provides the background ambient air concentrations of criteria pollutants for the previous 3 years as measured at certified monitoring stations near the project site. To evaluate air quality degradation as a result of the project, modeled air concentrations are combined with the respective background concentrations presented in Table 3.3-1c and used for comparison to the NAAQS and CAAQS.

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

Pollutant	Averaging Time	Units	2015	2016	2017
Ozone	1 hour 8 hours	ppm ppm	0.094 0.081	0.087 0.066	0.121 0.098
CO	1 hour 8 hours	ppm ppm	2.4 1.8	1.9 1.4	2.1 1.8
NO_2	1 hour (maximum) 1 hour (98th percentile) Annual Arithmetic Mean	ppb ppb ppb	49 44 12.81	51 42 11.26	68 50 12.24
SO_2	1 hour (maximum) 1 hour (99th percentile) 3 hours[b] 24 hours Annual Arithmetic Mean	ppb ppb ppb ppb ppb	3.1 2.0 3.1 1.1 0.30	1.8 2.0 1.8 0.8 0.19	3.6 3.0 3.6 1.1 0.20
PM_{10}	24 hours Annual Arithmetic Mean[c]	$\mu g/m^3$ $\mu g/m^3$	58 21.9	40 18.3	69 21.3
$PM_{2.5}$	24 hours (98th percentile) Annual Arithmetic Mean	$\mu g/m^3$ $\mu g/m^3$	32 10.6	20 8.4	41 10.1

Source: EPA, 2019a; CARB, 2019b.

[a] Unless otherwise noted, background values were collected from Monitor Site ID 060850005 located at 158B Jackson Street in San Jose, California, as reported by EPA.

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

[c] Background values were collected from the monitoring site located at 156B Jackson Street in San Jose, California, as reported by the CARB.

Each criteria pollutant and TAC is described in this section, including their known health risks.

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

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

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

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

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

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

3.3.1.2 Regulatory Background

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

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

CAA 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 10 tons per year of any specified HAP or more than 25 tons per year of any combination of HAPs to apply Maximum Achievable Control Technology (MACT).

State. CARB is the state agency that regulates mobile sources throughout the state and oversees implementation of the state air quality laws and regulations, including the California Clean Air Act. The CARB also established the CAAQS, which are typically considered more stringent than the NAAQS.

TACs are primarily regulated through state and local risk management programs, which are designed to eliminate, avoid, or minimize the risk of adverse health effects from exposures to TACs. A chemical becomes a regulated TAC in California based on designation by the California Office of Environmental Health Hazard Assessment (OEHHA) (BAAQMD, 2017c). Assembly Bill 2588, also known as the Air Toxics “Hot Spots” Information and Assessment Act[2], requires that, based on results of an HRA conducted per CARB/OEHHA guidelines, TACs do not exceed acceptable levels. As part of its jurisdiction under Assembly Bill 2588[3], OEHHA derives cancer potencies and reference exposure levels (RELs) for individual air contaminants, based on the current scientific knowledge that includes consideration of possible differential effects on the health of infants, children, and other sensitive subpopulations, and in accordance with the mandate of the Children’s Environmental Health Protection Act[4]. Sections of the California Public Resources Code require a quantitative HRA for new or modified sources, including power plants that emit one or more TACs[5].

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

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

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

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

Regional. BAAQMD is the primary regional agency responsible for attaining and maintaining air quality conditions in the SFBAAB through a comprehensive program of planning, regulation, and enforcement (BAAQMD, 2017c). Some of the BAAQMD's key air plans and regulations are described below.

2017 Bay Area Clean Air Plan. The 2017 Bay Area Clean Air Plan was adopted by the BAAQMD on April 19, 2017, and provides a regional strategy to protect public health and protect the climate. The 2017 Bay Area Clean Air Plan updates the most recent Bay Area ozone plan, the 2010 Clean Air Plan, and is a multi-pollutant air quality plan addressing four categories of air pollutants (BAAQMD, 2017b):

1) Ground-level ozone and the key ozone precursor pollutants (VOCs and NO_X)
2) Particulate matter (PM10 and $PM_{2.5}$), as well as the precursors to secondary $PM_{2.5}$
3) TACs
4) Greenhouse gases

BAAQMD Regulation 2, Rule 2: New Source Review. This rule applies to all new or modified sources requiring a Permit to Operate and requires Best Available Control Technology (BACT) for any new source with a Potential to Emit of 10.0 or more pounds per day (lb/day) of any single pollutant. Offsets are required at a 1:1 ratio if more than 10 tons per year of NO_X or Precursor Organic Compounds, or more than 100 tons per year of $PM_{2.5}$, PM_{10}, or SO_2, are emitted.

BAAQMD Regulation 2, Rule 5: New Source Review of Toxic Air Contaminants. This rule provides for the review of new and modified sources of TAC emissions to evaluate potential public exposure and health risk. Under this rule, a project would be denied an Authority to Construct if it exceeds any of the specified risk limits, which are consistent with BAAQMD's California Environmental Quality Act (CEQA) significance thresholds. Best Available Control Technology for Toxics (TBACT) would also be required for any new or modified source of TACs where the source has a cancer risk greater than 1.0 in 1 million or a chronic hazard index (HI) greater than 0.20. The specific toxicity values of each particular TAC, as identified by OEHHA, are listed in Table 2-5-1 of this rule for use in the HRA (BAAQMD, 2017c).

3.3.2 Significance Criteria

This analysis is based upon the general methodologies in the most recent BAAQMD CEQA Guidelines (last updated in May 2017 [BAAQMD, 2017c]) and numeric thresholds for the SFBAAB, including the criteria pollutant thresholds listed in Table 3.3-2.

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 1 million exposed individuals, typically over a lifetime of exposure. Acute and chronic exposure to non-carcinogens is expressed as an HI, which is the ratio of expected exposure levels to an acceptable REL (BAAQMD, 2017c).

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

The significance thresholds for a single source are as follows:

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

The significance thresholds for cumulative impacts are also summarized below. 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 1 million
- A non-cancer chronic HI greater than 10.0
- An annual average $PM_{2.5}$ concentration of greater than 0.8 µg/m^3

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

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

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

Source: BAAQMD, 2017c.

> = greater than
BMP = best management practice

3.3.3 Project Emissions, Air Quality Impact Analysis, and Health Risk Assessment

3.3.3.1 Project Emissions

Construction. Short-term construction emissions of CO, VOCs, NO_X, SO_2, PM_{10}, and $PM_{2.5}$ were evaluated. The only TAC considered to result from construction activities was diesel particulate matter (DPM), which was assumed equal to onsite exhaust PM_{10} emissions. Detailed construction emission calculations are presented in Appendix 3.3-A. Construction emissions are a result of construction equipment, material movement, paving activities, and on- and offsite vehicle trips, such as material haul trucks, worker commutes, and delivery vehicles. Emissions from the 14-month construction period were estimated using construction equipment emission factors, horsepower, and load factors from the *CalEEMod User's Guide* (BREEZE, 2017); paving emission factors from the *CalEEMod User's Guide* (BREEZE, 2017); and on- and offsite vehicle exhaust and idling emission factors from EMFAC2014. Fugitive dust emission factors for truck dumping/loading and grading activities were derived using methodology from the *CalEEMod User's Guide* (BREEZE, 2017); fugitive dust emission factors for vehicle travel on paved and unpaved roads were derived using methodology from *AP-42* (EPA, 2011 and 2006, respectively). Estimated criteria pollutant construction emissions for the project are summarized in Table 3.3-3, and conservatively assume that all construction activity would occur concurrently.

Table 3.3-3 Criteria Pollutant Emissions from Project Construction

	VOCs	NO_x	PM_{10}[a]	$PM_{2.5}$[a]
Average Daily Emissions (lb/day)b	3.68	40.7	6.91	2.38
Maximum Emissions (tons per project)	0.59	6.55	1.11	0.38
BAAQMD Thresholds (lb/day)	54	54	82	54
Exceeds Threshold?	No	No	No	No

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

[b] Although peak daily emissions may be higher than what is reported here, the BAAQMD's thresholds are average daily thresholds. Accordingly, the results reported are the total project emissions averaged over the entire construction duration.

As shown in Table 3.3-3, construction of the project would not generate VOCs, NO_X, PM_{10}, or $PM_{2.5}$ emissions in excess of BAAQMD's numeric thresholds. The BAAQMD's CEQA Guidelines consider fugitive dust impacts to be less than significant through the application of best management practices (BMPs). To assure fugitive dust impacts are less than significant, the Applicant will incorporate the BAAQMD's recommended BMPs as a project design feature. These project design features will include:

- All exposed surfaces (for example, 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 miles per hour.
- 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 Airborne Toxic Control Measure to Limit Diesel-Fueled Commercial Motor Vehicle Idling [Title 13, Section 2485, 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.

Operation. Operational emissions of CO, VOCs, NO_X, SO_2, PM_{10}, and $PM_{2.5}$ were evaluated. TACs were only considered to result from operation of the standby diesel generators. Detailed operation emission calculations are presented in Appendix 3.3-B. Operation emissions are a result of diesel fuel combustion from the standby diesel generators, offsite vehicle trips for worker commutes and material deliveries, and facility upkeep, such as architectural coatings, consumer product use, landscaping, water use, waste generation, natural gas use for comfort heating, and electricity use. Each of these emission sources are described in more detail below.

Stationary Sources. The project's 56 standby diesel generators would result in stationary combustion emissions. The generators proposed for installation are made by Caterpillar, with a certified Tier 2 rating and an engine output of 4,423 horsepower at full load. All generators would be equipped with a Miratech LTR® Diesel Particulate Filter System, which is expected to control particulate matter by at least 85 percent. All generators would be tested routinely to ensure they would function during an emergency.

During routine readiness testing, criteria pollutants and TACs would be emitted directly from the generators. Criteria pollutant emissions from generator testing were quantified using information provided by the manufacturer, as specified in Appendix 3.3-B, and accounting for particulate matter controls. SO_2 emissions were based on the maximum sulfur content allowed in California diesel (15 parts per million by weight per Title 13, Section 2281, CCR), and an assumed 100 percent conversion of fuel sulfur to SO_2. TAC emissions resulting from diesel stationary combustion were assumed equal to PM_{10} emissions or estimated using speciated emission factors from *AP-42* (EPA, 1996). It was assumed that testing would occur for no more than 50 hours per year, as limited by the Airborne Toxic Control Measure for Stationary Toxic Compression Ignition Engines (Title 17, Section 93115, CCR). Consistent with BAAQMD permitting methods, no load factor was applied. Emissions resulting from emergency operations were not estimated because, when permitting standby diesel generators, the BAAQMD typically limits only emissions resulting from non-emergency use.

Table 3.3-4 provides daily and annual criteria pollutant emission estimates assuming each generator is operated 50 hours per year, with daily emissions estimated assuming all generators are operated at 50 hours per year, and then averaged over the year to get a daily average maximum emissions estimate.[6] Per BAAQMD's Regulation 2, Rule 2, new sources with a Potential to Emit of 10.0 lb/day or more of any single pollutant must be equipped with BACT. As shown in Table 3.3-4, daily NO_X emissions from the standby generators exceed the BAAQMD 10.0 lb/day limit. Accordingly, these sources will be equipped with a Diesel Particulate Filter System, which is considered BACT. BAAQMD's Regulation 2, Rule 2 also requires new sources that emit more than 10 tons per year of NO_X to fully offset emissions. As shown in Table 3.3-4, annual NO_X emissions from the standby generators would total approximately 99 tons per year. Accordingly, the NO_X emissions will be fully offset through the air permitting process.

Table 3.3-4 Criteria Pollutant Emissions from All Standby Generators

Evaluation Period	Pollutant	Emissions	BAAQMD Thresholds	Exceeds Threshold?
Average Daily Emissions (lb/day)[a]	NO_x[c]	552	54	Yes
	VOCs	11.4	54	No
	CO[d]	99.4	--	N/A
	SO_2	0.35	--	N/A
	PM_{10}	0.57	82	No
	$PM_{2.5}$	0.57	54	No
Maximum Annual Emissions (tons per year)[b]	NO_x[c]	99.4	10	Yes
	VOCs	2.05	10	No
	CO[d]	17.9	--	N/A
	SO_2	0.06	--	N/A
	PM_{10}	0.10	15	No
	$PM_{2.5}$	0.10	10	No

[a] The average daily emissions were derived from the maximum annual emissions, assuming 12 months per year and 30 days per month.

[b] The maximum annual emissions were estimated assuming that all 56 generators would operate 50 hours per year.

[c] NO_X emissions will be fully offset through the air permitting process with the BAAQMD.

[d] In the absence of a mass-based threshold, CO impacts were evaluated through air dispersion modeling, as described in Section 3.3.3.2.

-- = No mass-based threshold has been adopted for this pollutant

N/A = Not applicable because no mass-based threshold is available

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

Table 3.3-5 provides hourly and annual TAC emission estimates, again assuming each generator is operated 50 hours per year. The characterization of TAC emissions used to conduct the HRA are described in Section 3.3.3.3, for purposes of demonstrating compliance with BAAQMD's Regulation 2, Rule 5. The federal CAA requires MACT on new sources that emit more than 10 tons per year of any single HAP or more than 25 tons per year of any combination of HAPs. As shown in Table 3.3-5, the project's annual emissions of any single HAP or combination of HAPs will be below the MACT thresholds.

Table 3.3-5 Toxic Air Contaminant Emissions from All Standby Generators

Pollutant	Hourly Emissions (lb/hr)[a]	Annual Emissions (tons per year)[b]
Acenaphthene	7.75E-03	1.94E-04
Acenaphthylene	1.53E-02	3.82E-04
Acetaldehyde	4.17E-02	1.04E-03
Acrolein	1.30E-02	3.26E-04
Anthracene	2.04E-03	5.09E-05
Benz(a)anthracene	1.03E-03	2.57E-05
Benzene	1.28E+00	3.21E-02
Benzo(a)pyrene	4.25E-04	1.06E-05
Benzo(b)fluoranthene	1.84E-03	4.59E-05
Benzo(g,h,i)perylene	9.20E-04	2.30E-05
Benzo(k)fluoranthene	3.61E-04	9.02E-06
Chyrsene	2.53E-03	6.33E-05
Dibenz(a,h)anthracene	5.73E-04	1.43E-05
DPM[c]	4.10E+00	1.02E-01
Fluoranthene	6.67E-03	1.67E-04
Fluorene	2.12E-02	5.30E-04
Formaldehyde	1.31E-01	3.27E-03
Indeno(1,2,3-cd)pyrene	6.85E-04	1.71E-05
Naphthalene	2.15E-01	5.38E-03
Phenanthrene	6.75E-02	1.69E-03
Propylene	4.62E+00	1.15E-01
Pyrene	6.14E-03	1.54E-04
Toluene	4.65E-01	1.16E-02
Total PAHs	3.51E-01	8.77E-03
Xylenes	3.19E-01	7.99E-03

[a] Hourly emissions were estimated assuming that all 56 generators could be operated concurrently. In practice, standard operating procedures will limit testing to one generator per hour.

[b] The annual emissions were estimated assuming that all 56 generators would operate 50 hours per year.

[c] DPM emissions were assumed equal to exhaust PM_{10} emissions.

lb/hr = pound(s) per hour
PAH = Polycyclic Aromatic Hydrocarbon

Mobile Sources. Approximately 54 employees, including 8 environmental personnel, 18 operations personnel, 3 mechanics, and 25 security or administrative personnel, would be employed at the project site on a daily basis. There would be an average of 74 total daily vehicle trips, including vendor and employee trips, which would result in mobile source criteria pollutant emissions. These emissions were estimated using vehicle exhaust and idling emission factors from EMFAC2014. Emissions resulting from mobile source operation are included in Table 3.3-6.

Area and Energy Sources. The project would result in area and energy source criteria pollutant emissions associated with facility upkeep (that is, operation and maintenance). Area sources include landscaping activities, consumer product use, and periodic painting emissions. Energy sources include natural gas combustion for space heating, from sources assumed exempt from BAAQMD permitting.[7] Facility upkeep emissions were estimated using the California Emissions Estimator Model (CalEEMod), based on the square footage of the buildings to be constructed and paved areas. Emissions resulting from area sources are included in Table 3.3-6.

Table 3.3-6 Criteria Pollutant Emissions from Facility Operation

Source	VOCs	NO_x	PM_{10}	$PM_{2.5}$
Area Sources (lb/day)	21.8	0.00	0.00	0.00
Energy Sources (lb/day)[a]	0.57	5.22	0.40	0.40
Mobile Sources (lb/day)	0.11	2.22	0.22	0.10
Stationary Sources (lb/day)[b]	11.4	552	0.57	0.57
Total Average Daily Emissions (lb/day)	33.9	560	1.18	1.07
BAAQMD Thresholds (lb/day)	54	54	82	54
Exceeds Threshold?	No	Yes	No	No

[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 Regulation 2, Rule 2, stationary source NO_X emissions will be fully offset. Annual NO_X emissions from the standby generators would be approximately 99 tons per year (Table 3.3-4).

As shown in Table 3.3-6, operation of the project would not generate VOCs, PM_{10}, or $PM_{2.5}$ emissions in excess of BAAQMD's numeric thresholds. While NO_X emissions would exceed BAAQMD's numeric threshold, emissions from the standby generators would be fully offset during the permit process resulting in a less-than-significant impact.

3.3.3.2 Air Quality Impact Analysis

An ambient air quality impact analysis was conducted to compare worst-case ground-level impacts resulting from the LDC with established state and federal ambient air quality standards and applicable BAAQMD significance criteria. The analysis was conducted in accordance with the air quality impact analysis guidelines presented in EPA's 40 Code of Federal Regulations Part 51, Appendix W: *Guideline on Air Quality Models* (EPA, 2017).

The analysis includes an evaluation of the possible effects of simple, intermediate, and complex terrain, and aerodynamic effects (downwash) due to nearby buildings and structures on plume dispersion and ground-level concentrations. A numerical Gaussian plume model was used in the analysis. The model assumes that the concentrations of emissions within a plume can be characterized by a Gaussian

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

distribution of gaseous concentrations about the plume centerline. Gaussian dispersion models are approved by EPA and BAAQMD for regulatory use and are based on conservative assumptions (that is, the models tend to over-predict actual impacts by assuming steady-state conditions, no pollutant loss through conservation of mass, no chemical reactions, and so forth).

The subsections below present the following information:

- Dispersion modeling methodology for evaluating the impacts on ambient air quality
- Modeling source data used to evaluate the impacts on ambient air quality
- Dispersion modeling results compared to the CAAQS and NAAQS

3.3.3.2.1 Dispersion Modeling Methodology

Model Selection and Model Options. The American Meteorological Society/Environmental Protection Agency Regulatory Model (AERMOD) (Version 18081) was used with regulatory default options, as recommended in EPA's *Guideline on Air Quality Models* (EPA, 2017). The following supporting pre-processing programs for AERMOD were also used:

- BPIP-PRIME (Version 04274)
- AERMET (Version 18081)
- AERMAP (Version 11103)

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

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

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

Meteorological Data. Meteorological data were combined into AERMOD-ready surface and upper-air input files using EPA's approved meteorological data pre-processor for the AERMOD dispersion model, AERMET (Version 18081).

AERMET uses three steps to pre-process and combine the surface and upper-air sounding data to a format compatible with the AERMOD model. The first step extracts the data and performs a brief quality assurance check of the data. The second step merges the meteorological data sets. The third step creates an AERMOD compatible format while also incorporating surface characteristics surrounding the collection or application site. The output from the AERMET model consists of two separate files: the surface conditions file and a vertical profile data set. AERMOD utilizes these two files in the dispersion modeling algorithm to predict pollutant concentrations resulting from a source's emissions.

National Weather Service's hourly integrated surface database data for the San Jose International Airport surface station (WBAN: 23293) were used from 2013 through 2017. The San Jose International Airport surface station is located approximately 4.5 km southeast from the site. 1-minute Automated Surface Observing System data from the San Jose International Airport surface station were supplemented into the AERMET data set; the data were pre-processed using the AERMINUTE pre-processor (Version 15272). The concurrent daily upper-air sounding data from the Oakland International Airport station (WBAN: 23230) were included.

Additionally, the noon-time albedo, daytime Bowen ratio, and surface roughness lengths were considered when conducting the Stage 3 AERMET processing. Together, these comprise the surface characteristics

used by AERMET to calculate the boundary layer parameters. Surface characteristics can vary by month and sector around the data collection site. The mid-day albedo is the fraction of total incident solar radiation reflected by the surface back to space without absorption. The daytime Bowen ratio is an indicator of surface moisture, which is the ratio of the sensible heat flux to the latent heat flux. The Bowen ratio is used to determine the planetary boundary layer parameters for convective conditions. Surface roughness length is related to the height of obstacles to the wind flow and is the height at which the mean horizontal wind speed is zero.

The EPA has developed a computer program called AERSURFACE (Version 13016) to aid in obtaining realistic and reproducible surface characteristic values for the albedo, Bowen ratio, and surface roughness length for input to AERMET. The program uses publicly available national land cover data sets and look-up tables of surface characteristics that vary by land cover type and season. Land cover data from the U.S. Geological Survey's NLCD92 database were used for the modeling, as recommended by the *AERSURFACE User's Guide* (EPA, 2013). Since surface conditions can vary by season, the Monthly option was chosen in AERSURFACE. For the albedo and Bowen ratio characterization, a 10-km radius was used. Because surface roughness can vary by direction or sector, a 1-km radius circle split into 12 equal sectors was used for surface roughness determination. The surface characterization values from AERSURFACE were used in Stage 3 of the AERMET processing based on the surface moisture classification of the respective meteorological data year.

To characterize the surface moisture for each meteorological year being processed, as required by AERSURFACE, total precipitation for each year processed was determined from the National Weather Service data and compared to the 30th percentile and 70th percentile of the 30-year precipitation record obtained from the Western Regional Climate Center for the San Jose Airport California Cooperative station (ID: 047821).

The Stage 3 AERMET processing included the default low wind option method (ADJ_U*).

Table 3.3-7 presents a summary of the percent completeness of wind speed and wind direction data. A cumulative wind rose for data from 2013 to 2017 from the AERMET processed surface files for the San Jose International Airport is shown in Appendix 3.3-C, Figure 3. The 5-year mean wind speed is 3.20 meters per second (m/s).

Table 3.3-7 Meteorological Data Completeness

Parameter	2013	2014	2015	2016	2017
Valid Wind Speed Observations	8,749	8,755	8,750	8,777	8,755
Possible Observations	8,760	8,760	8,760	8,784	8,760
Percent Complete (%)	99.9	99.9	99.9	99.9	99.9
Valid Wind Direction Observations	8,527	8,553	8,511	8,513	8,446
Possible Observations	8,760	8,760	8,760	8,784	8,760
Percent Complete (%)	97.3	97.6	97.2	96.9	96.4

Building Downwash. Building influences on stacks are calculated by incorporating the updated EPA Building Profile Input Program for use with the Plume Rise Model Enhancement algorithm. In addition to the buildings and structures associated with the project, five buildings surrounding the facility fence line were included in the model due to their height and proximity to the site. Appendix 3.3-C, Figure 1 shows the facility layout and these five buildings on the exterior of the property boundary. The stack heights used in the dispersion modeling were the actual stack height since the proposed stack heights are less than good engineering practice stack height.

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

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

AERMAP (Version 11103) was used to process terrain elevation data to obtain the elevation for all receptors using National Elevation Dataset files prepared by the U.S. Geological Survey. AERMAP first determined the base elevation at each receptor. AERMAP created hill height scale by searching for the terrain height and location that has the greatest influence on dispersion for each individual source and receptor. Both the base elevation and hill height scale data were produced for each receptor by AERMAP as a file or files that were directly accessed by AERMOD. All receptor locations were expressed in the Universal Transverse Mercator North American Datum 1983, Zone 10 coordinate system. The modeled receptor grid is shown in Appendix 3.3-C, Figure 2.

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. Examples of receptors include residences, schools and school yards, parks and playgrounds, daycare centers, nursing homes, and medical facilities. Residences could include houses, apartments, and senior living complexes. Medical facilities could include hospitals, convalescent homes, and health clinics. Playgrounds could be play areas associated with parks or community centers (BAAQMD, 2017c). The potential sensitive receptor locations evaluated in the HRA for LDC include (BAAQMD, 2012):

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

A sensitive receptor search was conducted within the 2-km zone of influence. It was determined that the sensitive receptors include primarily schools, elementary through college-level, and a hospital. The area directly north and east of the project site consists of various businesses. The nearest residential neighborhoods are located approximately 1 mile north and east of the site.

The sensitive receptors were used as discrete receptor locations in the model for purposes of conducting the HRA, as described in Section 3.3.3.3.

Refined Analysis for 1-Hour NO_2. For comparison to the NAAQS and CAAQS, NO_2 modeling followed a Tier 2 approach described in Section 4.2.3.4 of EPA's *Guideline on Air Quality Models* (EPA, 2017). The Tier 2 analysis assumes an ambient equilibrium between NO and NO_2 using the Ambient Ratio Method 2 (ARM2) approach, in which the conversion of NO to NO_2 is predicted using hourly ambient NO_X monitoring data. For this modeling, the ARM2 option was used with an in-stack NO_2/NO_X ratio (ISR) of 0.1 and a maximum out-of-stack NO_2/NO_X ratio of 0.9. The NO_2 ISR Database (EPA, 2016), developed using EPA-verified testing, indicates that diesel internal combustion engines typically have an ISR of 0.03. The model conservatively used 0.1 as an ISR for use in ARM2.

The model also included seasonal hour (SEASHR) background data for NO_2. This background profile was developed conservatively using the high-first-high seasonal background concentrations observed from the EPA Air Quality System station in San Jose, California (Site ID 060850005). A copy of the SEASHR profile and its development is included in Appendix 3.3-C.

3.3.3.2.2 Modeling Source Data

Source Characterization. All 56 standby generators have been modeled as point sources, based on the assumptions specified in Table 3.3-8.

Table 3.3-8 Standby Generator Operating Assumptions

Averaging Period	Operating Assumption
1-hour	Assumes a single generator could operate at 100 percent load at a time for maintenance and testing purposes.
3-hour, 8-hour, and 24-hour	Assumes all generators could each operate at 100 percent load for a maximum of 3 hours per day for testing and maintenance purposes.
Annual	Assumes all generators could each operate at 100 percent load for a maximum of 50 hours per year.

Modeled source parameters for the diesel generators were determined from manufacturer and performance data. Table 3.3-9 includes the modeled source parameters for each generator. The base elevation for each source was estimated based on a central elevation within the facility fence line. Consistent with the project design, the modeling assumes the entire surface within the property boundary would be graded to this elevation; therefore, all buildings and sources would have this same elevation. A table showing individual source parameters for all 56 generators is included in Appendix 3.3-C.

Table 3.3-9 Standby Generator Source Parameters

Source	Base Elevation (m)	Stack Height (m)	Exhaust Temperature (K)	Exit Velocity (m/s)	Stack Diameter (m)
Generator (56)	9	12.19	750.87	121.75	0.36

K = degrees Kelvin

Modeled criteria pollutant emission rates were developed as described in Section 3.3.3.1. The 1-hour modeled emission rates demonstrate the maximum amount of pollutant released in any given hour. Modeled emission rates for the 3-hour, 8-hour, and 24-hour averaging periods were calculated assuming each generator would only operate for 3 hours in a given 24-hour period, consistent with the possibility of uninterrupted power supply testing occurring on any day of the year. Annual modeled emission rates assume each generator could operate a maximum of 50 hours per year. Table 3.3-10 includes the modeled emission rates for each criteria pollutant from a single generator. Emission rates for all 56 generators are presented in Appendix 3.3-C.

Table 3.3-10 Modeled Criteria Pollutant Emission Rates for a Single Standby Generator

Pollutant	Averaging Period	Emission Rate (lb/hr)
NO_2	1-hour[a]	70.99
	Annual[b]	0.41
CO	1-hour[a]	12.77
	8-hour[c]	4.79
$PM_{2.5}$	24-hour[c]	9.14E-03
	Annual[b]	4.17E-04
PM_{10}	24-hour[c]	9.14E-03
	Annual[b]	4.17E-04
SO_2	1-hour[a]	4.53E-02
	3-hour[c]	4.53E-02
	24-hour[c]	5.66E-03
	Annual[b]	2.59E-04

[a] Maximum emission rate in any given hour.

[b] Averaged over a year (8,760 hours).

[c] Calculated to demonstrate that each generator will only operate a maximum of 3 hours within a 24-hour period.

3.3.3.2.3 Dispersion Modeling Results

Results from the dispersion modeling analysis were compared to the NAAQS, CAAQS, and Significant Impact Levels (SILs)[8], as appropriate. As summarized in Table 3.3-11, the impacts of PM_{10} (24-hour), $PM_{2.5}$ (24-hour and annual), CO (1-hour and 8-hour), SO_2 (1-hour, 3-hour, 24-hour, and annual), and NO_2 (1-hour and annual) are below their respective NAAQS.

Table 3.3-11 Comparison of Modeled Results to the National Ambient Air Quality Standards

Pollutant	Averaging Time	Maximum Modeled Concentration (µg/m³)	Background Concentration (µg/m³)[a]	Total Predicted Concentration (µg/m³)	NAAQS (µg/m³)
PM_{10}	24-hour[b]	1.23	69.00	70.23	150
$PM_{2.5}$	24-hour[c]	1.10	31.00	32.10	35
	Annual[d]	0.02	10.6	10.62	12
CO	1-hour[e]	5,791.14	2,748.47	8,539.61	40,000
	8-hour[e]	973.01	2,061.35	3,034.36	10,000
SO_2	1-hour[f]	20.54	6.11	26.65	196
	3-hour[g]	12.64	9.42	22.06	1,300
	24-hour[g]	0.82	2.88	3.70	365
	Annual[g]	0.02	0.79	0.81	80
NO_2	Annual[g]	25.24	24.10	49.34	100
	1-hour[h]	101.16	N/A	101.16	188

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

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

[c] The total predicted concentration for the 24-hour $PM_{2.5}$ standard is the 5-year average, high-8th-high modeled concentration combined with the 3-year average background concentration.

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

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

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

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

[h] The 1-hour NO_2 maximum modeled concentration accounts for a seasonal hour (SEASHR) background and ARM2 chemistry of an ISR of 0.1 and an out-of-stack ratio of 0.9, which were included within the model. This concentration is also the worst-case single generator concentration because only a single generator will operate at a given time.

N/A = Not applicable because the background is included in the model

As summarized in Table 3.3-12, impacts of $PM_{2.5}$ (24-hour and annual), CO (1-hour and 8-hour), SO_2 (1-hour, 3-hour, 24-hour, and annual), and NO_2 (1-hour and annual) were also below the CAAQS. Because the PM_{10} background concentrations are already above the CAAQS, the project's modeled PM_{10} (annual and 24-hour) concentrations were compared to the SILs, instead of the CAAQS, to demonstrate that the project would not cause or contribute to an exceedance. The SIL modeling results are presented in Table 3.3-13.

[8] The SIL determines whether potential ambient impacts of the emitted pollutant would cause or significantly contribute to an exceedance of a standard (that is, impacts below the SIL indicate the project would not cause or significantly contribute to an exceedance).

Table 3.3-12 Comparison of Modeled Results to the California Ambient Air Quality Standards

Pollutant	Averaging Time	Maximum Modeled Concentration ($\mu g/m^3$)[a]	Background Concentration ($\mu g/m^3$)[b]	Total Predicted Concentration ($\mu g/m^3$)	CAAQS ($\mu g/m^3$)
$PM_{2.5}$	Annual	0.026	10.60	10.63	12
CO	1-hour	6,370.87	2,748.47	9,119.34	23,000
	8-hour	1,043.32	2,061.35	3,104.67	10,000
SO_2	1-hour	22.60	9.42	32.02	655
	24-hour	0.82	2.88	3.70	105
NO_2[c]	Annual	25.24	24.10	49.34	57
	1-hour	334.03	N/A	334.03	339

[a] The maximum modeled concentration for each pollutant and averaging period are the high-1st-high concentrations for comparison to the CAAQS.
[b] Background concentrations were included from Table 3.3-1c to estimate the total predicted concentrations.
[c] The 1-hour NO_2 maximum modeled concentration accounts for a seasonal hour (SEASHR) background and ARM2 chemistry of an ISR of 0.1 and an out-of-stack ratio of 0.9, which were included within the model. This concentration is also the worst-case single generator concentration because only a single generator will operate at a given time for testing and maintenance.

N/A = Not applicable because the background is included in the model

Table 3.3-13 Comparison of Modeled PM_{10} Results to the Significant Impact Levels

Pollutant	Averaging Time	Maximum Modeled Concentration ($\mu g/m^3$)[a]	SIL ($\mu g/m^3$)
PM_{10}	24-hour	1.33	5
	Annual	0.03	1

[a] Modeled concentration is the maximum high-first-high value of the 5 individual modeled years (2013-2017).

3.3.3.3 Health Risk Assessment

An HRA requires both dispersion modeling of the facility, as described in Section 3.3.3.2, and characterization of the resultant risk using approved risk assessment methodology. The Hotspot and Reporting Program Version 2 (HARP2), or OEHHA methodology, was used to calculate risk. This section describes the use of HARP2 or OEHHA methodology to characterize risk from construction and operation of the facility. The results are reported for comparison to the appropriate thresholds.

3.3.3.3.1 HRA Approach and Risk Characterization

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

The HRA included potential health impacts from TAC exposure on receptors through the inhalation, dermal absorption, soil ingestion, and mother's milk pathways, as required by OEHHA Guidance. The inhalation cancer potency, oral slope factor values, and RELs used to characterize health risks associated with the modeled impacts were obtained from the *Consolidated Table of OEHHA/ARB Approved Risk Assessment Health Values* (OEHHA & CARB, 2018). The pathways for surface drinking water, still-water fishing, and subsistence farming are not applicable per regulatory guidance and thus were not included in the assessment. Residential exposure through the consumption of homegrown

produce, including pork, chicken, and eggs, were included. OEHHA default exposures were assumed for the mother's milk, homegrown produce, and soil exposure pathways.

Cancer. Cancer risk was evaluated based on the annual TAC ground-level concentrations, as calculated from AERMOD and the 2015 OEHHA assumptions for inhalation cancer potency, oral slope factor, frequency, and breathing rate of exposed persons. Residential cancer risks were estimated using the conservative assumption of 30-year continuous exposure duration, as required by the 2015 OEHHA Guidance. Worker exposure was based on a 25-year, 8-hours-per-day exposure for an adult (OEHHA, 2015).

Cancer risk results are expressed on a number-per-million basis. The cancer risk for the Maximally Exposed Individual Resident (MEIR), Maximally Exposed Individual Worker (MEIW), or Maximally Exposed Sensitive Receptor (MESR) was compared to the carcinogenic threshold level. These results are presented below.

An HRA was also conducted based on the project's construction emissions. The construction duration was estimated to last 14 months; therefore, a 2-year exposure duration, which represents a conservative approach (that is, modeled results tend to be over-predictive), was used to calculate cancer risk due to construction emissions.

Non-cancer Chronic Exposure. Chronic toxicity is defined as adverse health effects from prolonged chemical exposure caused by chemicals accumulating in the body. To assess chronic non-cancer exposures from project construction and operation, annual TAC ground-level concentrations were compared with the RELs developed by OEHHA to obtain a chronic HI. The REL is a concentration in ambient air at, or below which, no adverse health effects are anticipated. Non-cancer chronic health risks were calculated as a hazard quotient, which is the calculated exposure of each contaminant divided by its REL. Hazard quotients for pollutants affecting the same target organ are summed with the resulting totals expressed as HIs for each organ system. The non-cancer chronic risk for the MEIR, MEIW, or MESR was compared to the non-cancer chronic threshold level. These results are presented below.

Non-cancer Acute Exposure. Acute toxicity is defined as adverse health effects caused by a brief chemical exposure of no more than 24 hours. To assess acute non-cancer exposures from project operation, 1-hour TAC ground-level concentrations were compared with the acute REL to obtain an acute HI. Similar to assessing chronic non-cancer health risks, acute health risks were calculated as a hazard quotient, which is the calculated exposure of each contaminant divided by its REL. Hazard quotients for pollutants affecting the same target organ were summed with the resulting totals expressed as HIs for each organ system. The non-cancer acute risk for the MEIR, MEIW, or MESR was compared to the non-cancer acute threshold level. These results are presented below.

TACs. TACs considered in evaluating the health impacts of the LDC are those included in BAAQMD Regulation 2, Rule 5. The only TAC evaluated in the construction HRA was DPM. The TACs evaluated in the operational HRA were DPM and speciated total organic gases (TOG) in diesel exhaust. The TACs from speciated TOG include:

- Acetaldehyde
- Acrolein
- Benzene
- Formaldehyde
- Naphthalene
- Propylene
- Toluene
- Total PAHs
- Xylene

The Total PAHs include Benz(a)anthracene, Benzo(a)pyrene, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Chrysene, Dibenz(a,h)anthracene, and Indeno(1,2,3-cd)pyrene. The cancer risk, chronic HI, and acute HI predicted by the HRA for the construction and operation of LDC were based on TAC emissions from the LDC. These emissions estimates were used to compare to BAAQMD thresholds and as inputs to the HRA.

3.3.3.3.2 Construction HRA

A screening HRA was conducted to evaluate the potential health risks due to construction of the LDC, as discussed below. DPM was the only TAC modeled as it was assumed to be equal to exhaust PM_{10} emissions from onsite construction equipment and vehicles.

Emissions. Because DPM is the only TAC expected to be emitted during construction, it was the only TAC to be included in the screening HRA. DPM emissions result from exhaust of onsite diesel-fueled construction equipment and vehicles. DPM emissions for the construction activities were derived from the construction emission estimates presented in Appendix 3.3-A, as follows:

- DPM was assumed to be best represented by PM_{10} emitted as a result of fuel combustion. Therefore, fugitive dust emissions were excluded, as they are not expected to include DPM.
- Offsite contributions resulting from material haul truck trips, worker commute trips, and vendor delivery trips were excluded, as they are not expected to significantly contribute to localized impacts of DPM.
- Onsite contributions from gasoline-fueled light-duty trucks were conservatively included, although they are not expected to emit DPM.
- PM_{10} emissions resulting from diesel-fueled construction equipment exhaust were estimated using emission factors representative of the statewide fleet mix, as available in CalEEMod (that is, specific engine tiers were not assumed).

For modeling, these emissions were averaged over the construction period (14 months) and spatially distributed within the construction area. These emission rates are presented in Table 3.3-14, with detailed calculations presented in Appendix 3.3-D.

Table 3.3-14 Modeled Diesel Particulate Matter Emission Rates for Project Construction

Emissions Category	DPM Exhaust Emissions		
	Total (lb/project)	Annualized (lb/year)[a]	Modeled Rate (g/s)
Total Construction Emissions	555	475	0.0068
Construction Emissions per Modeled Source[b]	9.56	8.20	0.0001

[a] Annualized emissions were calculated by averaging the total project emissions over a 14-month construction period.

[b] A total of 58 sources were modeled.

g/s = gram(s) per second

lb/project = pound(s) per project

lb/year = pound(s) per year

Methodology. The air dispersion of emitted DPM was modeled using AERMOD (Version 18081). The modeled output (maximum ground-level concentrations), along with equations from the *Air Toxics Hot Spots Program Guidance Manual for Preparation of Health Risk Assessments* (OEHHA, 2015), were used to estimate the cancer and chronic (non-cancer) health risks for residential and worker exposure to DPM emissions. Acute (non-cancer) health risks were not estimated because there is no acute inhalation REL for DPM, thus indicating that DPM is not known to result in acute health hazards (OEHHA, 2015; OEHHA & CARB, 2018). Details regarding the model selection, model options, meteorological data, and receptor grid spacing used to conduct this screening HRA are consistent with those described in Section

3.3.3.2. The modeled source parameters and health risk estimates, which are specific to the screening HRA, are described in more detail below.

Source Parameters. The construction exhaust emissions were modeled as a set of point sources spaced approximately 25 meters apart over the construction area with a horizontal stack release. The horizontal release type is an AERMOD beta option (that is, nonregulatory default option), which negates mechanical plume rise. This conservative approach was used because it is unknown whether the construction equipment will have vertically oriented exhaust stacks. Stack release parameters consisted of a stack release temperature of 533°K (500 degrees Fahrenheit), a stack diameter of 0.127 m (5 inches), and a release height of 4.6 m (15 feet) based on data for typical construction equipment. Modeling was also restricted to the hours of 8 a.m. to 6 p.m., which was assumed to coincide with the expected daily construction schedule. A detailed summary of the modeling inputs is presented in Appendix 3.3-D.

Health Risk Estimates. The screening HRA estimated the 2-year rolling cancer risks during a 30-year exposure duration (starting with exposure during the third trimester) for residential exposure and a 25-year exposure duration (from age 16 to 40) for worker exposure, aligned with the expected construction duration, at the MEIR, MEIW, and MESR. The excess cancer risks were estimated using the following:

- Equations 3.4.1.1 and 8.2.4A from the *Air Toxics Hot Spots Program Guidance Manual for Preparation of Health Risk Assessments* (OEHHA, 2015) for residential exposure
- Equations 5.4.1.2A, 5.4.1.2B, and 8.2.4B from the *Air Toxics Hot Spots Program Guidance Manual for Preparation of Health Risk Assessments* (OEHHA, 2015) for worker exposure
- The maximum annual ground-level concentrations used to estimate risk were determined through dispersion modeling with AERMOD
- The construction emission estimates modeled are presented in Table 3.3-14

Chronic risks were also estimated for the MEIR, MEIW, and MESR, based on the same emission rates and ground-level concentrations described above. To calculate chronic risk, as characterized by a health index, the maximum annual ground-level concentration was divided by the DPM REL of 5 µg/m^3 (OEHHA & CARB, 2018).

Results. The results of the screening HRA for construction activities are presented in Table 3.3-15 and show that the excess cancer risks and chronic HIs at the MEIR, MEIW, and MESR are less than the BAAQMD's significance thresholds of 10 in 1 million and 1, respectively. Therefore, predicted impacts associated with the finite construction activities are less than significant. It should be noted that these less-than-significant impacts are conservative given the conservative assumptions used in developing the DPM emission estimates and the DPM cancer potency safety factor inherent in OEHHA's calculations. Detailed calculations are provided in Appendix 3.3-D.

Table 3.3-15 Construction Health Risks at the Maximally Exposed Individual Receptors

Receptor Type	MEIR	MEIW	MESR	BAAQMD Threshold
Cancer Risk Impact (in 1 million)	0.58	0.38	1.26	10
Chronic Non-cancer HI	0.0004	0.05	0.0003	1

3.3.3.3.3 Operational HRA

A complete HRA was conducted to evaluate the potential health risks associated with airborne emissions from routine operation of the LDC. The HRA process requires four general steps to estimate health impacts: (1) identify and quantify project-generated emissions; (2) evaluate pollutant transport (air dispersion modeling) to estimate ground-level TAC concentrations at each receptor location; (3) assess

human exposure; and (4) use a risk characterization model to estimate the potential health risk at each receptor location. The methods used in this HRA are described in more detail below.

Emissions. TAC emissions associated with project operation consist of combustion byproducts produced by 56 standby generators, all of which are fired exclusively on diesel fuel. Chemicals to be evaluated were DPM and speciated TOG in diesel exhaust. DPM was the only TAC modeled in HARP2 with annual emission rates per Appendix D of the *Air Toxics Hot Spots Program Guidance Manual for Preparation of Health Risk Assessments* (OEHHA, 2015). DPM is used as a surrogate for the whole diesel exhaust. Because diesel exhaust has acute health risk associated with it that is not accounted for within DPM's health risk, the diesel exhaust is speciated for the short-term period. Emissions were calculated using the methodology described in Section 3.3.3.1 and are summarized in Table 3.3-5. These estimates conservatively assume that all 56 generators would operate at 100 percent load for 50 hours per year. Consistent with Appendix D of the *Air Toxics Hot Spots Program Guidance Manual for Preparation of Health Risk Assessments* (OEHHA, 2015), cancer and non-cancer chronic risks were modeled based on annual DPM emissions, and non-cancer acute risks were modeled based on hourly emissions of Acetaldehyde, Acrolein, Benzene, DPM, Formaldehyde, Naphthalene, Propylene, Toluene, Total PAHs, and Xylenes. Detailed emission calculations are provided in Appendix 3.3-B.

Table 3.3-16 provides modeled hourly and annual TAC emission rates for each individual generator. These pollutants were identified as TACs per BAAQMD Regulation 2, Rule 5, Table 2-5-1. The speciated PAHs were modeled as Total PAH in HARP2, with Naphthalene separately included. DPM was the only TAC modeled in HARP2 with annual emission rates per Appendix D of the *Air Toxics Hot Spots Program Guidance Manual for Preparation of Health Risk Assessments* (OEHHA, 2015).

Table 3.3-16 Modeled Toxic Air Contaminant Emission Rates for a Single Standby Generator

Pollutant	Hourly Emissions (lb/hr)	Annual Emissions (lb/yr)
Acetaldehyde	7.45E-04	N/A
Acrolein	2.33E-04	N/A
Benzene	2.29E-02	N/A
DPM[a]	7.31E-02	3.66E+00
Formaldehyde	2.33E-03	N/A
Naphthalene	3.84E-03	N/A
Propylene	8.25E-02	N/A
Toluene	8.31E-03	N/A
Total PAH	6.27E-03	N/A
Xylenes	5.71E-03	N/A

Notes:

N/A = Not applicable because only DPM was modeled for the annual scenario, per OEHHA Guidance (OEHHA, 2015).

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

Methodology. The HRA was conducted in accordance with the following guidance:

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

The HRA modeling was conducted using the CARB's HARP2 Air Dispersion Modeling and Risk Assessment Tool (ADMRT). To facilitate calculation of annual TAC ground-level concentrations at each modeled receptor, the AERMOD air dispersion modeling output plot files were imported into HARP 2.

Risk Characterization. The results of the dispersion modeling analysis represent an intermediate product in the HRA process as the AERMOD output plot files were imported into HARP2, and HARP2 was subsequently used to determine cancer, chronic, and acute health risks. AERMOD (Version 18081) was used to predict ground-level concentrations of TAC emissions associated with LDC operation. The model selection, model options, source parameters, meteorological data, and receptor grid spacing are consistent with those described in Section 3.3.3.2 and not repeated here. A unit emission rate (1 g/s) was used to model each source, as outlined in the HARP2 ADMRT manual.[9] Cancer risks and chronic and acute non-cancer exposures were assessed as previously described.

Results. The results of the HRA for facilitywide LDC operation are presented in Table 3.3-17 and show that the incremental cancer risk and chronic and acute HI at each of the MEIR, MEIW, and MESR are less than the BAAQMD's significance thresholds of 10 in 1 million and 1, respectively. Additionally, as shown in Table 3.3-11, the project's incremental increase in annual average $PM_{2.5}$ concentration is 0.02 µg/m^3, which is below the BAAQMD's significance threshold of 0.3 µg/m^3. Therefore, predicted impacts associated with project operation are less than significant. Additional details are provided in Appendix 3.3-E.

Table 3.3-17 Facility Operation Health Risks at the Maximally Exposed Individual Receptors

Receptor Type	MEIR	MEIW	MESR	BAAQMD Threshold
Cancer Risk Impact (in 1 million)	1.34	1.21	1.19	10
Chronic Non-cancer HI	0.00036	0.0039	0.00032	1
Acute Non-cancer HI	0.673	0.673	0.197	1

In accordance with BAAQMD Regulation 2, Rule 5, maximum HRA results for operation of a single emission unit are presented in Table 3.3-18. As shown, standby generator operation does trigger the regulatory requirement for TBACT as the incremental cancer risk exceeds the threshold of 1 in 1 million. Nevertheless, as stated previously, the standby generators will be equipped with a Diesel Particulate Filter System, which is considered TBACT. Therefore, the project will comply with BAAQMD Regulation 2, Rule 5 and result in less-than-significant health risk impacts. Additional details are provided in Appendix 3.3-E.

Table 3.3-18 Per Unit Operation Health Risks at the Maximally Exposed Individual Receptors

Receptor Type	MEIR	MEIW	MESR	BAAQMD Threshold
Cancer Risk Impact (in 1 million)	0.023	0.067	0.023	1
Chronic Non-cancer HI	6.29E-06	2.14E-04	6.07E-06	0.20
Acute Non-cancer HI	0.032	0.032	0.004	--

-- = No threshold established for this risk period.

3.3.4 Environmental Impacts

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

Less Than Significant Impact. The LDC project site is within the BAAQMD's jurisdiction, which is the agency primarily responsible for assuring that the federal and state ambient air quality standards are met and maintained in the SFBAAB. The BAAQMD has permit authority over stationary sources, acts

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

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.

According to the 2017 BAAQMD CEQA guidelines, a project would be considered consistent with the 2017 Bay Area Clean Air Plan if the project would not result in significant and unavoidable air quality impacts after the application of all feasible mitigation (BAAQMD, 2017c). As shown in Tables 3.3-3 and 3.3-6, the project would not result in construction or operational emissions in excess of the BAAQMD significance thresholds, with the exception of NO_X from standby generator operation. As discussed in Section 3.3.3.1, the annual NO_X emissions from standby generator operation will be fully offset through the permitting process in accordance with BAAQMD Regulation 2, Rule 2. Therefore, the project would not conflict with or obstruct implementation of the 2017 Bay Area Clean Air Plan.

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

Less Than Significant Impact. A cumulative impacts analysis assesses the impacts that result from the project's incremental effect viewed over time, together with other closely related past, present, and reasonably foreseeable future projects whose impacts may compound or increase the incremental effect of the project.[10] Additionally, cumulative impacts are assessed in terms of conformance with the BAAQMD's air quality attainment or maintenance plans.

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

For a project that does not individually have significant operational air quality impacts, the determination of a significant cumulative air quality impact is based upon an evaluation of the consistency of the project with the local general plan and of the general plan with the most current Clean Air Plan (BAAQMD, 2017c). As stated previously, the project would not result in construction or operational emissions in excess of the BAAQMD significance thresholds identified in Table 3.3-2, with incorporation of all feasible mitigation measures. Thus, the project would not be expected to conflict with the 2017 Bay Area Clean Air Plan, and a cumulative impact analysis is not warranted. Furthermore, the air quality impact analysis presented in Section 3.3.3.2 demonstrates that operation of the project will not cause or contribute to an existing exceedance of the ambient air quality standards. Thus, the project would not be expected to result in a cumulatively considerable net increase of non-attainment criteria pollutants.

As previously noted, the BAAQMD's 2017 CEQA Guidelines establish numerical criteria for determining when a health risk increase is deemed cumulatively considerable, thus triggering the need for a quantitative cumulative impacts assessment. If a project does not exceed the identified significance thresholds, its health risks would not be cumulatively considerable, resulting in less-than-significant health risk impacts to existing regional conditions. The HRAs presented in Section 3.3.3.3 demonstrate that neither project construction nor operation would result in health risks that exceed the BAAQMD significance thresholds identified in Table 3.3-2. Because project health risks would be less than the BAAQMD's significance thresholds, the project would not contribute to potential adverse cumulative health risk impacts on sensitive receptors. Therefore, given the lack of

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

significant effects on sensitive populations, the project would not result in a cumulatively considerable contribution to health risks.

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

Less Than Significant Impact. The location of the LDC 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, where 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 HRAs presented in Section 3.3.3.3 included sensitive receptors within 2 km of the project site, which is much farther than the 1,000-foot zone of influence recommended by the BAAQMD. The criteria pollutant emissions associated with project construction and operation, with incorporation of all feasible mitigation, are below BAAQMD's significance criteria for determining significant air quality impacts, as shown in Tables 3.3-3 and 3.3-6. Therefore, construction and operational emissions would not expose any receptors, sensitive or not, to substantial criteria pollutant concentrations.

Sensitive receptor exposure to TACs was evaluated by conducting a screening HRA for construction and a complete HRA for operation. As described in Section 3.3.3.3, the HRAs for LDC were conducted consistent with the following guidance: *Guidance Manual for Preparation of Health Risk Assessments* (OEHHA, 2015); *BAAQMD Air Toxics NSR Program Health Risk Assessment (HRA) Guidelines* (BAAQMD, 2016); 2017 CEQA Guidelines (BAAQMD, 2017c); and *Recommended Methods for Screening and Modeling Local Risks and Hazards* (BAAQMD, 2012).

The predicted cancer risk, chronic HI, and acute HI for LDC construction and operation were based on the project's estimated TAC emissions, as presented in Tables 3.3-14 and 3.3-16, respectively. As noted previously, modeled sources of TACs include onsite construction equipment and vehicles during construction and diesel-powered standby generators during operation. Accordingly, the TACs evaluated in the HRA were DPM and speciated TOG in diesel exhaust, as applicable. DPM emissions were assumed to be equal to exhaust PM_{10} emissions from onsite construction equipment and vehicles, and exhaust PM_{10} emissions from operating standby diesel generators. The TACs from speciated TOG, only applicable to operation of the standby diesel generators, include Acetaldehyde, Acrolein, Benzene, DPM, Formaldehyde, Napthalene, Propylene, Toluene, Total PAH, and Xylenes.

Diesel exhaust is a complex mixture of thousands of gases and fine particles and contains over 40 substances listed by EPA as HAPs and by CARB as TACs. DPM is primarily composed of aggregates of spherical carbon particles coated with organic and inorganic substances. Diesel exhaust deserves particular attention mainly because of its ability to induce serious non-cancer effects and its status as a likely human carcinogen. Diesel exhaust is also characterized by CARB as "particulate matter from diesel-fueled engines." The impacts from human exposure would include both short- and long-term health effects. Short-term effects can include increased coughing, labored breathing, chest tightness, wheezing, and eye and nasal irritation. Effects from long-term exposure can include increased coughing, chronic bronchitis, reductions in lung function, and inflammation of the lung. Epidemiological studies strongly suggest a causal relationship between occupational diesel exhaust exposure and lung cancer. Diesel exhaust is listed by EPA as "likely to be carcinogenic to humans" (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 cancer and chronic hazards were based on the surrogate approach (that is, modeled DPM only), as recommended by OEHHA. In the absence of an acute toxicity value for diesel exhaust, speciated TOG were used as a conservative estimate for DPM emitted annually from the standby diesel generators.

Cancer and non-cancer health hazards at various receptors were estimated using EPA's AERMOD dispersion model and guidance from BAAQMD and OEHHA. The HRAs evaluated offsite receptors potentially exposed to project emissions from construction and operational activities. These exposed populations include residential, worker, and sensitive receptors. Both long-term health impacts (cancer risk and chronic HI) and short-term health impacts (acute HI) were evaluated for all locations, as applicable. The HRAs considered inhalation exposure only. Offsite resident receptors were assumed to be present at one location for a 30-year period, beginning with exposure in the third trimester of pregnancy. Offsite worker receptors were assumed to be present at one location for a 25-year period, beginning with exposure at the age of 16, for 8 hours per day and 250 days per year.

The HRA results presented in Tables 3.3-15 and 3.3-17 indicate that both construction and operational health risks would not exceed BAAQMD's significance thresholds. Therefore, construction and operation of the project would not expose any sensitive receptors to substantial TAC concentrations causing significant cancer or non-cancer health hazards.

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

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

Determining the significance of potential odor impacts involves a two-step process. First, it should be determined whether the project would result in an odor source and receptors being located within the distances indicated in Table 3.3-19. Table 3.3-19 also lists types of facilities known to emit objectionable odors. Second, if the project would result in an odor source and receptors being located closer than the screening level distances indicated in Table 3.3-19, a more detailed analysis should be conducted, as described in the BAAQMD's 2017 CEQA Guidelines (BAAQMD, 2017c).

The LDC will not be an odor source listed in Table 3.3-19, and this type of project is not known to cause any significant odor impacts. A further evaluation of this facility is not warranted by any local conditions or special circumstances. Therefore, the project would not create objectionable odors affecting a substantial number of people.

Potential odor sources during construction activities include diesel exhaust from heavy-duty equipment. 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 or heavy-duty delivery vehicles and the occasional 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.

Previously Identified Mitigation Measures: None.

New Proposed Mitigation Measures: None.

Table 3.3-19 Project Screening Trigger Levels for Potential Odor Sources

Type of Operation	Project Screening Distance
Wastewater Treatment Plant	2 miles
Wastewater Pumping Facilities	1 mile
Sanitary Landfill	2 miles
Transfer Station	1 mile
Composting Facility	1 mile
Petroleum Refinery	2 miles
Asphalt Batch Plant	2 miles
Chemical Manufacturing	2 miles
Fiberglass Manufacturing	1 mile
Painting/Coating Operations (for example, auto body shops)	1 mile
Rendering Plant	2 miles
Food Processing Facility	1 mile
Confined Animal Facility/Feed Lot/Dairy	1 mile
Green Waste and Recycling Operations	1 mile
Metal Smelting Plants	2 miles
Coffee Roaster	1 mile

Source: BAAQMD, 2017c.

3.3.5 References

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U.S. Environmental Protection Agency (EPA). 2003. "Diesel Engine Exhaust." February. Accessed February 20, 2019. https://cfpub.epa.gov/ncea/iris2/chemicalLanding.cfm?substance_nmbr=642.

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U.S. Environmental Protection Agency (EPA). 2019b. "Non-attainment Areas for Criteria Pollutants (Green Book)." Accessed February 20, 2019. https://www.epa.gov/green-book.

3.4 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 Wildlife or U.S. Fish and Wildlife Service?	☐	☐	☐	☒
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?	☐	☐	☐	☒
c) Have a substantial adverse effect on state or Federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	☐	☐	☐	☒
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	☐	☐	☒	☐
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	☐	☐	☐	☒
f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or State habitat conservation plan?	☐	☐	☐	☒

Environmental checklist established by CEQA Guidelines, Appendix G.

3.4.1 Setting

The project site lies within an urbanized industrial zone in the city of Santa Clara (City). The site is bounded by industrial and commercial development to the north, east, and west, and US-101 to the south. Previously existing buildings and improvements will be demolished, and the site will be graded level. A 30- to 45-foot wide band of mature ornamental landscaped vegetation planted on an earthen berm occupies the southern perimeter of the site. Dominant tree species in this area include Chinese tallow tree (*Triadica sebifera*), eucalyptus (*Eucalyptus* spp.), laurel (*Laurus nobilis*), Peruvian pepper (*Schinus mole*), and strawberry tree (*Arbutus* x 'Marina'). A nearly contiguous row of mature landscaping trees occupies perimeter of the site. Dominant tree species in these areas include Coast redwood (*Sequoia sempervirens*), Melaleuca (*Melaleuca quinquenervia*), and green ash (*Fraxinus pennsylvanica*).

There are no aquatic resources or other sensitive habitats on the project site. A small drainage ditch follows a portion of the US-101 northbound access ramp adjacent to the property. The nearest water course is San Tomas Aquino Creek, approximately 500 feet to west of the project site.

3.4.2 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 Wildlife or U.S. Fish and Wildlife Service?

No Impact. The project will not result in a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species. A California Natural Diversity Database (CNDDB) (CDFW, 2019) search was conducted for special-status species within a 2-mile radius of the project site. The database search returned historic occurrence of robust spineflower (*Chorizanthe robusta*), California tiger salamander (*Ambystoma californiense*), Swainson's Hawk (*Buteo swainsoni*), Tricolored Blackbird (*Agelaius tricolor*), and Central California Coast Distinct Population Segment Steelhead (*Oncorhynchus mykiss*) (Figure 3.4-1). The records for robust spineflower, California tiger salamander, and Swainson's Hawk are from the late 19th century and all are considered possibly extirpated (CDFW, 2019). The record for Tricolored Blackbird is from the mid-1990s in habitat characterized by stands of Russian thistle. The occurrence for Central California Coast Steelhead is within the Guadalupe River; steelhead use this portion of the river as a migratory corridor. Steelhead may have historically occurred in San Tomas Aquino Creek, but it is not currently believed to support use by this species (Leidy, 2007).

Despite historical occurrence of these special-status species in the vicinity of the site, it is unlikely these species, or other listed species, will occur on or immediately adjacent to the site, as indicated by the CNDDB search results. Steelhead are seasonally present in the Guadalupe River and potentially San Tomas Aquino Creek (Leidy, 2007). However, the project will not affect these waterways. Therefore, no impact to special-status species will occur.

b) Would the project have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?

No Impact. The project site is developed and there is no riparian habitat or sensitive natural communities present. The nearest sensitive habitat is the aquatic habitat along San Tomas Aquino Creek. The project site is separated from the creek by a parking lot and development of the site would not affect aquatic habitat within the creek. The construction of the electrical distribution line from Silicon Valley Power's electrical line along the west side of the San Tomas Aquino Creek will require three electrical poles, located outside of the creek, and no construction will occur within the creek bed, banks, or channel. Therefore, no impact will occur.

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

No Impact. There are no state or federally protected wetlands on the project site. A small drainage ditch adjacent to the project site along the onramp to US-101 is potential non-wetlands waters of the United States and state. The project will not impact this ditch. San Tomas Aquino Creek supports riverine non-wetland waters, but no wetlands are present in the portion of the creek near the project site. Regardless, the project will not affect aquatic habitat in the creek. Therefore, no impact will occur.

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

Less Than Significant Impact. The project is in an established urbanized area characterized by industrial uses. The site and surrounding area do not serve as important migratory wildlife corridors. Trees along the site perimeter do not appear to provide suitable maternity roost sites for bats.

tricolored blackbird - 913

steelhead - central California coast DPS - 44

robust spineflower - 19

California tiger salamander - 41

Swainson's hawk - 2570

LEGEND

- Laurelwood Data Center
- 2 Mile Radius from Project
- Electrical Supply Line
- Steelhead Critical Habitat

CNDDB Occurrences

- Animal (non-specific)
- Animal (circular)
- Multiple (circular)

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

N

0 3,500 7,000

Approximate scale in feet

Figure 3.4-1
California Natural Diversity Database Special Status Species within 2 Miles of the Project Area
Laurelwood Data Center
Santa Clara, California

JACOBS

\\BROOKSIDEFILES\GIS_SHARE\ENBG\00_PROJ\E\EDGECORE\GIS\MAPS\REPORT\FIG3_4-1_BIOLOGY_CNDDB_2MILES.MXD 2/15/2019 2:11:48 PM

Migratory birds and raptors, including species protected under Migratory Bird Treaty Act and California Fish and Game Code, may use the landscaped vegetation planted around the site perimeter for nesting. While species that choose to nest in this area are likely well-habituated to noise and human activity, any action that results in destruction of a nest or egg of any bird, fatality of a bird, or nest abandonment could constitute a potentially significant impact. Construction of the Laurelwood Data Center (LDC) is scheduled to commence during the fourth quarter of 2019 and biological resource avoidance measures are included in the project design. These measures include preconstruction/disturbance survey to identify and protect active nests and reporting tree removal to the City Community Development Department prior to removal. Therefore, impacts to nesting birds or eggs are not expected.

Implementation of the project's proposed design features to avoid impacts on protected birds will result in the project having a less-than-significant impact.

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 development of the LDC is consistent with the applicable local zoning of General Industrial. There are no resources on the site that are subject to local ordinances protecting biological resources. The City will ensure, through its design review process, that the LDC landscaping is consistent with the City's tree preservation ordinance.

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 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 Santa Clara Valley Habitat Plan permitting area and was not included in the broader habitat plan study area. Therefore, no impact would occur.

Previously Identified Mitigation Measures: None.

New Proposed Mitigation Measures: None.

3.4.3 References

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3.5 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 pursuant to Section 15064.5?	☐	☐	☒	☐
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to 15064.5?	☐	☐	☐	☒
c) Disturb any human remains, including those interred outside of dedicated cemeteries?	☐	☐	☒	☐

Environmental checklist established by CEQA Guidelines, Appendix G.

3.5.1 Setting

The city of Santa Clara (City) 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 (it was created by the uplifting mountains, as opposed to erosional forces [NPS, 2007; SFEI, 2010]).

An analysis of historic maps and field notes identifies the area of the project as having been agricultural zone prior to its development in the 1960s and 1970s (USGS, 1953, 1961, 1968, and 1973). The elevation of the project ranges between 27 and 30 feet above mean sea level.

The geologic map of Santa Clara County shows the area of the 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 site.

The project site is located north of downtown Santa Clara, at the intersection of US-101 and Montague Expressway in the city. Land use in the area is primarily industrial and commercial. A channelized portion of the San Tomas Aquino Creek is located approximately 500 feet to the west.

The project site has been developed since the late 1960s and the existing facilities are being demolished by the previous owner. The demolition is not included as part of the project, which is anticipated to begin construction in the Fourth Quarter of 2019, with operations beginning in Fourth Quarter of 2020.

A complete discussion of the prehistoric, ethnographic, and historical setting may be found in Appendix 3.5-A, *Cultural Resource Investigation in Support of the 2201 Laurelwood Road Project*.

3.5.2 Regulatory Setting

3.5.2.1 California Environmental Quality Act

Various laws apply to the evaluation and treatment of cultural resources. The California Environmental Quality Act (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 California Register of Historical Resources (CRHR). 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 guidelines define significant cultural resources under two regulatory definitions: historical resources and unique archaeological resources. A historical resource is defined as meeting one or more of the following, per California Code of Regulations (CCR), Title 14, Section [§] 15064.5[a]:

- A resource listed in, or determined to be eligible by the State Historical Resources Commission for listing in, the CRHR
- A resource listed in a local register of historical resources or identified as significant in a historical resource survey meeting the requirements of §5024.1(g) of the Public Resources Code (PRC)
- 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

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 (PRC, §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 (PRC, §5024.1):

- Associated with events that have made a significant contribution to the broad patterns of our history
- Associated with the lives of persons significant in our past
- 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
- 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 (CCR, Title 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 decide as to whether the resource is a historical resource as defined in PRC, §§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 (CCR, Title 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 (PRC, §21083.2[g]):

- Contains information needed to answer important scientific research questions and that there is a demonstrable public interest in that information.
- Has a special and particular quality such as being the oldest of its type or the best available example of its type.
- Is directly associated with a scientifically recognized important prehistoric or historic event or person.

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), the project's construction and operational impacts are analyzed to determine if a substantial adverse change in the significance of historical or unique archaeological resources will occur. The magnitude of an impact depends on:

- Historical resource(s) affected
- 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
- How much the impact will change historical resource integrity appraisals

CCR, Title 14, §15064.5(b), the 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."

3.5.2.2 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 (CCR, Title 14, §§4852a, 5064.5(a)(3); PRC, §§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 18th century until 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 endorses recording and evaluating resources over 45 years of age to accommodate a 5-year lag in the planning process.

3.5.2.3 City of Santa Clara General Plan

Section 5.6.3 of the City's General Plan (2010) 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 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, 2010).

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 (2010). In addition, the City has embedded in its Municipal Code a section on Historic Preservation (Title 18 Zoning, Chapter 18.106 Historic Preservation). The purpose of 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, economic, historical, architectural, engineering, archaeological, cultural, natural, or aesthetic heritage" (City of Santa Clara, 2018b). The chapter requires maintenance of a Historic Resource Inventory.

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

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.

3.5.2.4 Criteria for Local Significance

Multiple criteria have been established for local significance.

3.5.2.4.1 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.

3.5.2.4.2 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.

3.5.2.4.3 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.

3.5.2.4.4 Criteria for Archaeological Significance

For the purposes of CEQA, an important archaeological resource is one that meets at least one of the following criteria:

1) Associated with an event or person of recognized significance in California or American history, or recognized scientific importance in prehistory

2) Can provide information that 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 (for example, oldest, best example, largest, or last surviving example of its kind)

4) Is at least 100 years old and possesses substantial stratigraphic integrity

5) Involves important research questions that historical research has shown can be answered only with archaeological methods

3.5.3 Findings

3.5.3.1 Prehistoric and Ethnographic Resources

A pedestrian archaeological survey was conducted inclusive of the project site, linear facility routes, and extending out no less than 200 feet around project components and 50 feet to either side of the right-of-way of the project linear facility routes per California Energy Commission required survey methods. No prehistoric or ethnographic resources were identified. A record search was conducted by PaleoWest Archaeology at the Northwest Information Center at Sonoma State University in February 2019. The record search indicated that 135 cultural resources studies were conducted within 1 mile of the project area, and 54 of those studies include the project area. No studies that included subsurface archaeological testing were conducted within 0.25 mile of the project area. No previously identified cultural resources were found in the project area or the surrounding 1-mile buffer.

3.5.3.2 Built Environment Resources

A review of the City's Historic Properties listings (2018a, 2018b), the General Plan (2010a), *County of Santa Clara Historic Context Statement* (2012), County of Santa Clara *Heritage Resource Inventory* (2018), and other sources for historical information on built environment resources was conducted. In addition, the NRHP, CRHR, Historic American Building Survey, Historic American Engineering Record, Historic American Landscape Survey, and other repositories of documentation of historical resources were also reviewed. Three built environment resources were identified within approximately 1 mile of the

project, however, none of these resources were recommended as eligible for either the CRHR or the NRHP.

The records search at the Northwest Information Center at Sonoma State University performed in February 2019 identified three historical built environment resources within 1 mile of the project, including a structure at 4423 Cheeney Street, the PG&E Northern Receiving Station Scott #2, and the Santa Clara Public Works Building Maintenance Facility.

- The 4423 Cheeney Street property is located approximately 1 mile to the northeast of the project site. This property does not retain adequate integrity or embody the necessary distinction to be considered a historical resource under CEQA (Oosterhous, 2002).
- The PG&E Station is located approximately 1 mile to the north of the project area. The PG&E Northern Receiving Station did not appear to be individually eligible for the NRHP under Criteria A or C when recorded in 2002 (Supernowicz, 2013).
- The Santa Clara Public Works Building is located approximately 1 mile to the southeast. This building did not appear to be eligible for the NRHP under Criteria A or C (Supernowicz, 2015).

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. One property with structures 45 years or older was identified within the project site, and no properties over 45 years were identified within the one-parcel buffer. At the project site is a two-story Spanish Revival-style commercial building with Modern-style elements. This building is identified in Table 3.5-1 and discussed further in Section 3.5.3.3.

Table 3.5-1. Built Environment Resources 45 Years or Older Within the Project Site

Address	APN	Year Built	Description
2201 Laurelwood Road	104-39-023	1968	Two-story commercial building

3.5.3.3 2201 Laurelwood Road

2201 Laurelwood Road comprises two, two-story Spanish Revival-style buildings (Building 1 and Building 2) with Modern-style elements. Both buildings have a square plan with a tiled mansard roof supported by regularly spaced pillars. Both buildings feature decorative gravel textured panels that extend from the first to the second floor and form a series of arches divided by pillars on all elevations with the exception of the north elevation of Building 1. Glass entrance doors and fixed windows are recessed on the southeast and southwest corners of Building 1. The first and second floors on the south and west elevations of Building 1 feature regularly spaced fixed windows. The north elevation of Building 1 has had an addition removed as evidenced by exposed construction debris. The north elevation of Building 1 also features a two-story concrete enclosed stairwell. The northwest corner of the west elevation of Building 1 features glass entrance doors and fixed windows on the first floor and exposed doors on the second floor. Building 1 adjoins Building 2 on the southeast corner of the east elevation. Building 2 features glass entrance doors and fixed windows recessed on the first floor of the south and east elevations and regularly spaced fixed windows on the second floor of all elevations. The north elevation of Building 2 features a large opening cut into the wall. Several non-historic period tanks, pumping equipment, and an electrical building are located on the property as well as hardscape and landscaped vegetation. The building is currently undergoing demolition by the previous owner as a condition of the sale.

2201 Laurelwood Road does not appear to be a historical resource eligible for listing under the CRHR or City's significance criteria and thus does not qualify as a historical resource under CEQA. Therefore, the resource will not be impacted by the project.

3.5.3.4 Native American Consultation and Ethnography

A summary of outreach and consultation to California Native American tribes and an ethnographic context is provided in Section 3.18, Tribal Cultural Resources.

3.5.4 Environmental Impacts and Mitigation Measures

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

Less Than Significant Impact. No prehistoric or ethnographic resources were identified. The record search indicated that no fewer than 135 cultural resources studies were conducted within 1 mile of the project site, of which 54 included portions or all of the project site. No studies that included subsurface archaeological testing were conducted within 0.25 mile of the project site.

A total of three built resources were documented within 1 mile of the project area, the closest of which is approximately 1 mile away. None of these buildings are eligible for the CRHR or the NRHP.

Background research suggests that the project area is located approximately 1.5 miles south of the ethnographic village of *Ulístac* and 2.3 miles north of Rancheria Santa Clara (Brown, 1994).

The geologic map of Santa Clara County shows the area of the 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 site. Boring logs conducted for the project indicate that these alluvial deposits are present to at least 7.5 feet below the ground surface (TRC, 2019).

As a result of the extent of ground-disturbing activities as part of the 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 potential of encountering a buried resource in the project area, the project design includes the development and implementation of a Worker Environmental Awareness Program (WEAP) prior to ground-disturbing activities. The WEAP includes establishment of protocols to be implemented if inadvertent discoveries of buried cultural resources/human remains are encountered during construction. Implementation of these mitigation measures would reduce the impacts to unknown cultural resources to less than significant.

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

No Impact. Please see response to question (a).

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

Less Than Significant Impact. As discussed in question (a), as a result of the extent of ground-disturbing activities as part of the project, there is potential to impact buried cultural resources, including human remains. The protocols included in the WEAP will provides guidance should human remains be discovered during construction. Implementation of the WEAP will reduce impacts to unknown human remains to less than significant.

Previously Identified Mitigation Measures: None.

New Proposed Mitigation Measures: None.

3.5.5 References

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United States Geological Survey (USGS). 2006. Milpitas 7.5 Minute Topographic Quadrangle.

3.6 Energy

Would the project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources during project construction or operation?	☐	☐	☒	☐
b) Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?	☐	☐	☐	☒

Environmental checklist established by CEQA Guidelines, Appendix G.

3.6.1 Setting

The approximately 12-acre Laurelwood Data Center (LDC) project site is in an existing industrial area of the city of Santa Clara (City). The site is composed of a single parcel that was previously developed with industrial warehouse, manufacturing, and office facility uses, and a paved parking area. The project site has been developed since the late 1960s and the existing facilities are currently being demolished by the former owner as part of the sales agreement. The project site is bounded by Juliette Lane and other industrial and commercial properties to the east, US-101 to the south, a parking lot to the west, and other industrial and commercial properties to the north.

The LDC will include 56 diesel-fired standby generators that will be used to provide a backup power supply to support an uninterruptible power supply. As described in Section 2.0, Project Description, each of the generators would have a continuous steady state output capacity of 3.0 megawatts. The backup generators will serve the LDC only during times with electric service from Silicon Valley Power (SVP) is interrupted. The backup generators will be electrically isolated from SVP electrical transmission grid with no means to deliver electricity offsite.

3.6.1.1 Applicable Regulations, Plans, Codes and Policies

3.6.1.1.1 California Senate Bill 350 (SB 350), Clean Energy and Pollution Reduction Act of 2015

Establishes new clean energy, clean air, and greenhouse gas reduction goals, among other energy and climate objectives, by 2030. The project is consistent with and will comply with the requirements of SB 350, as ensured by the City's design review process.

3.6.1.1.2 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 project will comply with the Green Building Code, as ensured by the City's design review process.

3.6.1.1.3 City of Santa Clara General Plan Land Use Policies

Goals and policies to guide land use development within the City are established by the Santa Clara General Plan (2010). Applicable Santa Clara General Plan policies regarding energy are presented in Section 3.11, Land Use and Planning, and summarized in Table 3.6-1, along with a discussion of project consistency.

Table 3.6-1. Project Consistency with Santa Clara General Plan (2010) Land Use Policies

Land Use Policy	Project Consistency
Energy	
5.10.3-P1: Promote the use of renewable energy resources, conservation, and recycling programs.	Consistent. The project would use 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 buildings will limit potable water consumption. Furthermore, the project would use 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.	

The project will comply with the City's General Plan and zoning ordinance, as ensured by the City's design review process.

3.6.2 Environmental Impacts and Mitigation Measures

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

Less than Significant. Construction of the project will require the use of nonrenewable energy resources, primarily fossil fuels (oil, gasoline, and diesel), for construction equipment. It is anticipated that these nonrenewable energy resources will be used efficiently during construction activites, and therefore the consumption of these resources would not be unnecessary, inefficient, or a wasteful use.

During operation of the project, the LDC will use both nonrenewable energy resources and renewable energy resources in SVP's portfolio of resources. The standby generators will use nonrenewable resources (diesel and lubricating oils). However, the use of the standby generators will be limited to times when there is an interruption of SVP's electric service. Use of the standby generators will be further limited to approximately 15 hours per year for maintenance testing. Under emergency conditions, defined as the loss of electrical power to the data center buildings, the generators will use nonrenewable resources for limited periods of time and for short durations necessary to maintain data center operations. Therefore, nonrenewable resource use will not be unneccessary, inefficient, or wasteful.

The LDC will receive electricity from SVP to support customer electrical uses. As of December 31, 2017, the SVP power mix was composed of approximately 38 percent eligible renewable resources, 34 percent large hydroelectric, and 28 percent nonrenewable sources (SVP, 2019). In addition, SVP's 2018 Integrated Resource Plan identified that it expects to exceed the 50 percent eligible renewable resources threshold requirements by 2030 (SVP, 2018). As SVP procures more renewable energy for its portfolio, less nonrenewable energy sources will be needed and less nonrenewable power will be provided to the LDC. While the project is anticipated to have higher electricty needs than the previous facility at the site, it is not anticipated to use nonrenewable energy sources in an unnecceary, inefficient, or wasteful manner, and will have a less than significant impact on energy resources.

In addition to electricity use for operations, the LDC will also be designed to meet California Energy Code and California Building Code requiring energy efficient design. Through these design

requirements, the consumption of resources would not be inefficient or a wasteful use and would have a less than significant impact.

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

No Impact. As previously described, the LDC will comply with the California Energy Code and the California Building Code. Further the LDC will received electricity from a utility, SVP, that is on track to meet the requirements of SB 350, which has set energy eficiency and renewable electricity targets to increase California's electricity purchases from 33 percent by 2020 to 50 percent by 2030. Through energy efficient design and increased renewable electricity use, it the project will not conflict with nor obstruct state or local plans for renewable energy or energy efficiency, and therefore will have no impact.

Previously Identified Mitigation Measures: None.

New Proposed Mitigation Measures: None.

3.6.3 References

City of Santa Clara. 2010. *City of Santa Clara 2010–2035 General Plan*. Accessed January 31, 2019. http://santaclaraca.gov/government/departments/community-development/planning-division/general-plan.

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3.7 Geology and Soils

Would the project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving	☐	☐	☒	☐
i. Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.	☐	☐	☒	☐
ii. Strong seismic ground shaking?	☐	☐	☒	☐
iii. Seismic related ground failure, including liquefaction?	☐	☐	☒	☐
iv. Landslides?	☐	☐	☒	☐
b) Result in substantial soil erosion or the loss of topsoil?	☐	☐	☒	☐
c) Be located on geologic units or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse?	☐	☐	☒	☐
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property?	☐	☐	☒	☐
e) Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?	☐	☐	☐	☒
f) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	☐	☐	☒	☐

Environmental checklist established by CEQA Guidelines, Appendix G.

3.7.1 Setting

3.7.1.1 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 (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 3.7-1). 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. Based on borings conducted at the project site as part of geotechnical investigations in 2018 and 2019, the site is underlain predominately by alluvium interbedded with layers of medium stiff to hard clay, silty clay, clayey silt, sandy silt, and medium dense to very dense sand. The sand layers across the site appear to be discontinuous and variable in thickness ranging up to approximately 7.5 feet (TRC, 2018). 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 (Figure 3.7-2).

The near-surface material across the project site has been observed to be highly expansive (TRC, 2018; Cornerstone, 2019). Expansive soil can undergo volume changes with changes in moisture content. Specifically, when wetted during the rainy season expansive soil tends to swell, and when dried during the summer months the material shrinks. However, expansive soil can be mitigated through removal or mixing with non-expansive soil.

3.7.1.2 Groundwater

Based on the depth of historically high groundwater map prepared by the California Geological Survey for the Milpitas Quadrangle (DOC, 2001), the depth of historically groundwater levels in the site vicinity is between the depths of 5 to 10 feet below the existing ground surface. Fluctuations in the level of the groundwater may occur due to variations in rainfall, underground drainage patterns, and other factors not evident at the time measurements were made. According to recent pore-pressure dissipation tests conducted at the project site, groundwater was encountered between depths of 5.5 to 9 feet below grade (TRC, 2018; Cornerstone, 2019).

3.7.1.3 Seismicity and Seismic Hazards

The significant earthquakes that occur in the Bay Area are generally associated with crustal movement along well-defined active fault zones of the San Andreas Fault system, which regionally trend in a northwesterly direction. Three of the 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 (DOC, 2015). The Laurelwood Data Center is not located within a currently designated Alquist-Priolo Earthquake Fault Zone (known formerly as a Special Studies Zone). No known surface expression of active faults is believed to cross the site (TRC, 2018; Cornerstone, 2019). Figure 3.7-3 identifies the regional earthquake faults in the project vicinity. However, structural design of facilities in California are required to incorporate design features to ensure public safety if a seismic event generates sufficient ground motion to impact the structural integrity of the facility in accordance with California Building Code. The geotechnical investigation utilized a design-level peak ground acceleration $(PGA)_m$ of 0.50g for analysis.

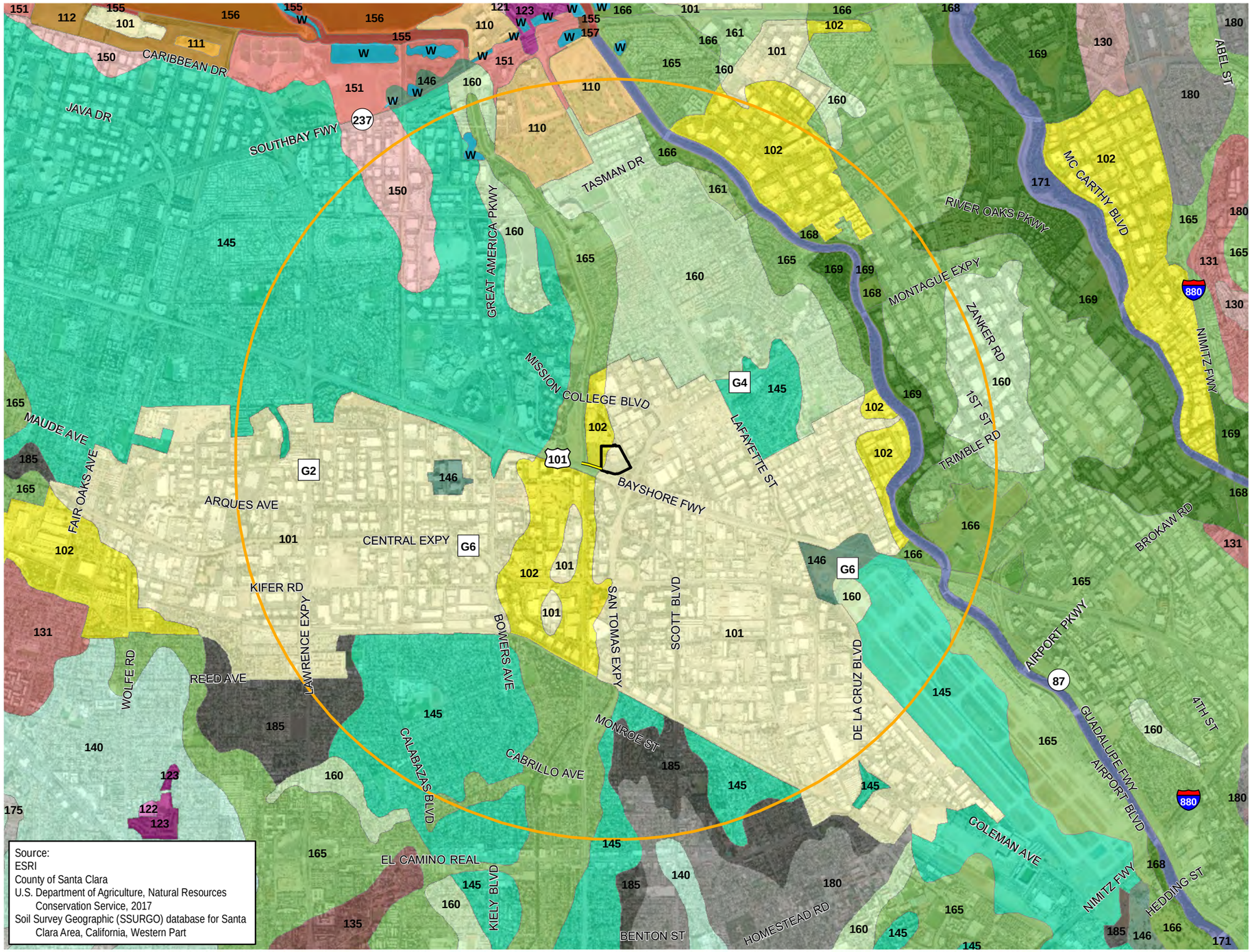
3.7.1.4 Liquefaction

During strong ground shaking, loose, saturated, cohesionless soils can experience a temporary loss of shear strength and act as a fluid. This phenomenon is known as liquefaction. Liquefaction depends on the depth to water, grain size distribution, relative soil density, degree of saturation, and intensity and duration of the earthquake. The potential hazard associated with liquefaction is seismically induced settlement.

The project site is within a State- and County-designated Liquefaction Hazard Zone (Cornerstone, 2019). To evaluate the potential impact from liquefaction, the geotechnical investigation determined that several layers could potentially experience liquefaction triggering with settlements on the order of 1.33 inches (Cornerstone, 2019).

3.7.1.5 Lateral Spreading

Lateral spreading typically occurs as a form of horizontal displacement of relatively flat-lying alluvial material toward an open or "free" face such as an open body of water, channel, or excavation. In soils, this movement is generally due to failure along a weak plane and may often be associated with liquefaction. As cracks develop within the weakened material, blocks of soil displace laterally towards the open face. Cracking and lateral movement may gradually propagate away from the face as blocks continue to break free. Generally, failure in this mode is analytically unpredictable because it is difficult to evaluate where the first tension crack will occur.



Source:
ESRI
County of Santa Clara
U.S. Department of Agriculture, Natural Resources Conservation Service, 2017
Soil Survey Geographic (SSURGO) database for Santa Clara Area, California, Western Part

LEGEND

- Laurelwood Data Center
- 2 Mile Radius from Project
- Electrical Supply Line

SOIL TYPE

- 101: Urban land, 0 to 2 percent slopes, basins
- 102: Urban land, 0 to 2 percent slopes, alluvial fans
- 110: Xerorthents, trash substratum, 0 to 2 percent slopes
- 111: Xerorthents, trash substratum, 9 to 15 percent slopes
- 112: Xerorthents, trash substratum 15 to 30 percent slopes
- 121: Aquic Xerorthents, bay mud substratum, 2 to 5 percent slopes
- 122: Xerorthents, anthropogenic fill, 0 to 2 percent slopes
- 123: Urban Land-Xerorthents, anthropogenic fill complex, 0 to 2 percent slopes
- 130: Urban land-Still complex, 0 to 2 percent slopes
- 131: Urban land-Elpaloalto complex, 0 to 2 percent slopes
- 135: Urban land-Stevenscreek complex, 0 to 2 percent slopes
- 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
- 150: Urbanland-Embarcadero complex, 0 to 2 percent slopes, drained
- 151: Embarcadero silty clay loam, drained, 0 to 2 percent slopes
- 155: Novato clay, 0 to 1 percent slopes, tidally flooded
- 156: Novato silty clay loam, excessive salinity, 0 to 1 percent slopes, protected
- 157: Novato clay, 0 to 1 percent slopes, protected
- 160: Urbanland-Clear Lake complex, 0 to 2 percent slopes
- 161: Clear Lake silty clay, 0 to 2 percent slopes, drained
- 165: Urbanland-Campbell complex, 0 to 2 percent slopes, protected
- 166: Campbell silt loam, 0 to 2 percent slopes, protected
- 168: Elder fine sandy loam, protected, 0 to 2 percent slopes
- 169: Urbanland-Elder complex, 0 to 2 percent slopes, protected
- 171: Elder fine sandy loam, 0 to 2 percent slopes, rarely flooded
- 175: Urbanland-Botella complex, 0 to 2 percent slopes
- 180: Urbanland-Newpark complex, 0 to 2 percent slopes
- 185: Urban Land - Bayshore complex, 0 to 2 percent slopes, drained
- W: Water

N

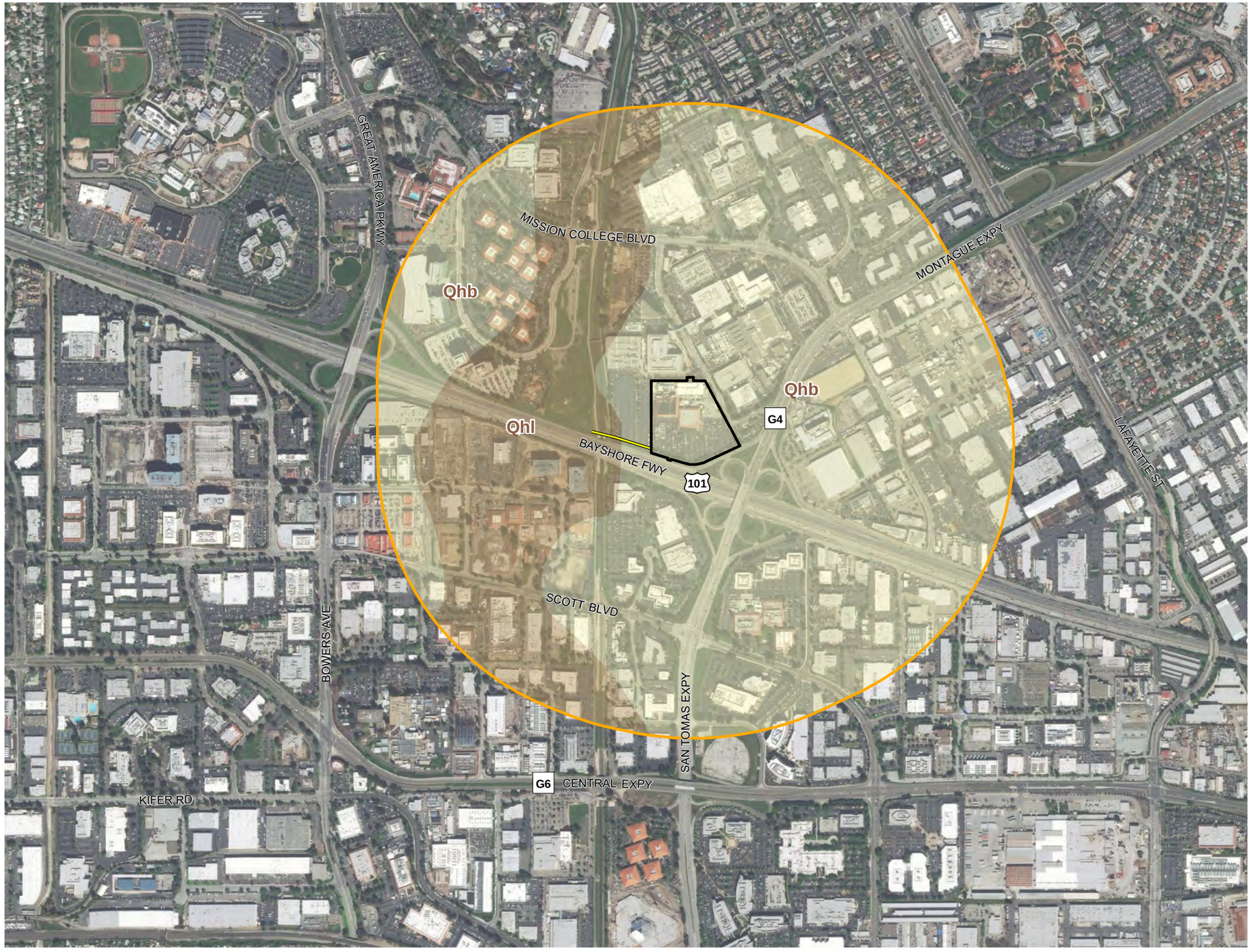
0 3,000 6,000

Approximate scale in feet

Figure 3.7-1
Soil Types within Project Area
Laurelwood Data Center
Santa Clara, California

JACOBS

\\BROOKSIDEFILES\GIS_SHARE\ENBG\00_PROJ\E\EDGECORE\GIS\MAPS\REPORT\FIG3_07-1GEOLOGY_SOIL_2MILE.MXD 2/15/2019 2:20:41 PM



LEGEND

- Laurelwood Data Center
- 1/2 Mile Radius from Project
- Electrical Supply Line
- Qhb: Floodbasin Deposits (Holocene)
- Qhl: Natural Levee Deposits (Holocene)

Source:
City of Santa Clara
Helley and Wesling, 1989

N

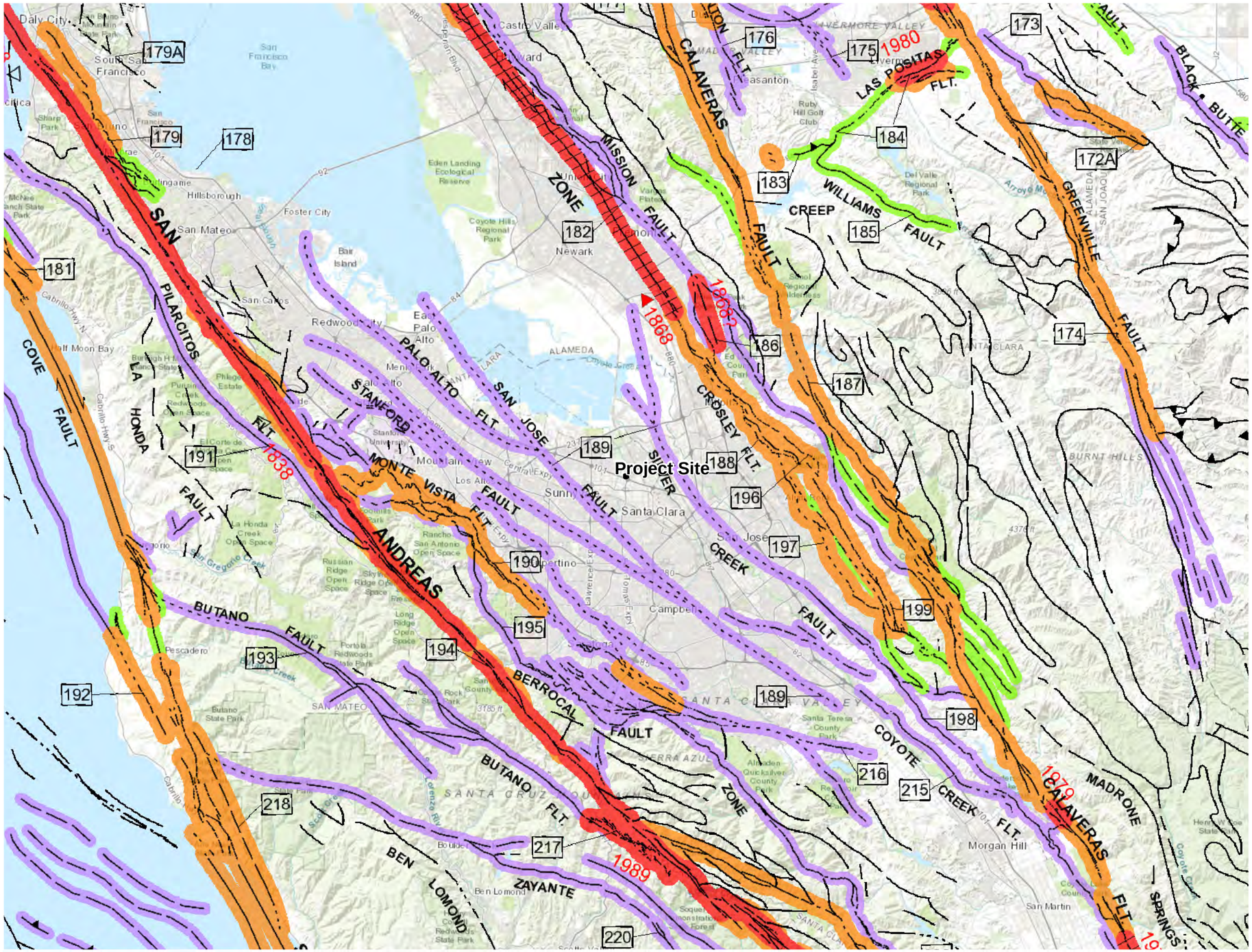
0 1,000 2,000

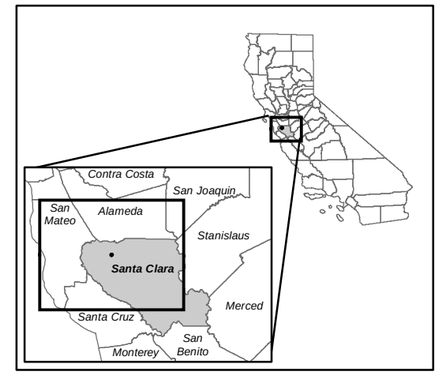
Approximate scale in feet

Figure 3.7-2
Geology Within Project Area
Laurelwood Data Center
Santa Clara, California

JACOBS

\\BROOKSIDEFILES\GIS_SHARE\ENBG\00_PROJ\E\EDGECORE\GIS\MAPS\REPORT\FIG3_07-2_GEOLOGY_HALFMILE.MXD 2/15/2019 2:28:24 PM





LEGEND

Laurelwood Data Center

Fault Classification (Regional)

Activity

- Historic
- Holocene
- Late Quaternary
- Quaternary

Source:

Service Layer Credits: California Geological Survey, C.W. Jennings, W.A. Bryant
Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, © OpenStreetMap contributors, and the GIS User Community

N

0 5 10

Approximate scale in miles

Figure 3.7-3
Regional Fault Map
Laurelwood Data Center
Santa Clara, California

JACOBS

\\BROOKSIDEFILES\GIS_SHARE\ENBG\00_PROJ\E\EDGECORE\GIS\MAPS\REPORT\FIG3_07-3_GEOLOGY_FAULT.MXD 2/15/2019 2:29:54 PM

The San Tomas Aquino Creek is located approximately 400 to 450 feet west of the site. The preliminary geotechnical investigation determined that there is potential for lateral spreading to affect the proposed data building in the northern part of the site and mitigation may be required.

3.7.1.6 Regulatory Setting

The project will be required to obtain building permits that would be issued by the City of Santa Clara (City). The issuance of the building permits and oversight provided by the City will ensure that the project complies with the applicable building codes.

3.7.1.6.1 Federal Clean Water Act and State Porter-Cologne Water Quality Control Act – Construction Site Discharges

Under the federal Clean Water Act, discharge of stormwater from construction sites must comply with the conditions of an National Pollutant Discharge Elimination System permit. The State Water Board has adopted a statewide General Permit for Stormwater Discharges Associated with Construction and Land Disturbance Activities (Construction General Permit) that applies to projects resulting in 1 or more acres of soil disturbance. For projects disturbing more than 1 acre of soil, a construction Stormwater Pollution Prevention Plan (SWPPP) is required that specifies site management activities to be implemented during site development. These management activities include construction stormwater best management practices, erosion and sedimentation controls, dewatering, runoff controls, and construction equipment maintenance. The San Francisco Bay Regional Water Quality Control Board (RWQCB) requires a Notice of Intent to be filed prior to any stormwater discharge from construction activities, and that the SWPPP be implemented and maintained onsite.

3.7.1.6.2 Federal Paleontological Laws, Ordinances, Regulations, and Standards

The National Environmental Policy Act as amended (Pub. L. 91-190, 42 U.S.C. 4321-4347, January 1, 1970, as amended by Pub. L. 94-52, July 3, 1975, Pub. L. 94-83, August 9, 1975, and Pub. L. 97-258 § 4(b), September 13, 1982) recognizes the continuing responsibility of the federal government to “preserve important historic, cultural, and natural aspects of our national heritage...” (Sec. 101 [42 U.S.C. § 4321]) (#382). This can be interpreted to refer to paleontological as well as cultural resources.

3.7.1.6.3 State Paleontological Laws, Ordinances, Regulations, and Standards

The California Environmental Quality Act (CEQA) encourages the protection of all aspects of the environment by requiring state and local agencies to prepare multidisciplinary analyses of the environmental impacts of a project and to make decisions based on the findings of those analyses. CEQA includes in its definition of historical resources, “any object [or] site …that has yielded or may be likely to yield information important in prehistory” (California Code of Regulations, Title 14, § 15064.5(a)(3)(D)), which is typically interpreted as including fossil materials and other paleontological resources. More specifically, destruction of a “unique paleontological resource or site or unique geologic feature” may be a significant impact under CEQA (CEQA Guidelines Appendix G.V.(c)).

3.7.1.6.4 Local Paleontological Regulations

The City’s General Plan (2010) was reviewed for provisions relevant to paleontological resources. No requirements, policies, goals, or objectives relevant to paleontological resources were found.

3.7.2 Environmental Impacts and Mitigation Measures

a) Would the project directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:

i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.

Less Than Significant Impact. The project site is located within the seismically active San Francisco Bay region, and the nearest fault (Hayward) is approximately 6.7 miles from the project site (DOC, 2015). The project site, however, is not within a state of California Earthquake Fault Zone or within the trace of any known active fault. Therefore, there is a less than significant direct or indirect impact of human exposure to ground rupture.

ii) Strong seismic ground shaking?

Less Than Significant Impact. The design of the project, including the building foundations, would assess potential impacts of strong seismic ground shaking. Seismic hazards will be minimized by conformance to the seismic design criteria of the 2016 California Building Code. Further, a project-specific geotechnical engineering report will be provided to the City building official for review and approval prior to issuance of a building permit. With implementation of seismic design guidelines per the California Building Code, as well as the anticipated project-specific recommendations in the final geotechnical engineering report, the project would not expose people or property, directly or indirectly, to significant impacts associated with geologic or seismic ground shaking.

iii) Seismic-related ground failure, including liquefaction?

Less than Significant Impact. The site is located within an earthquake-induced liquefaction hazard zone, and there is potential for soil layers at the site to liquefy during a seismic event. Analyses indicate that liquefaction-induced settlement at the project site could be 2 to 4.75 inches of total liquefaction induced settlement in the upper 50 feet. The proposed structures will therefore be designed and constructed in accordance with the California Building Code (TRC, 2018).

In addition, as discussed under question (a)(i), a project-specific design will be included within a geotechnical engineering report and provided to the City building department for review and approval prior to the issuance of a building permit. Therefore, with implementation of the seismic design guidelines for ground failure, and the recommendations in the final geotechnical engineering report, the project would not expose people or property to any significant direct or indirect impacts associated with geologic or seismic conditions onsite.

iv) Landslides?

Less Than Significant Impact. As the project site is flat with no open faces or slopes near the site, there is low potential for landslides and therefore there is no direct or indirect significant impacts associated with landslides.

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

Less Than Significant Impact. Construction activities associated with the project including excavation, trenching, and grading may temporarily increase sedimentation and erosion by exposing soils to wind and runoff until construction is complete and new vegetation is established. As discussed in Section 3.10, Hydrology and Water Quality, the project is subject to construction-related stormwater permit requirements. Prior to any ground-disturbing construction activity, the project must comply with the Construction General Permit, which includes filing a Notice of Intent with the San Francisco Bay RWQCB, coordinating with the City, and preparing and implementing a SWPPP. The SWPPP will

include best management practices for stormwater quality control, including soil stabilization practices, sediment control practices, and wind erosion control practices. When construction is complete, the project will file a Notice of Termination with the San Francisco Bay RWQCB and City of Santa Clara, documenting that all elements to the SWPPP have been implemented.

By complying with existing permits, runoff from the project site would not violate the applicable waste discharge requirements or otherwise contribute to the degradation of stormwater runoff quality. Therefore, impacts related to erosion and loss of topsoil would be less than significant and no mitigation is required.

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. Lateral spreading appears possible for the proposed data center building (on the northern half of site). This potential impact will be reduced by the construction of a shear key of improved soil between the building and creek channel to the west, for instance. A project-specific geotechnical engineering report will be conducted prior to final design, which will incorporate project design features needed to address potential lateral spreading. Both the geotechnical engineering report and final project design documents will be provided to the City's building official for review and approval prior to issuance of a building permit. With implementation of design guidelines per the California Building Code as well as the anticipated project-specific design recommendations in the final geotechnical engineering report, the project would not expose people or property, directly or indirectly, to unstable geologic or soil units.

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

Less than Significant impact. Highly to very highly expansive soils are present across the site. This condition can be eliminated by ensuring slabs-on-grade have sufficient reinforcement and be supported on a layer of non-expansive soil, along with limiting moisture changes in the near-surface soils, among other design criteria. The project specific geotechnical engineering report along with the final project design will address, as needed, any potential issues arising from highly and very highly expansive soils. Both the geotechnical engineering report and final project design documents will be provided to the City's building official for review and approval prior to issuance of a building permit. With implementation of design guidelines per the California Building Code as well as the anticipated project-specific mitigation recommendations in the final geotechnical engineering report, the project would not create substantial direct or indirect 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 will connect to an existing City-provided sanitary sewer connection and will not require septic tanks or an alternative wastewater disposal system. Therefore, there would be no impact to soils as a result of sanitary waste disposal from the project.

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

Less Than Significant Impact. The level of paleontological sensitivity at the project site is considered to be moderate (Earthview Science, 2019) (see Appendix 3.7-A). The project site is located in the Santa Clara Valley, an area known to have scientifically significant but widespread or intermittent fossil discoveries. Sediment surficial sediment has been mapped as Holocene (11,700 years before present) and paleontological evidence indicates that Pleistocene (2.6 million to 11,700 years before present) sediment may also be present at or near the surface. Five fossil sites have been found at or near the ground surface within 1.5 miles of the project site, especially along stream beds. However, the general area has been extensively developed over the last 50 years as part of the technology

research and development area known as Silicon Valley. The project site itself has been developed since the 1960s.

The potential to disturb paleontological resources would occur during the construction activities requiring earth moving, such as grading, trenching for utilities, excavation for foundations, and installation of support structures. There is no potential to disturb paleontological resources during operations because there would be no earth-moving activities required for operations.

The first 2.5 feet below ground surface is considered to have no paleontological sensitivity because it consists of undocumented fill (Cornerstone, 2019). The area below the undocumented fill is of moderate paleontological sensitivity. As a project design feature, the project will implement a Worker Environmental Awareness Training Program, which will provide training to construction personnel regarding proper procedures (including identification and notification) in the event fossil materials are encountered during construction.

Previously Identified Mitigation Measures: None.

New Proposed Mitigation Measures: None.

3.7.3 References

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3.8 Greenhouse Gas Emissions

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

Environmental checklist established by CEQA Guidelines, Appendix G.

3.8.1 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 (CO_2), methane (CH_4), nitrous oxide (N_2O), and fluorinated compounds, such as hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride (SF_6). Emissions of GHGs contributing to global climate change are attributable in large part to human activities associated with the transportation, industrial/manufacturing, utility, residential, commercial, and agricultural sectors.

3.8.1.1 Regulatory Background

3.8.1.1.1 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 Supreme 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 the U.S. Environmental Protection Agency (EPA) under the CAA.

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

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

In 2009, EPA issued the Final Mandatory Reporting of Greenhouse Gases Rule, which requires reporting of GHG emissions from large sources and suppliers in the U.S. 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 carbon dioxide equivalent (CO_2e) per year to submit annual reports to EPA. The rule is intended to collect accurate and timely emissions data to guide future policy decisions on climate change.

Historically EPA has mandated that Prevention of Significant Deterioration (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. EPA, et al. (Supreme Court Case

12-1146) found that 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 EPA can regulate GHG emissions from sources that are already subject to PSD and Title V requirements due to emissions of other pollutants.

The project would not be subject to these regulations.

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

Part of CARB's direction under AB 32 was to develop a scoping plan that contains the main strategies California will use to reduce GHG emissions that cause climate change. CARB first approved the AB 32 Scoping Plan in 2008 and released its latest update in 2017. The Scoping Plan includes a range of GHG reduction actions, which include 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.

One key regulation resulting from AB 32 was CARB's Regulation for the Mandatory Reporting of Greenhouse Gas Emissions, which came into effect in January 2009 and which requires annual GHG emissions reporting from electric power entities, fuel suppliers, CO_2 suppliers, operators of petroleum and natural gas systems, and industrial facilities that emit 10,000 metric tons or more of CO_2e per year from stationary combustion and/or process sources. The project is not impacted by this regulation because its stationary combustion GHG emissions are expected to be below the reporting threshold of 10,000 metric tons of CO_2e per year.

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

In 2006, the California Public Utilities Commission and California Energy Commission established requirements for utilities under the Electricity Greenhouse Gas Emission Standards Act (Senate Bill [SB] 1368[1]), which requires that generation and contracts be subject to a GHG Environmental Performance Standard of 1,100 pounds (or 0.5 metric ton) of CO_2 per megawatt-hour (MWh) of electricity produced. The Environmental Performance Standard applies to base load power from new power plants, new investments in existing power plants, and new or renewed contracts with terms of 5 years or longer, including contracts with power plants located outside of California.[2] Implementation of the AB 32 Scoping Plan requires careful coordination on the state's energy policies, meaning that the California Public

[1] Public Utilities Code Section 8340 et seq.

[2] See rule at http://www.cpuc.ca.gov/PUBLISHED/FINAL_DECISION/64072.htm.

Utilities Commission and CARB are working closely to implement the recommendations in the Scoping Plan. Additionally, the Intergovernmental Panel on Climate Change, 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 (2007).

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

In May 2016, CARB prepared the Mobile Source Strategy, which addresses the current and proposed programs for reducing all mobile source emissions, including GHG emissions. The Mobile Source Strategy identifies programs that the state and federal government have or will adopt, which further the goals of the Scoping Plan. Some programs provide incentives to facilitate increased purchase of new, lower emission light-, medium-, and heavy-duty vehicles to aid the state in achieving emission reduction goals. Other programs require certain engine years to upgrade the engine to newer, cleaner engines by specific dates or strict performance standards for specific model years. These programs for more stringent emissions are required by state and federal law and are monitored by CARB or 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, SB 2 of the First Extraordinary Session (SB X1-2) was signed into law. SB X1-2 expressly applies the new 33 percent RPS to all retail sellers of electricity by December 31, 2020, and establishes renewable energy standards for interim years prior to 2020.

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

3.8.1.1.3 Regional

The Bay Area Air Quality Management District (BAAQMD) adopted the *2017 Bay Area Clean Air Plan* on April 19, 2017 (BAAQMD, 2017a). The 2017 Clean Air Plan provides a regional strategy to protect public health and 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 GHG emission reduction targets for 2030 and 2050, and provides a regional climate protection strategy that will put the Bay Area on a pathway to achieve those GHG emission reduction targets.

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

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

3.8.1.1.4 Local

City of Santa Clara General Plan. The City of Santa Clara (City) 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 Santa Clara's contribution to GHG emissions. As described in subsequent text, the development of a comprehensive GHG emissions reduction strategy for Santa Clara is also included in the General Plan.

City of Santa Clara Climate Action Plan. The City has a comprehensive GHG emissions reduction strategy, referred to as the City's Climate Action Plan (CAP), to achieve its share of statewide emissions reductions for the 2020 timeframe established by AB 32. The CAP was adopted on December 3, 2013, and specifies the strategies and measures to be taken for a number of focus areas (for example, coal-free and large renewables, energy efficiency, water conservation, transportation and land use, waste reduction) city-wide to achieve the overall emission reduction target. The CAP also 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 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 (City of Santa Clara, 2013). This measure is being undertaken by SVP.

CEQA requires lead agencies to address the consistency of individual projects requiring discretionary approvals with reduction measures in the 2013 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.

3.8.1.1.5 Existing Conditions

The City prepares an annual report to assess progress towards meeting the GHG reduction targets established in the 2013 CAP and recommend next steps to help the City meet its targets. This report also tracks changes in community-wide GHG emissions since 2008, which is the City's jurisdictional baseline as the most recent, complete GHG emissions inventory.[3] Table 3.8-1 presents the City's 2008 GHG emissions inventory (City of Santa Clara, 2017).

This GHG emissions inventory includes direct and indirect GHG emissions attributable to human activities. As shown in Table 3.8-1, nonresidential energy, which includes electricity and natural gas use, was the largest sector, comprising 60 percent of all 2008 emissions in Santa Clara. Transportation

[3] Although the next complete update was planned for 2017, results have not yet been published.

emissions, from vehicle trips within and to/from the City, were the second largest source of emissions, comprising 28 percent. All other sectors represented less than 10 percent of total emissions, and include energy use from homes, off-road equipment, solid waste disposal, and the transmission and treatment of water and sewage (City of Santa Clara, 2017).[4]

Table 3.8-1. City of Santa Clara 2008 Greenhouse Gas Emissions Inventory

End-Use Sector	Total Emissions (%)	CO2e Emissions (Metric Tons per Year)
Nonresidential Energy	60	1,110,100
Transportation	28	523,000
Residential Energy	8	153,200
Off-Road Equipment	2	31,300
Waste	1	27,500
Water and Wastewater	< 1	9,200
Total	100	1,854,300

Source: City of Santa Clara, 2017

3.8.2 Methodology and Significance Criteria

3.8.2.1 Methodology

Short-term project construction emissions of CO_2e were evaluated. Detailed construction emission calculations are presented in Appendix 3.3-A, including the assumptions employed. Construction emissions from the project are a result of construction equipment and on- and offsite vehicle trips, such as material haul trucks, worker commutes, and delivery vehicles. Emissions were estimated using construction equipment fuel consumption from the OFFROAD2017 Web Database[5], vehicle fuel economy from the EMFAC2014 Web Database[6], offsite vehicle idling emission factors from EMFAC2014, and emission factors by fuel type and/or vehicle category from The Climate Registry (TCR, 2018).

Long-term project operational emissions of CO_2e were also evaluated. Detailed operation emission calculations are presented in Appendix 3.3-B, including the assumptions employed. Operation emissions from the project are a result of diesel fuel combustion from operation of the standby diesel generators, offsite vehicle trips for worker commutes and material deliveries, and facility upkeep (such as architectural coatings, consumer product use, landscaping, water use, waste generation, natural gas use for comfort heating, and electricity use). Diesel stationary combustion emissions were estimated using emission factors from EPA's Final Mandatory Reporting of Greenhouse Gases Rule, as presented in 40 CFR 98.33. Vehicle emissions were estimated using vehicle fuel economy from the EMFAC2014 Web Database, vehicle idling emission factors from EMFAC2014, and emission factors by fuel type and/or vehicle category from TCR. Facility upkeep emissions were estimated using the California Emissions Estimator Model (CalEEMod), based on the square footage of the buildings to be constructed, paved areas, and project-specific electricity use.

[4] This inventory does not include point source emissions (as from industrial facilities) or rail transit emissions, as both are considered to be regulated by agencies other than the City and influenced by market forces beyond the City's local influence.

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

[6] The EMFAC2014 Web Database is available at: http://www.arb.ca.gov/emfac/2014/.

3.8.2.2 Significance Criteria

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

As discussed, BAAQMD has published CEQA Guidelines that include recommended thresholds for use in determining whether projects would have significant adverse environmental impacts. Specifically, BAAQMD has adopted a threshold of 1,100 metric tons of CO_2e per year for evaluating climate change impacts from land use development projects and a threshold of 10,000 metric tons of CO_2e per year for evaluating climate change impacts from stationary source projects. Land use development projects include residential, commercial, industrial, and public land uses and facilities, whereas stationary source projects include land uses that would accommodate processes and equipment that emit GHG emissions and require a local air district permit to operate (BAAQMD, 2017b). Given that the project would accommodate standby diesel generators requiring BAAQMD permits to operate, the stationary source project threshold is applicable to this project, instead of the land use development project threshold, as described in subsequent text.

The BAAQMD’s 10,000 metric tons of CO_2e per year threshold is consistent with stationary source thresholds adopted by other air quality management districts throughout the state and is intended to capture 95 percent of all GHG emissions from new permit applications from stationary sources in the San Francisco Bay Area Basin (BAAQMD, 2017b). The standby generators included as part of the project would be permitted sources, and as such, the BAAQMD’s 10,000 metric tons of CO_2e per year threshold is appropriate for analyzing the significance of emissions produced by the generators. Emissions from mobile sources and area sources, such as electricity use and water delivery, associated with project operation would not be included for comparison to this threshold, based on guidance in the BAAQMD’s CEQA Guidelines (BAAQMD, 2017b).

Therefore, GHG impacts from the project’s standby generators would be considered to have a less-than-significant impact if emissions are below the BAAQMD’s threshold of 10,000 metric tons of CO_2e per year. GHG impacts from all other project-related emission sources would be considered to have a less-than-significant impact if the project is consistent with the Santa Clara CAP and applicable regulatory programs and policies adopted by CARB or other California agencies.

3.8.3 Environmental Impacts and Mitigation Measures

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

Less Than Significant Impact. As shown in Table 3.8-2, standby generator maintenance and testing would generate 6,142 metric tons of CO_2e per year. Emissions from the standby generators are below BAAQMD’s stationary source threshold of 10,000 metric tons of CO_2e per year, and are, therefore, considered to have a less-than-significant impact on climate change.

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

Source	Annual Emissions (Metric Tons per Year of CO_2e)
Stationary Sources – Standby Generators	6,142
BAAQMD Threshold	10,000
Exceeds Threshold?	No

Source: BAAQMD, 2017b.

Construction Emissions. As discussed, construction of the project would result in GHG emissions generated by on- and offsite vehicle trips (material haul truck, worker commute, and delivery vehicle trips) and operation of construction equipment. These sources would generate approximately 900 metric tons of CO_2e during the 14-month construction period. Because construction emissions would cease once construction is complete, they are considered short-term. The BAAQMD's 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. BAAQMD further recommends incorporation of Best Management Practices to reduce GHG emissions during construction, as feasible and applicable. Best Management Practices may include use of alternative-fueled (for example, biodiesel or electric) construction vehicles and equipment for at least 15 percent of the fleet, use of at least 10 percent of local building materials, and recycling or reusing at least 50 percent of construction waste (BAAQMD, 2017b).

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

Project Stationary Combustion Sources. The standby generators are expected to be operated only for testing and maintenance purposes, with non-emergency operation of each generator limited by permit to 50 hours per year. If all 56 standby generators were operated at full load for the full 50 hours per year, the generators would consume 14,280[7] barrels per year (bbl/year) of diesel fuel. The proposed consumption of diesel fuel by the generators would be approximately 0.004[8] percent of the total California capacity.

SVP Electricity Generation. Electricity for the project would be provided by SVP. The City currently has ownership interest, or has purchase agreements, for nearly 1,020 megawatts (MW) of electricity (SVP, 2019a). This capacity far exceeds the City's current peak electricity demand of approximately 587 MW (SVP, 2019c). No new peaking generation 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.

SVP follows the state's preferred loading order in procuring new energy resources. First, the current load (customer) is encouraged to participate in energy efficiency programs to reduce their usage, thus freeing up existing resources (and any related emissions) for new load (electricity demand). In addition, the City, working together with SVP, 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. Demand displaced by customer-based renewable projects is also available to meet new load requests.

SVP seeks to meet its RPS goal through the addition of new renewable resources. SVP has a lower GHG emission rate than the statewide California power mix because it uses a much higher portion of renewable sources. A comparison of SVP's and the statewide power mix is shown in Table 3.8-3.

[7] Calculated as: 214.2 gallons per hour x 50 hours per year x 56 generators = 599,760 gallons per year = 14,280 bbl/yr.

[8] Calculated as follows, based on the California Energy Commission's 2018 Weekly Fuels Watch Report: 14,280 bbl/yr / 341,036,000 bbl/yr = 0.004 percent. Report is available at https://www.energy.ca.gov/almanac/petroleum_data/fuels_watch/, and was accessed February 18, 2019.

Table 3.8-3. Comparison of SVP and Statewide Power Mix

Energy Resources	2017 SVP Power Mix	2017 California Power Mix
Renewable (Biomass, Geothermal, Small Hydro, Solar, and Wind)	38%	29%
Coal	9%	4%
Large Hydro	34%	15%
Natural Gas	16%	34%
Nuclear	0%	9%
Other	0%	< 1%
Unspecified sources of power (not traceable to specific sources)	3%	9%
Total	100%	100%

Source: SVP, 2019b.

SVP's carbon intensity factor for 2015 was determined to be 570 pounds (0.256 metric tons) of CO_2e per MWh (City of Santa Clara, 2017). 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 be coal-free and increased large renewables power generation as a part of the City's CAP.

Project Electricity Usage. Data centers are an energy-intensive land use, requiring more electricity than other types of development. The primary function of the data center is to house computer servers, which require electricity and cooling 24 hours a day to operate. The projected maximum demand for the entire project is 99 MW. On an annual basis, the project would consume up to the maximum electrical usage of 867,240 MWh per year. The project's annual GHG emissions related to electricity use would be about 13 percent less per year by using SVP's power mix than if the California statewide average power mix was used.

Project Mobile Emission Sources. Approximately 54 employees, including 8 environmental personnel, 18 operations personnel, 3 mechanics, and 25 security or administrative personnel, would be employed at the project site on a daily basis. There would be an average of 74 total daily trips, including vendor and employee trips.

Project Water Consumption and Waste Generation. Water consumption results in indirect emissions from electricity usage for water conveyance and wastewater treatment. Indoor uses at the project site would generate a potable water demand of approximately 1,032 acre-feet per year. Recycled water would be utilized where feasible, based on availability from the City. Daily operations at the data center would generate waste, which results in fugitive GHG emissions during decomposition.

Summary of GHG Emissions. Emissions from stationary combustion sources (standby diesel generator testing and maintenance) are presented in Table 3.8-2.

Emissions from energy use, mobile and area sources, water use, and waste generation (i.e., project operation) are provided in Table 3.8-4.

Table 3.8-4. Greenhouse Gas Emissions from Energy Use, Mobile Sources, Area Sources, Water Use, and Waste Generation During Project Operation

Source	Annual Emissions (Metric Tons per Year of CO_2e)
Energy Use[a]	254,322
Mobile Sources[b]	300
Area Sources[c]	0.01
Water Use	501
Waste Generation	460
Total	255,583

[a] Energy use emissions include emissions from electricity and natural gas use for comfort heating.
[b] Mobile source emissions include emissions from worker commute and vendor trips.
[c] Area source emissions include emissions from architectural coatings, consumer products, and landscaping.

As compared to the CO_2e emissions in Table 3.8-1, the standby generators would comprise less than 1 percent of the total City GHG emissions. As shown in Table 3.8-4, operation of the project would generate 255,583 metric tons of CO_2e per year. Inclusion of emissions from the LDC's maximum possible electricity use and other non-stationary sources brings this contribution to a maximum of 14 percent of the total City GHG emissions. 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 (for example, SB 350 and SB 100). To reduce GHG emissions and the use of energy related to building operations, the project chillers would be installed with variable frequency drives 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 two electrical vehicle charging stations. Water use reduction measures would also be incorporated in the building design, including the use of recycled water in the cooling towers.

Conclusion

For stationary-source projects, the threshold to determine the significance of an impact from GHG emissions is 10,000 metric tons of CO_2e per year. Stationary-source projects include land uses that would accommodate processes and equipment that emit GHG emissions and would require a BAAQMD permit to operate. If annual emissions of operational-related GHGs exceed these levels, the project would result in a cumulatively considerable contribution of GHG emissions and a cumulatively significant impact to global climate change. For the LDC, the project emissions are expected to be less than the 10,000 metric tons of CO_2e per year threshold and would not be considered to be cumulatively significant.

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

Less Than Significant Impact. The project will not conflict with any applicable plan, policy, or regulation adopted to reduce GHG emissions. The 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 and existing and new development projects in the City. Discussion of the project's conformance with the applicable reduction measures for new development in the CAP are provided in subsequent text.

Energy Efficiency Measures. Power Usage Effectiveness (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) (server) power draw (for example, PUE = Total Facility Source Energy/IT Source Energy). For example, a PUE of 2 means that the data center or laboratory must draw 2 watts of electricity for each 1 watt of power consumed by the IT/server equipment. It is equal to the total energy consumption of a data center (for all fuels) divided by the energy consumption used for the IT equipment. The ideal PUE is one where all power drawn by the facility goes to the IT infrastructure. With implementation of the proposed mechanical and electrical design of the building and the anticipated data center occupancy, the PUE will be 1.25 or better at the LDC.

Measure 2.3 of the CAP calls for completion of a feasibility study of energy efficient practices for new data center projects with an average rack power rating[9] of 15 kilowatts or more to achieve a PUE of 1.2 or lower. The project would have an average rack power rating range of 8 to 10 kilowatts. This would be below the criteria in Measure 2.3, such that a formal feasibility study of energy efficient practices is not required.

Water Conservation Measures. 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 CALGreen. For the project, these measures would include:

- Water efficient landscaping with low-usage plant material to minimize irrigation requirements
- Sourcing of site irrigation from 100 percent non-potable water, based on availability of recycled water
- Use of recycled water in cooling towers, based on availability of recycled water
- 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 CAP, the Santa Clara General Plan includes goals and policies to address sustainability 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 3.8-5. As shown, the project would be consistent with the applicable sustainability policies in the Santa Clara General Plan.*

[9] 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.

Table 3.8-5. 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 use recycled water for landscape irrigation and the cooling towers, as available.
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 two 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 use 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," using reflective surfaces to reduce heat gains. Waterside economizers would be used to cool data center loads.
Encourage new development to incorporate sustainable building design, site planning, and construction, including encouraging solar opportunities.	
Reduce energy consumption through sustainable construction practices, materials, and recycling.	
Promote sustainable buildings and land planning for all new development, including programs that reduce energy and water consumption in new development.	
Water Use Policies	
Maximize the use of recycled water for construction, maintenance, irrigation, and other appropriate applications.	Consistent. The project would use recycled water for landscape irrigation and the cooling towers, as available.

Bay Area 2017 Clean Air Plan. The 2017 Bay Area Clean Air Plan includes performance objectives, consistent with the state's climate protection goals under AB 32 and SB 375, designed to reduce emissions of GHG emissions to 1990 levels by 2030 and 80 percent below 1990 levels by 2050. Due to the relatively high electrical demand of the LDC, energy efficiency measures are included in the design and operation of the onsite electrical and mechanical systems.

Plan Bay Area 2040/California SB 375. Under the requirements of SB 375, the MTC and ABAG developed a SCS with the adopted Plan Bay Area 2040 to achieve the Bay Area's regional GHG reduction target. Plan Bay Area 2040 sets a 15 percent GHG emissions reduction per capita target from passenger vehicles by 2035 when compared to 2005 emissions. However, these emission reduction targets are intended for land use and transportation strategies only. The project would generate an average of 74 total daily vehicle trips, including vendors and employee trips, which is expected to be similar to vehicle counts associated with the site's existing land use. Due to the limited number of employees and visitors at the project site, particularly when compared to the site's existing land use, 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.

California SB 100. SB 100 advances the RPS renewable resources requirement to 50 percent by 2026 and 60 percent by 2030. It also requires renewable energy resources and zero-carbon resources to supply 100 percent of all retail sales of electricity by 2045. The project's GHG emissions are predominantly from electricity usage. As stated previously, this project could significantly reduce GHG emissions by purchasing all of its electricity from Santa Clara Green Power, which is available through SVP. 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.

AB 32 Scoping Plan. 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.

Conclusion

With implementation of the project's efficiency measures, in combination with the green power mix used by SVP, GHG emissions related to the project, including emissions associated with construction, operations, and maintenance, would not conflict with the Santa Clara CAP or other plans, policies, or regulations adopted for the purpose of reducing the emissions of GHGs. Stationary source emissions would also be less than BAAQMD's threshold of 10,000 metric tons of CO_2e per year.

Previously Identified Mitigation Measures: None.

New Proposed Mitigation Measures: None

3.8.4 References

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3.9 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 and, as a result, would it create a significant hazard to the public or the environment?	☐	☐	☒	☐
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard or excessive noise for people residing or working in the project area?	☐	☐	☐	☒
f) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	☐	☐	☐	☒
g) Expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires?	☐	☐	☐	☒

Environmental checklist established by CEQA Guidelines, Appendix G.

3.9.1 Setting

The Laurelwood Data Center (LDC) will be located on an approximately 12-acre site and will consist of two, four-story data center buildings. To ensure reliability in the unlikely event of loss of electric service from Silicon Valley Power, the LDC will include 56 standby generators to provide electrical power during outages.

The project site's historic industrial uses resulted in groundwater and soil contamination that are well-documented and subject to ongoing regulatory oversight. As discussed in this section, this historic groundwater and soil contamination remediation will continue and will not be affected by the project; one groundwater well will be removed and relocated.

The project site was formerly owned by Siliconix Incorporated (Siliconix). Siliconix operated a semiconductor wafer manufacturing facility, consisting of three buildings built in 1969, 1974, and 1984. In recent years manufacturing has been discontinued and the current onsite facilities are being decommissioned (see Attachment 3.9-A, the Phase I ESA.) Siliconix is subject to an existing order from the San Francisco Bay Regional Water Quality Control Board (San Francisco Bay RWQCB). The San Francisco Bay RWQCB order requires Siliconix to implement a soil and groundwater investigation and remedial plan to manage, monitor, and remediate historical contamination issues at the site.

The remaining Siliconix facilities will be demolished by Siliconix as a condition of the sales contract. Siliconix continues to be responsible for the remediation of the site and to own and operate the onsite treatment systems. Construction of the LDC will occur after Siliconix demolition activities. Siliconix

demolition will also relocate one monitoring well. All Siliconix work is approved and consistent with the San Francisco Bay RWQCB and other applicable demolition requirements. As discussed in this section, the LDC will be constructed and operated in a manner that is consistent with Siliconix' groundwater and site remediation activities, and all applicable laws, ordinances, regulations, and standards.

3.9.2 Historic Contamination, Investigation and Remediation

In April 1987, the San Francisco Bay RWQCB contacted Siliconix concerning groundwater contamination (trans-1,2-dichloroethylene [tDCE]) that was detected at the Intel property located downgradient from the site. Soils contaminated with tDCE, gasoline, and gasoline-related compounds reportedly had been detected at the site in 1984. In September 1987, the San Francisco Bay RWQCB requested that Siliconix conduct a groundwater investigation. In February 1988, a preliminary groundwater investigation was conducted by Siliconix and consisted of the installation and sampling of three monitoring wells and the sampling of one existing monitoring well. Trichloroethene (TCE) and tDCE were detected in a downgradient monitoring well at concentrations up to 1,700 micrograms per liter (µg/L) and 8,300 µg/L, respectively. In May 1988, a soil gas survey and sampling of a downgradient monitoring well indicated that a plume of TCE and tDCE extended downgradient from the Siliconix facility. Several suspected volatile organic compound (VOC) source areas were located onsite, including two former waste neutralization sumps, solvent storage areas, and an area formerly used for degreasing of metal parts. Some of these possible source areas are under Building 3, which was constructed in 1984. The source for the gasoline and related compounds is reported to be the three gasoline underground storage tanks (UST) that were removed in 1983; these USTs were formerly located beneath Building 3.

In 1994 Siliconix submitted a Fixed Treatment Unit Permit by Rule Initial Notification of Intent to Operate to the Department of Toxic Substances Control (DTSC). There are four DTSC permitted waste treatment units at the site including acid waste neutralization, hydrofluoric waste treatment, drum washer, and plating line. The DTSC Hazardous Waste Tracking System showed that Siliconix generated hazardous waste at the facility from 1993 to 2015.

A groundwater investigation of the project site identified three water-bearing zones. The first zone, A zone, is 10 to 18 feet below ground surface and 3.5 to 16 feet thick. The investigation identified groundwater pollutant plume originating at the site and extending 750 feet offsite (downgradient), and impacting both Zones A and B. The primary groundwater contaminates identified are TCE, dichloroethylene (DCE), vinyl chloride, gasoline, and breakdown products. It is believed that contamination from the project site has comingled with groundwater contamination from an adjacent site downgradient, which has been issued a "No Further Action" letter due to the relatively low concentrations of contaminants in the groundwater due to cleanup activities (San Francisco Bay RWQCB, 2008).

In June of 1990, cleanup activities at the site commenced, including construction of a groundwater remediation system. The groundwater remediation system consisted initially of two extraction wells in the A zone and one extraction well in the B zone. The groundwater extraction system initially installed, redesigned in 2007 and supplemented in 2012, has effectively contained the contamination plume and resulted in a reduction in contamination levels. While groundwater contamination concentrations have yet to achieve the established cleanup goals, investigation has shown that the contamination plume does not extend to the San Tomas Aquinas Creek, and deed restrictions ensure that future owners of the property will not establish sensitive uses onsite and prohibit the use of shallow groundwater beneath the site (San Francisco Bay RWQCB, 2008).

Groundwater and soil vapor monitoring currently are conducted at the site on a quarterly basis in accordance with the San Francisco Bay RWQCB order (2008). In the current groundwater monitoring program, 22 groundwater monitoring wells and 4 extraction wells are sampled quarterly for VOCs, and an additional 2 monitoring wells are sampled semiannually for VOCs. Soil vapor monitoring is conducted at sampling probes SV-1 through SV-5 located around the southeastern corner of the northerly adjacent Intel Building SC-12 to monitor for potential soil vapor intrusion concerns. While VOCs have been detected in soil vapor samples, vapor inhalation risk modeling results reportedly have been below the goals established by the San Francisco Bay RWQCB for the current SC-12 land use.

A source area investigation was conducted at the site to improve the understanding of VOC distribution and potential migration pathways within the suspected source areas at the location of Building 3. Among other findings, the report concluded that “no enduring contaminant sources were identified in vadose zone soils (0-10 feet below ground surface)” and that the greatest VOC concentrations in groundwater were detected at the base of the B zone within a relatively narrow interval, generally between approximate depths of 34 and 40 feet. (San Francisco Bay RWQCB, 2008) In a May 2018 e-mail, the San Francisco Bay RWQCB approved the source area investigation report and concurred that there does not appear to be a significant VOC vadose zone soil source under Building 3. The San Francisco Bay RWQCB noted that the route that VOCs were released to the surface remains unknown, and that if potential sources are identified during facility decommissioning or demolition activities, further evaluation could be required.

As demonstrated by the regulatory program discussed in Section 3.9.3, these historic and ongoing investigations and remediation activities will be unaffected by construction of the LDC and the relocation of the one monitoring well.

3.9.3 Redevelopment Considerations

The property includes a deed restriction, executed in August 2017 that limits the uses of the property to industrial, commercial, or office space. The deed restriction allows for uses such as the LDC. The deed restriction prohibits human habitation like residential, hospitals, daycares for children or senior citizens, schools for persons under 21 years of age, which are not part of the LDC use. The deed restrictions prohibit drilling wells or extracting water for any use. The LDC does not include any such drilling or wells. The deed restrictions also require the owner or occupant of the site to notify (by registered mail) the San Francisco Bay RWQCB of the type, cause, location, and date of any disturbance to any remedial measure/equipment that could affect the ability of such remedial measure from performing its respective function or the repair of such disturbance. The LCD complies with these requirements. The deed restriction also prohibits the owner or occupant from exacerbating the existing environmental conditions of the property (San Francisco Bay RWQCB, 2017). The construction of the LDC is consistent with these important policy considerations for reuse of formerly contaminated sites.

During demolition of the existing buildings, Siliconix will remove any contaminated soils encountered to a depth of 8 feet below ground surface prior to turning the project site over for redevelopment. This work by Siliconix as a condition of sale reduces the potential vapor intrusion into the LDC buildings by providing clean soils. Moreover, vapor intrusion will be accounted for in the LDC foundation designs.

A Site Management/Health and Safety Plan will be developed for submittal to the San Francisco Bay RWQCB for review prior to commencing LDC construction to ensure public health and the work safety is protected. The Site Management Plan will also propose measures to reduce the potential of the foundations/soil improvements resulting in a downward migration of the contaminated groundwater plume. It is likely that the construction of LDC will require a monitoring well to be removed and relocated to another location onsite. These activities will be coordinated with Siliconix and the San Francisco Bay RWQCB to evaluate any proposed actions regarding remediation well relocation.

3.9.4 Regulatory Setting

Federal, state, and local regulations govern the use, transport, and storage of hazardous materials. Further, a Hazardous Materials Business Plan will be required for any facility that 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 offsite land uses, in the event of an accidental release.

Siliconix, the previous owner of the project site, is subject to an existing order of the San Francisco Bay RWQCB, Order NO. R2-2008-0058, *Adoption of Final Site Cleanup Requirements and Rescission of Orders Nos. 89-027 and 91-024*. The order requires implementation of a soil and groundwater investigation and remedial plan to manage, monitor, and remediate historical contamination issues at the site. Siliconix continues to be responsible for the remediation of the site and to own/operate the onsite

treatment systems. The LDC will be constructed and operated in a manner that is consistent with site remediation activities.

3.9.5 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. During the construction phase of the project heavy equipment will be used for grading, excavation, ground improvement, and construction. The equipment will require fueling and maintenance, which could potentially result in spills of petroleum products or hazardous materials in construction staging areas. However, the likelihood of incidental spills would be minor, and the project would implement standard best management practices included in a National Pollutant Discharge Elimination System-mandated Stormwater Pollution Prevention Plan during construction to minimize this potential. Relevant BMPs would include designated fueling and maintenance areas removed from drainages and supplied with temporary spill containment equipment, such as absorbent booms and pads, and petroleum waste disposal containers. Further discussion regarding the Stormwater Pollution Prevention Plan may be found in Section 3.10, Hydrology and Water Quality. Other hazardous materials that may be used during construction include paints, adhesives, cleaners, solvents, welding gases, spent lead acid batteries and used waste lubricants.

The LDC design does not require deep foundations. Onsite soil conditions require ground improvements in the form of densification techniques. The densification technique(s) involve the vertical/horizontal compaction of soils beneath the foundations to reduce the total settlement to acceptable levels. The intent of the ground improvement design would be to increase the density of the onsite soils and compressible clays by laterally displacing and/or densifying the existing in-place soils. Workers will be protected by the development of the Site Management/Health and Safety plan. The previous property owner, in conjunction with the San Francisco Bay RWQCB will determine the location and design of the replacement monitoring well.

During the operational phase of the project, diesel fuel for use by the standby generators and valve sealed lead acid batteries in the uninterruptable power supply will be used/stored onsite. The diesel fuel will be stored in double-walled belly tanks underneath each generator and will be used only for emergencies, testing and maintenance purposes. Testing and maintenance will be limited to no more than 50 hours of operation per generator annually (and more realistically 15 to 20 hours annually). Therefore, deliveries of diesel fuel to refill the belly tanks will be infrequent. As a result, the project will not create a significant hazard to the public through the routine transport, use, or disposal of hazardous materials at the site and no reportable quantities of acutely or extremely hazardous materials will be transported, stored, or used at the site.

The valve-sealed lead acid batteries will be located in each data center building's electrical room. The batteries are maintenance-free and require no additional electrolyte. Once the batteries have reached their useful life, they are replaced, and the spent battery is returned for recycling. As a result, the project would not create a significant impact on the environment.

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 project will include 56 standby generators, each with a storage capacity of 10,300 gallons of diesel fuel. The generator storage tanks are double-walled and will be monitored electronically for leakages. In the highly unlikely event of an accidental release of diesel fuel, the storage tanks' electronic monitoring system would trigger an alarm in the LDC security office alerting personnel of a detected leak.

Diesel fuel delivery will occur on an infrequent, as-needed basis via a tanker truck. Diesel delivery trucks will follow standard spill prevention practices, such as using wheel chocks to secure the truck in a stationary position until disconnection of the transfer lines is complete. If a pump hose should break during fueling, an emergency pump shut-off will be activated. In addition, catch basins located

at each generator's fill port will be closed during fueling events to prevent the escape of any small spills. As a result of the engineered controls, there is a less than significant impact that an accidental release of diesel fuel will create a significant hazard to the public or environment.

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. The nearest school is Montague Elementary School, located approximately 1.09 miles to the east of the LDC, and there are no schools within a 0.25-mile radius of the LDC. Therefore, there will be no hazardous materials emitted from the site capable of creating offsite impacts at a nearby existing or proposed school, and there will be no impact.

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?

Less Than Significant Impact. A review of the State of California Hazardous Waste and Substances Site List (also known as the Cortese List) was conducted. The project site is a Cortese Listed site, as are the adjacent parcels to the north and east (San Francisco Bay RWQCB, 2019). The project is included on this list compiled pursuant to Government Code Section 65962.5 and is under Final Cleanup Order with the San Francisco Bay RWQCB. The construction of the site will undergo San Francisco Bay RWQCB review prior to commencement of construction to ensure public health and the environment are protected. Therefore, the construction and operation of the LDC is not expected to create a significant hazard to the public or the environment.

e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard or excessive noise for people residing or working in the project area?

No Impact. The project site is located approximately 1.5 miles northwest of the Norman Y. Mineta San Jose International Airport. The project is located outside of any designated airport safety zones or airport noise contours (SCCALUC, 2016). Therefore, the project would have no impact as a result in a safety hazard or result in excessive noise impacts for people residing or working in the project area.

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

No Impact. As described in Section 3.15, Public Services, the City of Santa Clara Fire Department will serve the project site. The project does not include any changes to the existing public roadways that provide emergency access to the site. Therefore, the project would not impair the implementation of, or physically interfere with any adopted emergency response plan or emergency evacuation plan and no impact would occur.

g) Would the project expose people or structures, either directly or indirectly, to a significant risk of loss, injury, or death involving wildland fires?

No Impact. As described in Section 3.20, Wildfire, this site is clear of substantial vegetation and is surrounded by commercial and industrial land uses. The City of Santa Clara is not identified to be within a State of California Fire Hazard Severity Zone (Cal Fire, 2019) at the wildland and urban interface. As a result, there will be no risk of exposing people or structures to a significant risk of loss, injury or death involving wildland fires.

Previously Identified Mitigation Measures: None.

New Proposed Mitigation Measures: None.

3.9.6 References

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3.10 Hydrology and Water Quality

Would the project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?	☐	☐	☒	☐
b) Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?	☐	☐	☒	☐
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or through the addition of impervious surfaces, in a manner which would:	☐	☐	☒	☐
(i) Result in substantial erosion or siltation on- or off-site;	☐	☐	☒	☐
(ii) Substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or offsite;	☐	☐	☒	☐
(iii) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or	☐	☐	☒	☐
(iv) Impede or redirect flood floods?	☐	☐	☐	☒
d) In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?	☐	☐	☒	☐
e) Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?	☐	☐	☐	☒

Environmental checklist established by CEQA Guidelines, Appendix G

3.10.1 Setting

3.10.1.1 Surface Water

The Laurelwood Data Center (LDC) is in the San Tomas Aquino Creek watershed, which is part of the West Valley Watersheds (SCVWD, 2016a). The site is fully developed, with surface water runoff flowing offsite either through surface drainage or underground pipes. The City of Santa Clara (City) owns and maintains the municipal storm drainage system in the project area, and site drainage connects to the municipal system via a connection on Juliette Lane. All site runoff ultimately drains into San Francisco Bay via urban creeks. See additional discussion of the storm drainage system in Section 3.19, Utilities and Service Systems.

Water quality in urban creeks is influenced by pollutants from urban stormwater runoff, such as metals, pesticides and herbicides, oil and grease, animal waste, and trash. As discussed in this section, several regulatory programs have been developed to protect the environmental from urban stormwater runoff pollution.

3.10.1.2 Groundwater

The site is in the Santa Clara Valley groundwater subbasin, which covers a surface area of 297 square miles and forms a northwest-trending, elongated valley bounded by the Santa Cruz Mountains to the west and the Diablo Range to the east. Recharge generally occurs along the margins and in the southern basin area, where coarse-grained sediments predominate. The LDC is located over a confined area, where a laterally extensive, low-permeability barrier (an aquitard) restricts the vertical flow of groundwater (SCVWD, 2016b). This protects the underlying groundwater from shallow contamination.

The groundwater basin provides water storage for municipal and other uses. Groundwater quality is typically very good, and most public water supply wells do not require any treatment beyond disinfection (SCVWD, 2016b). The City operates 26 groundwater wells and, in 2015, groundwater made up approximately two-thirds of the city's potable water supply (City of Santa Clara, 2016). The LDC project site, however, is in an area designed primarily for surface water deliveries from the San Francisco Public Utilities Commission Hetch Hetchy system. For additional discussion of water supplies, see Section 3.19, Utilities and Service Systems.

The LDC project site is fully developed, and therefore there is very little percolation to groundwater. In other words, the site does not contribute to groundwater recharge. For additional discussion about depth to groundwater and the site groundwater remediation program, see Section 3.7, Geology, TRC Solutions' 2018 *Preliminary Geotechnical Investigation*, and Section 3.9, Hazards and Hazardous Materials.

3.10.1.3 Flooding

The project site is located within flood zone "X", which is defined as areas of reduced flood risk due to levees (FEMA, 2009). The site is not within an area mapped as vulnerable to sea level rise (CalAdapt, 2019) or tsunami risk (California Emergency Management Agency, et al., 2009).

The project site is within the inundation zones of two upstream reservoirs. Lexington Reservoir and James J. Lenihan Dam are located on Los Gatos Creek approximately 15 miles upstream. The dam and reservoir are operated by Santa Clara Valley Water District (SCVWD). The Lenihan Dam Flood Inundation Map shows that dam failure would result in flooding at the project site (SCVWD, 2016c); however, recent investigations by the SCVWD Dam Safety Program concluded that no seismic remediation measures are necessary (Terra/GeoPentech, 2012).

Anderson Dam and Reservoir are located on Coyote Creek approximately 25 miles upstream of the project site. The dam and reservoir are operated by SCVWD. The Anderson Dam Flood Inundation Map shows that dam failure could result in flooding at the project site (SCVWD, 2016d). Seismic remediation is needed, and SCVWD is currently undertaking the Anderson Dam Seismic Retrofit Project. Construction of the retrofit project is scheduled to be complete in 2027 (SCVWD, 2018).

3.10.2 Regulatory Background

3.10.2.1 Federal Clean Water Act and State Porter-Cologne Water Quality Control Act – Municipal Stormwater Discharges

The primary laws protecting water quality are the federal Clean Water Act and the California Porter-Cologne Water Quality Control Act. The Clean Water Act is the main federal law governing surface water pollution. In California, the State Water Resources Control Board (State Water Board) administers the Clean Water Act water pollution control and water quality functions. The State Water Board provides policy guidance and delegates authority to nine regional boards that regulate surface water and groundwater quality within their respective regions, including planning, permitting, and enforcement activities. The San Francisco Bay Regional Water Quality Control Board (RWQCB) administers the federal Clean Water Act and state Porter-Cologne Water Quality Control Act in the project area.

Stormwater runoff from urban impervious surfaces and roadways can overwhelm drainage systems and pollute streams, bays, and the ocean. Section 402 of the federal Clean Water Act prohibits the discharge

of any pollutant to waters of the United States from a point source, unless that discharge is authorized by a National Pollutant Discharge Elimination System (NPDES) permit. Point sources include stormwater discharges from discrete conveyances such as pipes, storm drains, or manmade ditches and channels. Each regional board is responsible for addressing region-wide water quality concerns by adopting, monitoring compliance with, and enforcing NPDES permits.

Under its Clean Water Act and Porter-Cologne Water Quality Control Act authority, the San Francisco Bay RWQCB issued a Municipal Regional Stormwater NPDES Permit (Municipal Regional Permit) to 76 Bay Area municipalities, including the City. The permit contains requirements for controlling the potential impacts of land development on stormwater quality and flow. To meet the permit requirements, projects must include appropriate site design measures, pollutant source controls, and treatment control measures, with a verification program to ensure the proper operation and maintenance of treatment control measures. The permit also requires that projects producing increases in runoff peak flows, volumes, and durations that may cause erosion in downstream receiving water must also include hydromodification control measures but specifies exemptions for infill projects in highly urbanized areas.

3.10.2.2 Federal Clean Water Act and State Porter-Cologne Water Quality Control Act – Construction Site Discharges

Under the federal Clean Water Act, discharge of stormwater from construction sites must comply with the conditions of an NPDES permit. The State Water Board has adopted a statewide General Permit for Stormwater Discharges Associated with Construction and Land Disturbance Activities (Construction General Permit) that applies to projects resulting in 1 or more acres of soil disturbance. For projects disturbing more than 1 acre of soil, a construction Stormwater Pollution Prevention Plan (SWPPP) is required that specifies site management activities to be implemented during site development. These management activities include construction stormwater best management practices, erosion and sedimentation controls, dewatering, runoff controls, and construction equipment maintenance. The San Francisco Bay RWQCB requires a Notice of Intent to be filed prior to any stormwater discharge from construction activities, and that the SWPPP be implemented and maintained onsite.

3.10.2.3 Sustainable Groundwater Management Act

The Sustainable Groundwater Management Act (SGMA) was enacted in 2014, establishing a new structure for locally managing California's groundwater. SGMA provides for the establishment of Groundwater Sustainability Agencies for designated groundwater basins or subbasins, and the development of Groundwater Sustainability Plans for most groundwater basins. Under SGMA, a groundwater basin would be managed to avoid undesirable results such as lowering of groundwater levels, reduction of groundwater storage, seawater intrusion, degraded water quality, land subsidence, and depletion of interconnected surface water. SGMA requires the adoption of Groundwater Sustainability Plans by 2022 (or earlier for basins with critical overdraft), and sustainable groundwater operations must be achieved within 20 years after completing the plan. If a functionally equivalent groundwater plan has already been developed, then a Groundwater Sustainability Agency may submit that plan as an alternative to a Groundwater Sustainability Plan.

The SCVWD is the SGMA Groundwater Sustainability Agency for the Santa Clara Valley groundwater subbasin and developed its Groundwater Management Plan for the Santa Clara and Llagas Subbasin (SCVWD, 2016b) as functionally equivalent to a Groundwater Sustainability Plan.

3.10.3 Environmental Impacts and Mitigation Measures

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

Less Than Significant Impact. The Municipal Regional Permit requires project include appropriate site design measures, pollutant source controls, and treatment control measures, and regulates hydromodification from certain new development and redevelopment projects. To implement the Municipal Regional Permit, an association of 13 cities and towns (including the City of Santa Clara),

the County of Santa Clara, and the SCVWD formed the Santa Clara Valley Urban Runoff Pollution Prevention Program (SCVURPPP). Impacts to urban runoff are evaluated in terms of consistency with the SCVURPPP.

The SCVURPPP developed the Stormwater Handbook to address the permit's site design measures, pollutant source controls, and treatment control measures (SCVURPPP, 2016). To comply with the Stormwater Handbook, the project includes 11 small bio-swales – site design features to detain and treat site runoff before it discharges into the municipal system. During the City's detailed design review process, the City will review the proposed site design measures for consistency with the Stormwater Handbook. As required by the Stormwater Handbook, the bio-swales and any other required measures must be installed, operated, and maintained by qualified personnel, including maintenance and inspection record-keeping.

The SCVURPPP developed the Hydromodification Management Plan to address the permit's hydromodification requirements, including developing the permit's exemption standards for infill projects in highly developed watersheds (SCVURPPP, 2005). The Hydromodification Management Plan includes maps of exempt areas, based on permit criteria including areas with existing impervious cover of 65 percent or more. As shown in Hydromodification Management Plan, the project site is in an exempt area; therefore, it is not subject to hydromodification requirements.

In addition to complying with the Municipal Regional Permit, the project is subject to construction-related storm water permit requirements. Prior to any ground-disturbing construction activity, the project must comply with the Construction General Permit, which includes filing a Notice of Intent with the San Francisco Bay RWQCB, coordinating with the City, and preparing and implementing a SWPPP. The SWPPP will include best management practices for stormwater quality control, including soil stabilization practices, sediment control practices, and wind erosion control practices. When construction is complete, the project will file a Notice of Termination with the San Francisco Bay RWQCB and City, documenting that all elements to the SWPPP have been implemented.

By complying with existing permits, runoff from the project site would not violate the applicable waste discharge requirements or otherwise contribute to the degradation of storm water runoff quality.

b) Would the project substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?

Less Than Significant Impact. The site is currently covered with impervious surfaces, and therefore does not contribute to groundwater recharge. The project will result in no change to this condition. In addition, the site is not located in a groundwater recharge area (SCVWD, 2016b).

The Groundwater Management Plan (SCVWD, 2016b) describes existing and potential actions to achieve basin sustainability goals and ensure continued sustainable groundwater management. The plan does not require specific actions related to redevelopment of a developed site, such as the Laurelwood Data Center site. Rather, the plan references compliance with the Municipal Regional Permit as the primary means of protecting groundwater supplies from the adverse effects of stormwater runoff. As discussed, the project will comply with the Municipal Regional Permit; therefore, the project will not impede sustainable groundwater management by interfering substantially with groundwater recharge.

For the reasons discussed in Section 3.19, Utilities and Service Systems, water supply impacts will be less than significant. Therefore, the project will not impede sustainable groundwater management by substantially decreasing groundwater supplies.

a) Would the project substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner, which would:

i. Result in substantial erosion or siltation on- or off-site?

Less Than Significant Impact. See (a) above.

ii. Substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site?

iii. *Less Than Significant Impact*. See (a) above.

iv. 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?

Less Than Significant Impact. See (a) above.

v. Impede or redirect flood flows?

No Impact. The project is not within a flood hazard zone; therefore, the project would not impede or redirect flood flows.

b) Is the project in flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?

Less than Significant Impact. The site is in an area of reduced flood risk due to levees, is not in a tsunami inundation zone, and is not in an area mapped as vulnerable to sea level rise. Risk of inundation from dam failure is being managed by the SCVWD Dam Safety Program. The site is not located near a large body of water; therefore, there is no risk from seiche waves. Overall, there is little risk that inundation of the site could release pollutants into the environment. For additional analysis of the risk of releasing pollutants into the environment, see Section 3.9, Hazards and Hazardous Materials.

c) Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?

No Impact. As described in (a) above, the project will comply with the Municipal Regional Permit and Construction General Permit. As described in (b) above, the project will comply with the Groundwater Management Plan. The project will not conflict with or obstruct implementation of a water quality control plan or sustainable groundwater plan; therefore, there will be no impact.

Previously Identified Mitigation Measures: None.

New Proposed Mitigation Measures: None.

3.10.4 References

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3.11 Land Use and Planning

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

Environmental checklist established by CEQA Guidelines, Appendix G.

3.11.1 Setting

3.11.1.1 Site and Surrounding Land Uses

The approximately 12-acre Laurelwood Data Center (LDC) project site is in an existing industrial area of the city of Santa Clara (City). The site is composed of a single parcel that was previously developed with industrial warehouse, manufacturing, and office facility uses, and a paved parking area. The project site has been developed since the late 1960s and the existing facilities are currently being demolished by the former owner as part of the sales agreement. The project site is bounded by Juliette Lane and other industrial and commercial properties to the east, US-101 to the south, a parking lot to the west, and other industrial and commercial properties to the north.

3.11.1.2 Santa Clara General Plan Land Use Designation and Zoning

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 Low Intensity Office/Research and Development (R&D), as shown on the land use diagrams for the General Plan's three planning phases. The Low Intensity Office/R&D designation "is intended for campus-like office development that includes office and R&D, as well as medical facilities and free-standing data centers." Figure 3.11-1 identifies the General Plan land use of the site and surrounding area. The project site is zoned MP (Planned Industrial) (Title 18, Chapter 18.46 of the City's Zoning Code). This zoning district is intended to "provide an environment exclusively for and conducive to the development and protection of modern large-scale administrative facilities, research institutions, and specialized manufacturing organizations, all of a non-nuisance type." Permitted uses include light manufacturing and activity that, in the opinion of the Planning Commission, are similar in character to other permitted uses and not more detrimental to the health, safety, and general welfare of the neighborhood than any permitted use. Figure 3.11-2 identifies the zoning of the site and surrounding area.

The maximum permitted building height in the MP zone is 70 feet. This zoning district also requires that buildings, including accessory buildings, not cover a total of more than 50 percent of the area of any lot and that each lot shall have a minimum of 25 percent developed into and permanently maintained as open landscaped area.

3.11.1.3 Applicable Plans, Policies, and Regulations

Goals and policies to guide land use development within the City are established by the Santa Clara General Plan. Applicable Santa Clara General Plan policies are presented in Table 3.11-1, along with a discussion of project consistency.

3.11.2 Environmental Impacts and Mitigation Measures

a) Would the project physically divide an established community?

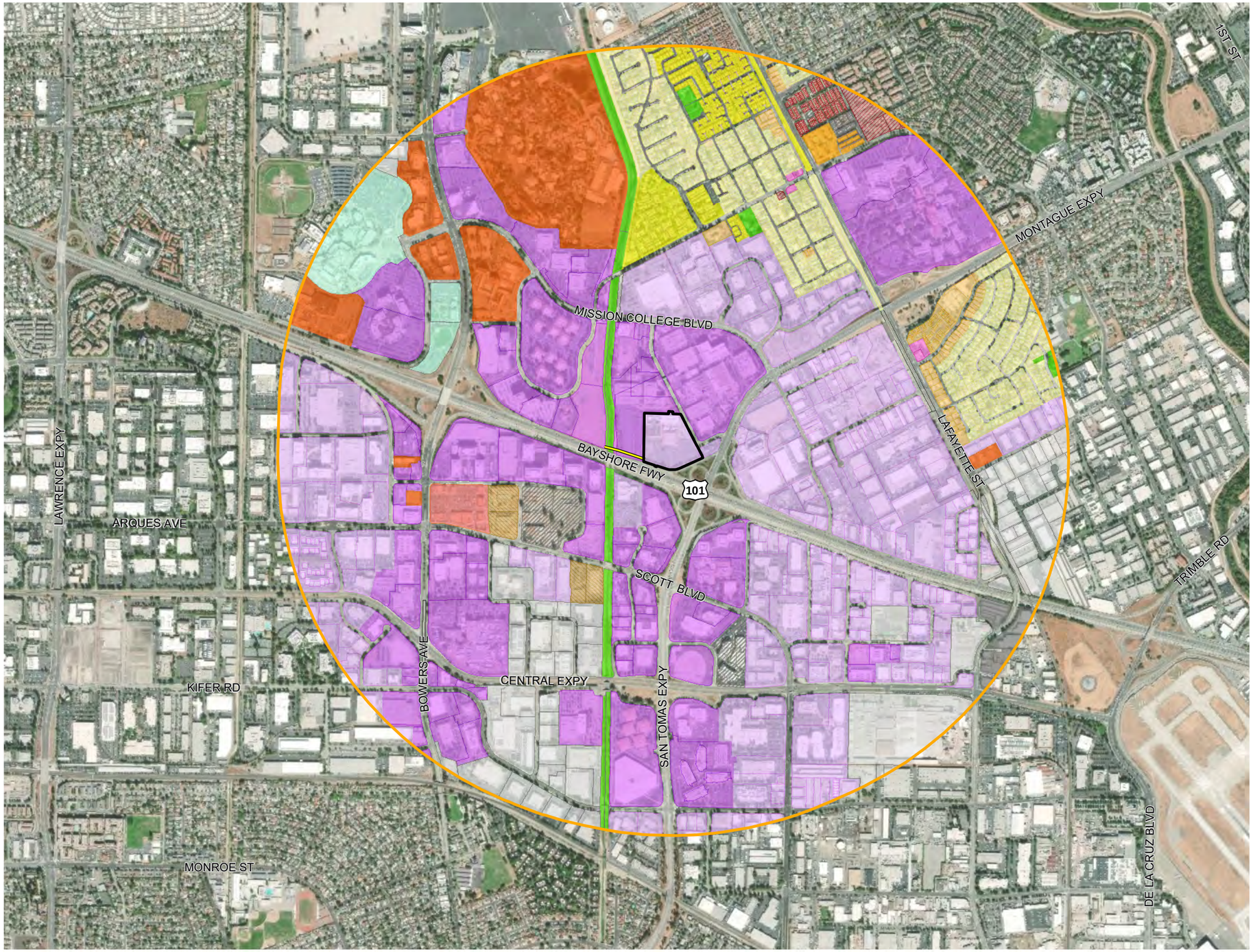
No Impact. The project will not change the project boundaries or involve construction of new offsite elements that could divide the community; therefore, no impact will occur.

b) Would the project cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?

Less Than Significant Impact. The data center buildings from ground level to rooftop will be 87.5 feet above ground surface. The project will require 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). Additionally, the LDC is anticipated to have 40.5 percent lot coverage by buildings and the Silicon Valley Power substation, and approximately 26 percent lot coverage by planned landscaping. This lot coverage is consistent with the requirements of the MP zone, which requires a maximum coverage of 50 percent by buildings, and a minimum of 25 percent as open landscaped area. Further, given that the Low Intensity Office/R&D land use designation is intended for developments such as freestanding data centers, the project will be consistent with General Plan land use policies (City of Santa Clara, 2010) and Zoning Code.

It is anticipated that the granting of the minor modification(s) required by the zoning administrator for building height will occur during building permit review. The Applicant is currently working with the City's zoning administrator on this minor modification. With approval of the zoning administrator modification, the project will be consistent with the existing zoning designation for the project site, and the impact will be less than significant.

Project consistency with Santa Clara General Plan Land Use Policies is shown in Table 3.11-1.



LEGEND

- Laurelwood Data Center
- 1 Mile Radius from Project
- Electrical Supply Line

City of Santa Clara General Plan

- Very Low Density Residential
- Low Density Residential
- Medium Density Residential
- High Density Residential
- Neighborhood Commercial
- Community Commercial
- Regional Commercial
- Neighborhood Mixed Use
- Regional Mixed Use
- Light Industrial
- Heavy Industrial
- Low Intensity Office / R&D
- High Intensity Office / R&D
- Public / Quasi Public
- Parks / Open Space
- Right of Way
- Not Defined

Source:
City of Santa Clara
ESRI

N

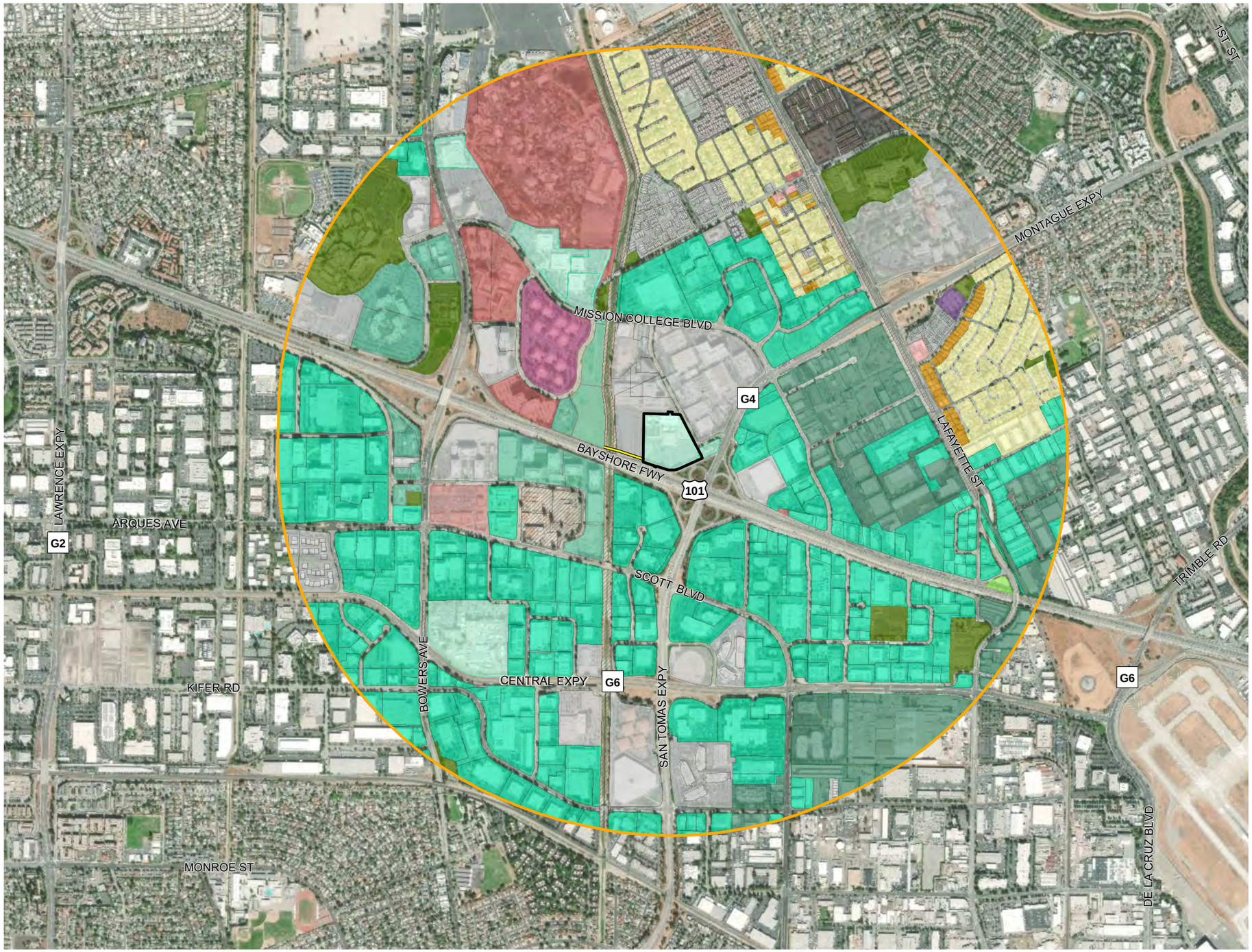
0 1,500 3,000

Approximate scale in feet

Figure 3.11-1
General Plan Designations
Laurelwood Data Center
Santa Clara, California

JACOBS

\\BROOKSIDEFILES\GIS_SHARE\ENBG\00_PROJ\E\EDGECORE\GIS\MAPS\REPORT\FIG3_11-1_LANDUSE_GP_1MILE.MXD 2/15/2019 2:32:12 PM



LEGEND

- Laurelwood Data Center
- 1 Mile Radius from Project
- Electrical Supply Line

City of Santa Clara Zoning

- CP - Commercial Park
- R1-6L - Single Family
- R2-7L Duplex
- R3-18D - Low Density Multiple Dwelling
- R3-25D - Moderate Density Multiple Dwelling
- CN - Neighborhood Commercial
- CP(PD) - Commercial Park & Planned Development
- CT - Thoroughfare Commercial
- OG - General Office
- OA - Professional and Administrative Office
- MP - Planned Industrial
- ML - Light Industrial
- MH - Heavy Industrial
- PD - Planned Development
- PD-MC - Planned Development - Master Community
- A - Agricultural
- B - Public or Quasi Public
- Not Defined

Source:
City of Santa Clara
ESRI

N

0 1,500 3,000

Approximate scale in feet

Figure 3.11-2
Zoning Plan Designations
Laurelwood Data Center
Santa Clara, California

JACOBS

\\BROOKSIDEFILES\GIS_SHARE\ENBG\00_PROJ\E\EDGECORE\GIS\MAPS\REPORT\FIG3_11-2_LANDUSE_ZONING_1MILE.MXD 2/18/2019 9:24:59 AM

Table 3.11-1. Project Consistency with Santa Clara General Plan Land Use Policies

Land Use Policy	Project Consistency
Land Use	
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 data center structures will consist primarily of a smooth stucco finish in varying shades of gray. Each of the data center structures will have a storefront that will be constructed of aluminum and glass. The enclosures for the generators will consist of powder-coated metal panels in grey. The design of the proposed buildings incorporates the use of grey and silver tones and varied textures, along with accent elements such as an exposed stair/elevator tower. The design of the project will assist in creating visual interest and reduce potential perceived height and bulk of the structures by breaking up the building's 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 will redevelop a vacant but previously developed property that previously consisted of electronic component manufacturing and office space.
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 proposed buildings will be similar in scale to the surrounding commercial and industrial structures. The façades of the proposed buildings will be different than but visually similar to the surrounding land uses, which primarily include industrial and commercial structures that use concrete and glass with blue accents. The proposed buildings and surface parking lot design will be compatible with the visual character of the surrounding area. Overall, the project will be generally consistent with adjacent industrial and commercial development in terms of visual character and quality.
5.3.5-P5: Allow the development of Office/R&D uses in varied configurations and intensities to meet the needs of existing and new businesses.	Consistent. The project includes the construction of two data center buildings on a site that is designated as Light Office/R&D under the Santa Clara General Plan.
Air Quality	
5.10.2– P3: Encourage implementation of technological advances that minimize public health hazards and reduce the generation of air pollutants.	Consistent. The project will include four electrical vehicle charging stations that would serve nine electrical vehicle parking spots.
5.10.2-P4: Encourage measures to reduce greenhouse gas emissions to reach 30 percent below 1990 levels by 2020.	Consistent. Water conservation and energy efficiency measures included in the project would reduce greenhouse gas emissions associated with the generation of electricity.
5.10.2–P6: Require "Best Management Practices" for construction dust abatement.	Consistent. In accordance with Section 3.3, Air Quality, the project Applicant has included in the project design construction fugitive dust control measures that are consistent with Best Management Practices.
Energy	
5.10.3-P1: Promote the use of renewable energy resources, conservation, and recycling programs.	Consistent. The project would use 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 buildings will limit potable water consumption. Furthermore, the project would use 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.	

Table 3.11-1. Project Consistency with Santa Clara General Plan Land Use Policies

Land Use Policy	Project Consistency
Water	
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 37 new trees will be as part of project design. In addition, shrubs and ground cover would be planted throughout the project site. Native and low-water consumption plant species have been selected to reduce water consumption.
Noise	
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. Noise from mechanical equipment (for example, backup generators) will not exceed the City's 70-decibel 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.	

Previously Identified Mitigation Measures: None.

New Proposed Mitigation Measures: None.

3.11.3 References

City of Santa Clara. 2010. *City of Santa Clara 2010–2035 General Plan*. Community Development Department, Planning Division. Accessed January 31, 2019. http://santaclaraca.gov/government/departments/community-development/planning-division/general-plan.

3.12 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.

3.12.1 Setting

3.12.1.1 Mineral Resources

The project site, located within the city of Santa Clara, is in an area identified as Mineral Resource Zone 1 (MRZ-1) for aggregate materials by the State of California (DOC, 1996). The MRZ-1 designation identifies the site as an area where geologic information indicates no significant mineral resources are present. The project site and surrounding area are not known to support significant mineral resources of any type. In addition, the Division of Mine Reclamation's list of mines, referred to as the AB 3098 List and regulated under the Surface Mining and Reclamation Act (SMARA), does not include any mines within the city of Santa Clara (DOC, 2016).

3.12.1.1.1 Regulatory Setting

There are no regulatory approvals or permits required to comply with mineral resources related laws, ordinances, regulations, or standards.

3.12.2 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. Therefore, the project would not result in the loss of availability of a known mineral resource.

b) Would the project result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan?

No Impact. The project site is in a developed urban area and does not contain any known or designated mineral resources. Therefore, the project would not result in the loss of availability of a locally important mineral resource recovery site.

Previously Identified Mitigation Measures: None.

New Proposed Mitigation Measures: None.

3.12.3 References

California Department of Conservation (DOC). 1996. *Revised Mineral Land Classification Map. Aggregate Resources Only. South San Francisco Bay Production-Consumption Region. Mountain View Quadrangle*. Open-File Report 96-03. Accessed February 4, 2019. ftp://ftp.consrv.ca.gov/pub/dmg/pubs/ofr/OFR_96-03/OFR_96-03_Plate5.pdf.

California Department of Conservation (DOC). 2016. AB 3098 List. Accessed February 4, 2019. https://www.conservation.ca.gov/dmr/SMARA%20Mines/ab_3098_list.

3.13 Noise

Would the project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	☐	☐	☒	☐
b) Generation of excessive groundborne vibration or groundborne noise levels?	☐	☐	☒	☐
c) For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?	☐	☐	☒	☐

Environmental checklist established by CEQA Guidelines, Appendix G.

3.13.1 Setting

MECP1 Santa Clara 1, LLC (Applicant) proposes to construct and operate the Laurelwood Data Center (LDC) in Santa Clara, California (see Figure 3.17-1). The LDC site is approximately 12 acres (521,798 square feet) and is bounded to the south by US-101, to the west by a covered parking lot and the San Tomas Aquino Creek and Trail, to the east by Juliette Lane and commercial/industrial uses, and to the north by commercial/industrial uses. The site includes a 30-foot public utility easement along the southern edge of the parcel that also includes parking and landscaping.

The project site is designated as Low Intensity Office/Research and Development under the *City of Santa Clara 2010-2035 General Plan* (2014) and is zoned as MP - Planned Industrial. Surrounding zoning designations include PD - Planned Development, MP - Planned Industrial, and ML - Light Industrial. The nearest noise-sensitive receptor (property designated residential land use) is located approximately 0.5 mile north of the project site boundary. The nearest airport, the Norman Y. Mineta San Jose International Airport, is located approximately 1.4 miles to the southeast.

Prominent existing noise sources near the project site include automobile traffic along US-101 (approximately 40 feet to the south), automobile traffic on Montague Expressway (approximately 40 feet to the southeast), industrial and commercial land uses to the north and east, and activity associated with the Norman Y. Mineta San Jose International Airport, located approximately 1.4 miles to the southeast.

3.13.2 Technical Background

This section provides background information on noise and vibration, particularly, how each is characterized and measured.

3.13.2.1 Noise Background

Noise can be described as undesired sound. Sound is transmitted by pressure waves over a medium, such as air or water. The decibel (dB) scale is a logarithmic scale used to quantify sound intensity. However, the decibel scale does not accurately describe how a sound's intensity is perceived by human hearing. The human ear is not equally sensitive to all frequencies, 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 3.13-1 summarizes typical A-weighted sound levels for different noise sources.

In general, human sound perception cannot detect a change in sound level by 1 dB. A change of sound level by 3 dB can be detected, a change of 5 dB is clearly detected, and a change of 10 dB is perceived as doubling or halving (City of Santa Clara, 2014).

Different types of measurements are used to characterize the time-specific 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. Atmospheric conditions including wind, temperature gradients, and humidity can change how sound propagates over large distances. 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 (FTA, 2006).

Table 3.13-1. Typical A-Weighted Sound Levels

Common Outdoor Activities	Noise Level (dBA)	Common Indoor Activities
	110	Rock band
Jet flyover at 1,000 feet	105	
	100	
Gas lawnmower at 3 feet	95	
	90	
Diesel truck at 50 feet at 50 miles per hour	85	Food blender at 3 feet
	80	Garbage disposal at 3 feet
Noisy urban area, daytime	75	
Gas lawnmower at 100 feet	70	Vacuum cleaner at 10 feet
Commercial area	65	Normal speech at 3 feet
Heavy traffic at 300 feet	60	
	55	Large business office
Quiet urban daytime	50	
	45	
Quiet urban nighttime	40	Theater, large conference room (background)
Quiet suburban nighttime	35	
	30	Library
Quiet rural nighttime	25	Bedroom at night, concert hall (background)
	20	
	15	Broadcast/recording studio

Source: Caltrans, 2013a

3.13.2.2 Vibration Background

Most agencies typically reference the Federal Transit Administration (FTA) guidance manual criteria for vibration damage (2006). In addition to the FTA guidance manual, the Federal Railroad Administration (FRA) (2005 and 2012) provides thresholds for various land uses. Both the FTA and FRA provide a methodology for the assessment for potential vibration resulting from rail operations, in addition to potential vibrations from construction activities. Caltrans has also published the *Transportation and Construction Vibration Guidance Manual* (2013b). Caltrans has not established a standard for vibration but rather presents a range of potential criteria. For continuous vibration from traffic, a peak particle velocity (PPV) of 0.2 inches/second is indicated in the Caltrans guidance to be "Annoying" but not "Unpleasant" and a level of 0.1 inches/second is indicated as "Begins to Annoy."

The criteria for damage from construction activities was established by FTA and is reproduced in Table 3.13-2.

Table 3.13-2. FTA Construction Vibration Damage Criteria

Building Category	PPV (inches/second)	Approximate L_v[a]
I. Reinforced concrete, steel, or timber (no plaster)	0.5	102
II. Engineered concrete and masonry (no plaster)	0.3	98
III. Non-engineered timber and masonry buildings	0.2	94
IV. Buildings extremely susceptible to vibration damage	0.12	90

Source: FTA, 2006.

[a] RMS vibration velocity level in VdB relative to 1 micro-inch/second.

RMS = root-mean-square

VdB = vibration decibels

The vibration from various construction equipment was established by FTA and is reproduced as Table 3.13-3.

Table 3.13-3. FTA Vibration Source Levels for Construction Equipment[a]

Equipment	PPV at 25 ft (inches/second)	Approximate L_v at 25 feet
Vibratory Roller	0.210	94
Hoe Ram	0.089	87
Large bulldozer	0.089	87
Calsson drilling	0.089	87
Loaded trucks	0.076	86
Jackhammer	0.035	79
Small bulldozer	0.003	58

Source: FTA, 2006, Table 12-2.

[a] RMS velocity in decibels (VdB) relative to 1 micro-inch/second.

Pile driving is the construction activity with the greatest likelihood to create perceptible offsite vibrations, but is not anticipated for the project. Only a vibratory roller is indicated in Table 3.13-3 to slightly exceed the 0.2 inches/second guideline when operated within 25 feet of a Type III-structure and would rapidly dissipate to below this guideline at 50 feet. Regardless of the criteria used, the potential for damage from construction is limited to areas very close (onsite) to the activity.

3.13.3 Regulatory Background

This section outlines the regulatory constraints on noise and vibration that would be applied to the project.

3.13.3.1 City of Santa Clara 2010-2035 General Plan

The *City of Santa Clara 2010-2035 General Plan* (2014) describes the levels of exterior noise that are considered compatible for various land uses to guide land use planning decisions. The Santa Clara Municipal Code, discussed in Section 3.13.3.2, establishes more specific sound limits.

For residential uses, exterior noise levels of 55 dBA CNEL are considered compatible, while levels of 55 to 70 dBA CNEL are considered conditionally compatible with the implementation of mitigation measures to reduce interior noise to 45 dBA. Noise levels above 70 dBA CNEL are considered incompatible for residential land uses. For commercial uses, exterior noise levels of 65 dBA CNEL are considered compatible, while levels of 65 to 75 dBA CNEL are considered conditionally compatible with the implementation of mitigation measures to reduce interior noise to 45 dBA. Noise levels above 75 dBA CNEL are considered incompatible for residential land uses. For industrial uses, exterior noise levels of 70 dBA CNEL are considered compatible, while levels of 70 to 80 dBA CNEL are considered conditionally compatible with the implementation of mitigation measures to reduce interior noise to 45 dBA. Noise levels above 80 dBA CNEL are considered incompatible for residential land uses.

3.13.3.2 City of Santa Clara Municipal Code

Chapter 9.10 of the City of Santa Clara (City) Municipal Code regulates noise and vibration for the project. The noise ordinance is intended to protect the public welfare from unnecessary, excessive, and unreasonable noise and vibration from fixed sources in the community. Table 3.13-4 outlines the applicable Santa Clara Municipal Code sections, as related to noise and vibration, for the project.

3.13.3.3 Santa Clara County Comprehensive Land Use Plan for Norman Y. Mineta San Jose International Airport

The Santa Clara County Airport Land Use Commission has an adopted Comprehensive Land Use Plan (CLUP) for the Norman Y. Mineta San Jose International Airport (Windus, 2011). While the project site is within the airport influence area, it is outside the Noise Restriction Areas identified on the 2022 Aircraft Noise Contours in the CLUP, including the 65-dB CNEL contour boundary. Under the CLUP land use compatibility noise policies, industrial uses are compatible with noise environments from aircraft activity that are 70 CNEL or less. Office buildings, business commercial, and retail land uses are compatible with noise environments from aircraft activity that are 65 CNEL or less. The project does not represent a new noise sensitive land use and is consistent with the CLUP's noise compatibility policies.

3.13.4 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 (2014) defines a change of 3 dB as noticeable and 5 dB as distinct. Typically, project generated noise level increases of 3 dBA or greater are considered potentially significant where resulting exterior noise levels would exceed the normally acceptable noise level standard. Where noise level would remain at or below the normally acceptable noise level standard with the project, a noise level increase of 5 dBA or greater would be considered potentially significant.

Table 3.13-4. Noise and Vibration Standards Within the City of Santa Clara

<table>
<tr><th>Section</th><th>Code</th></tr>
<tr><td>9.10.040 – Noise or Sound Regulation</td><td>It shall be unlawful for any person to operate or cause to allow to be operated, any fixed source of disturbing, excessive or offensive sound or noise on property owned, leased, occupied or otherwise controlled by such person, such that the sound or noise originating from that source causes the sound or noise level on any other property to exceed the maximum noise or sound levels which are set forth in Schedule A, as follows:
<table>
<tr><th>Receiving Zone Zoning Category</th><th>Time Period</th><th>Maximum Noise Level (dBA)</th></tr>
<tr><td rowspan="2">Category 1
Single-Family and Duplex Residential (R1, R2)</td><td>Commencing at 7:00 A.M. and ending at 10:00 P.M that evening</td><td>55</td></tr>
<tr><td>Commencing at 10:00 P.M. and ending at 7:00 A.M. the following morning</td><td>50</td></tr>
<tr><td rowspan="2">Category 2
Multiple-Family Residential, Public Space (R3, B)</td><td>Commencing at 7:00 A.M. and ending at 10:00 P.M. that evening</td><td>55</td></tr>
<tr><td>Commencing at 10:00 P.M. and ending at 7:00 A.M. the following morning</td><td>50</td></tr>
<tr><td rowspan="2">Category 3
Commercial, Office (C, O)</td><td>Commencing at 7:00 A.M. and ending at 10:00 P.M. that evening</td><td>65</td></tr>
<tr><td>Commencing at 10:00 P.M. and ending at 7:00 A.M. the following morning</td><td>60</td></tr>
<tr><td>Category 4
Light Industrial (ML, MP)</td><td>Anytime</td><td>70</td></tr>
<tr><td>Category 4
Heavy Industrial (MH)</td><td>Anytime</td><td>75</td></tr>
</table>
Except as otherwise provided in this chapter, the noise or sound standards for the various zone districts as presented in this Schedule A shall apply to all such properties within a specified zone, as designated on the most recent update of the official zoning map of the City. For planned development, agricultural or mixed zoning site, the most restrictive noise standard for the comparable zone district, as determined by the Director of Planning and Inspection, shall apply. (Ord. 1588 § 1, 6-14-88. Formerly § 18-26.4).</td></tr>
<tr><td>9.10.050 – Vibration Regulation</td><td>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. (Ord. 1588 § 1, 6-14-88. Formerly § 18-26.5).</td></tr>
<tr><td>9.10.070 - Exceptions</td><td>The provisions of this chapter shall not apply to noise, sound or vibration created by the following:
a) The performance of emergency work, including the operation of emergency generators and pumps or other equipment necessary to provide services during an emergency.
b) Warning devices necessary for the protection of public health, safety, and welfare including but not limited to, civil defense and fire sirens, or commercial, residential, or residential burglar alarms.
c) Outdoor events which are conducted pursuant to a valid permit or license issued by the City relative to the staging of said events.
d) City-owned electric, water and sewer utility system facilities, including but not limited to, receiving station equipment, substation equipment, generating plant equipment, water well station equipment, water booster pumping station equipment, and sewer lifting and pumping station equipment.
e) Construction activities which occur during allowed hours, as otherwise specified in the Code.
f) Firework displays authorized by permit from the City of Santa Clara Fire Department.
g) The operation of heliports authorized by a conditional use permit granted by the City. (Ord. 1588 § 1, 6-14-88. Formerly § 18-26.7).</td></tr>
<tr><td>9.10.120 – Additional Remedies</td><td>As an additional remedy, the operation or maintenance of any fixed source of noise, sound, or vibration which causes discomfort or annoyance to reasonable persons of average sensitiveness or which endangers the comfort, repose, health, or peace of residents in the area in violation of the provisions of this chapter shall be deemed, and the same is hereby declared to be, unlawful and a public nuisance. (Ord. 1588 § 1, 6-14-88. Formerly § 18-26.13).</td></tr>
<tr><td>9.10.230 – Regulation</td><td>No person shall engage or authorize others to engage in construction of any building or related road or walkway, pool or landscape improvement, or in construction operations related thereto, including delivery of construction materials, supplies, or improvements on or to a construction site within three hundred (300) feet of any residentially zoned property except within the hours of 7:00 A.M. to 6:00 P.M. following on weekdays other than holidays, Monday through Friday, inclusive; and within the hours of 9:00 A.M. to 6:00 P.M. following, inclusive, on any Saturday which is not a holiday. A holiday, for the purpose of this section, is each day or part thereof upon which any of the following holidays are observed pursuant to California law:
a) January 1st.
b) The third Monday in January (Martin Luther King, Jr., Day).
c) The third Monday in February.
d) The last Monday in May.
e) July 4th.
f) The first Monday in September.
g) The Thursday in November appointed as Thanksgiving Day and the day immediately following.
h) December 25th.
No such work is permitted on such holidays. (Ord. 1549 § 1, 7-15-86; Ord. 1556 § 1, 9-16-86. Formerly § 18-32.3).</td></tr>
</table>

Source: City of Santa Clara, 2018

3.13.5 Environmental Impacts and Mitigation Measures

a) Would the project result in generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?

Less Than Significant Impact

Construction

Construction activities will be conducted in accordance with the hours allowed by code and would therefore be exempt from specific numeric sound limits (City Code Section 9.10.070). Construction is expected to use equipment similar to other commercial projects that typically varies between 75 and 95 dBA at 50 feet. The sound level from individual pieces of construction equipment decreases at a rate of 6 dB per doubling of distance. Pile driving, typically the loudest construction activity, is not anticipated.

Operations

The project design specification will ensure that normal operations of the project are consistent with the applicable noise limits. Noise sources associated with normal operations are primarily associated with mechanical HVAC equipment (primarily cooling towers on the building) and short duration routine testing of the emergency generators. Generator testing is limited to daytime hours and each of the 56 generators is anticipated to be operated for readiness testing a maximum of 180 minutes per day and less than 16 hours per year in total. An acoustical wall proposed around the generator yard (refer to Figure 3.17-2).

Although the emergency use of generators is exempt from noise standards within the City (Section 9.10.070(a)), infrequent testing is subject to the City's noise limits. The generator specifications will ensure sufficient exhaust silencing and other design measures, if required, such that the project is in compliance with the City sound limit. This results in compliant noise levels adjacent to MP – Planned Industrial zoning.

While generator testing is of limited duration and full-load emergency operation of the generators is anticipated to be a very rare event, the project shall ensure that the applicable Cal/OSHA requirements are satisfied.

b) Would the project result in generation of excessive groundborne vibration or groundborne noise levels?

Less Than Significant Impact.

Construction

As indicated in Section 3.13.2, pile driving—the construction activity typically associated with the highest vibration levels—is not anticipated. Construction equipment and activities are typical to those used at other similar commercial projects and are not anticipated to result in offsite excessive groundborne vibration or groundborne noise levels.

Operations

The equipment that would be used in the project is well balanced and is designed to produce very low vibration levels throughout the life of the Project. An imbalance could contribute to ground vibration levels in the vicinity of the equipment and would be corrected. It is the project's intention to anticipate

the potential for low frequency noise in the design and specification of the project equipment and take necessary steps to prevent ground or airborne vibration impacts.

The project would not result in the generation of excessive groundborne vibration or noise levels.

c) For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?

Less Than Significant Impact

The project site is located within an airport land use plan, as described in this section. However, the project site is located outside of the CLUP Noise Restriction Area, including the 65-dB CNEL contour boundary. As discussed, the project is consistent with the noise compatibility policies set forth in the CLUP and would not expose people working in the in the Project area to excessive noise levels.

Previously Identified Mitigation Measures: None.

New Proposed Mitigation Measures: None.

3.13.6 References

California Department of Transportation (Caltrans). 2013a. *Technical Noise Supplement to the Traffic Noise Analysis Protocol.* September. Accessed on February 5, 2019. http://www.dot.ca.gov/hq/env/noise/pub/TeNS_Sept_2013A.pdf

California Department of Transportation (Caltrans). 2013b. *Transportation and Construction Vibration Guidance Manual*. Report no. CT-HWANP-RT-13-069.25.3. September. http://www.dot.ca.gov/hq/env/noise/pub/TCVGM_Sep13_FINAL.pdf.

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Federal Railroad Administration. 2005. *High-Speed Ground Transportation Noise and Vibration Impact Assessment.* Final. HMMH Report No. 293630-4. Office of Railroad Policy and Development. Prepared by Harris Miller & Hanson Inc. Submitted to Parsons Transportation Group. October.

Federal Railroad Administration. 2012. *High-Speed Ground Transportation Noise and Vibration Impact Assessment.* Final Report. DOT/FRA/ORD-12/15. Office of Railroad Policy and Development. September.

Federal Transit Administration (FTA). 2006. *Transit Noise and Vibration Impact Assessment.* FTA-VA-90-1003-06. Office of Planning and Environment. May. Accessed February 6, 2019. https://www.transit.dot.gov/sites/fta.dot.gov/files/docs/FTA_Noise_and_Vibration_Manual.pdf.

Windus, Walter B. 2011. *Comprehensive Land Use Plan, Santa Clara County – Norman Y. Mineta San Jose International Airport*. Saratoga, California. 2011. Amended November 16, 2016. Accessed February 5, 2019. https://www.sccgov.org/sites/dpd/DocsForms/Documents/ALUC_SJC_CLUP.pdf.

3.14 Population and Housing

Would the project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Induce substantial unplanned population growth in an area, either directly for example, by proposing new homes and businesses or indirectly (for example, through extension of roads or other infrastructure)?	☐	☐	☒	☐
b) Misplace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?	☐	☐	☒	☐

Environmental checklist established by CEQA Guidelines, Appendix G.

3.14.1 Setting

The Laurelwood Data Center (LDC) is located at 2201 Laurelwood Road, in the City and County of Santa Clara. The LDC consists of two, four-story data center buildings with three, attached four-story support buildings. The study area for population and housing-related project impacts is the City of Santa Clara (City), the surrounding cities, and Santa Clara County.

Table 3.14-1 shows the historical and projected populations for the study area. Population projections between 2018 and 2025 show a growth ranging from 6 to 29 percent (0.3 to 1.6 percent per year) in the cities within and around a 6-mile radius of the project site.

Table 3.14-1. Historical and Projected Populations

Area	2010[a]	2018[b]	2020[c]	2025[c]	Projected Population Change 2018-2025		
					Number	Percent (%)	Percent per Year (%)
Campbell	39,349	42,696	41,200	41,700	2,351	6.0	0.3
Cupertino	58,302	60,091	62,700	64,500	6,198	10.6	0.6
Milpitas	66,790	74,865	82,000	86,200	19,410	29.1	1.6
San Jose	945,942	1,051,316	1,069,200	1,096,200	150,258	15.9	0.9
Santa Clara	116,468	129,604	128,300	134,000	17,532	15.1	0.9
Sunnyvale	140,081	153,389	146,400	150,100	10,019	7.1	0.4
Santa Clara County	1,781,642	1,956,598	2,007,500	2,064,200	282,558	15.9	0.9

[a] United States Census Bureau, 2019.

[b] CA DOF, 2018a.

[c] ABAG, 2018.

The California Employment Development Department 2014-2024 Occupational Employment Projections for the San Jose-Sunnyvale-Santa Clara Metropolitan Statistical Area (MSA) show that the 2024 projected employment for the construction occupations is 49,540, a 2.3 percent annual average percent increase from 2014 employment levels of 40,320 (CA EDD, 2016). The projected employment for general and operations managers is 19,930 (a 1.2 percent annual average percent change) from 2014 estimated employment levels of 17,730. The projected employment for security guards is 9,140 (a 0.8 percent annual average percent change) from 2014 estimated employment levels of 8,430. The projected employment

for janitors is 17,060 (a 0.9 percent annual average percent change) from 2014 estimated employment levels of 15,630.

Table 3.14-2 presents housing supply data for the project area. Year 2018 housing estimates indicated 25,877 vacant housing units within Santa Clara County representing a vacancy rate of 3.9 percent (CA DOF, 2018b).

Table 3.14-2. Housing Supply Estimates in the Project Area

Housing Supply		Total	Vacant
Campbell	Number	16,977	884
	Percent	100	5.2
Cupertino	Number	21,036	939
	Percent	100	4.5
Milpitas	Number	19,889	662
	Percent	100	3.3
San Jose	Number	318,566	10,759
	Percent	100	3.4
Santa Clara	Number	45,536	1,857
	Percent	100	4.1
Sunnyvale	Number	56,245	2,492
	Percent	100	4.4
Santa Clara County	Number	636,748	25,877
	Percent	100	4.0

Source: CA DOF, 2018b

3.14.2 Environmental Impacts and Mitigation Measures

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

Less Than Significant Impact. Construction of the project would employ an average of 71 workers per month and reach a peak workforce of 129. Construction is scheduled to start in the Fourth Quarter of 2019 and estimated to finish in Fourth Quarter of 2020.

All of the construction workforce are expected to be recruited from the greater Bay Area, which includes a large construction workforce within in the MSA. As a result of the relatively short construction window, the likelihood that the construction workforce will relocate closer to the project site is remote. Therefore, impacts to local housing are not expected.

The project will employ approximately 54 employees, including 2 facility managers, 2 account managers, 2 equipment managers, 2 environmental engineers, 18 facility operators, 3 mechanics, and 25 administration personnel (including security and onsite management). All of the operations workforce is expected to be recruited from the greater Bay Area, which includes a sufficient workforce to accommodate the project's operational employment needs. As with the construction workforce, operational workers are not likely to relocate closer to the project site. If some operations workers were to relocate, housing data shows a vacancy rate of 4.0 percent in Santa Clara County and 4.1 percent in the City. Although the vacancy rate is to some extent lower than the industry accepted

5 percent vacancy benchmark (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 56 backup generators, these generators serve the LDC exclusively and are not capable of transmitting electrical power to the Silicon Valley Power grid and will not be an extension of infrastructure that will result in indirect population growth.

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

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

Less Than Significant Impact. The project is proposed on a commercial/industrial zoned parcel that has been developed as such since the late 1960s. Therefore, development of LDC will not displace existing people or housing. As noted previously, the MSA includes a sufficiently large population to support the construction and operation of LDC without needing to construction replacement housing either locally or elsewhere.

Previously Identified Mitigation Measures: None.

New Proposed Mitigation Measures: None.

3.14.3 References

Association of Bay Area Governments (ABAG). 2018. *IRP Projections-Santa Clara County*. March 15. https://abag.ca.gov/planning/interregional/pdf/projections/IRP_Projections-Santa_Clara_County.pdf

State of California Department of Employment Development (CA EDD). 2016. *Employment Projections*. Accessed February 2019. https://www.labormarketinfo.edd.ca.gov/data/employment-projections.html.

State of California Department of Finance (CA DOF). 2018a. *Report E-5: Population and Housing Estimates for Cities, Counties, and the State, 2011-2018 with 2010 Census Benchmark*. May 1. http://www.dof.ca.gov/Forecasting/Demographics/Estimates/E-5/documents/E-5_2018InternetVersion.xls.

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

3.15 Public Services

Would the project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
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 rations, response times, or other performance objectives for any of the public services.				
a) Fire protection?	☐	☐	☒	☐
b) Police protection?	☐	☐	☒	☐
c) Schools?	☐	☐	☐	☒
d) Parks?	☐	☐	☐	☒
e) Other public facilities?	☐	☐	☐	☒

Environmental checklist established by CEQA Guidelines, Appendix G

3.15.1 Setting

3.15.1.1 Fire Protection

Fire protection within the city of Santa Clara is provided by the Santa Clara Fire Department. 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. Fire Station 8, located at 2400 Agnew Road, is less than 0.5 mile from the Laurelwood Data Center (LDC) (City of Santa Clara, 2019a).

3.15.1.2 Police Protection

Police protection is provided by the Santa Clara Police Department. Staff includes 231 full-time employees (155 sworn officers and 76 civilians) and a varying number of part-time or per diem employees, community volunteers, police reserves, and chaplains. The nearest Santa Clara Police Department Substation is the Northside Substation located at 3992 Rivermark Parkway, approximately 1.25 miles northeast of the LDC (City of Santa Clara, 2019b).

3.15.1.3 Schools

The project is in the Santa Clara Unified School District, which includes 17 elementary schools, 1 kindergarten-to-8th-grade school, 3 middle schools, 2 comprehensive high schools, 3 alternative high schools, 1 alternative program, and 1 adult education campus (SCUSD, 2019). The school district had an enrollment of 11,645 students in the 2017/2018 year (CDE, 2019). The nearest elementary school, approximately 1 mile to the east, is the Montague Elementary school at 750 Laurie Avenue. The nearest combination elementary/middle school, approximately 1.3 miles to the northeast, is the Don Callejon K-8 School, located at 4176 Lick Mill Boulevard; the nearest high school is the Adrian Wilcox High School located 1.5 miles to the southwest at 3250 Monroe Street.

3.15.1.4 Parks

The city of Santa Clara has 2 community parks, 6 mini/pocket parks, 26 neighborhood parks, 3 public open space areas, 5 recreational facilities, 4 recreational trails, and 11 joint-use facilities for a total of

approximately 350 acres (City of Santa Clara, 2019c). The closest public park to the project site is Agnew Park, located approximately 0.6 milesnortheast of the project site. The San Tomas Aquino Creek Trail is also located adjacent to the project site along San Tomas Aquino Creek.

3.15.1.5 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 Northside Branch Library, which is approximately 1.5 miles northwest of the project site (City of Santa Clara, 2019d).

3.15.2 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 site has been developed since the 1960s and is already serviced by the City of Santa Clara Fire Department. The 54 operational employees associated with the LDC will have a negligible effect on the service populations of the facilities. The LDC will include fire suppression systems consistent with local, state, and federal building standards and codes. The project facilities will undergo City of Santa Clara building design reviews to ensure the facility conforms to the applicable Santa Clara Municipal Fire and Environmental Codes to reduce potential fire risks. Furthermore, as the existing site was already developed as a commercial/industrial use, LDC is not expected to create a need for new or physically altered facilities.

b) Police Protection?

Less than Significant Impact. The 54 operational employees associated with the LDC will have a negligible effect on the service populations of the police stations that serve the project site. The entire project site will be secured by fencing and include a sophisticated security system with full-time video monitoring coverage and security personnel, which will minimize the potential for criminal activity at the facility.

c) Schools?

No Impact. The project will not include new residential uses and will not have direct or indirect impacts on school attendance or school facilities. It is expected that employees will be employed primarily from the Bay Area and will not cause an increase to local schools. Therefore, there would be no impacts.

d) Parks?

No Impact. The project is not expected to substantially increase employment in the City of Santa Clara and the LDC will have a negligible impact in the usage of or demand for parks or other recreational facilities.

e) Other Public Facilities?

No Impact. It is expected that construction and operations workers for the project would be drawn from the greater Bay Area. 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, and there would be no impacts.

Previously Identified Mitigation Measures: None.

New Proposed Mitigation Measures: None.

3.15.3 References

California Department of Education (CDE). 2019. *2017-18 Enrollment by Ethnicity and Grade, Santa Clara County Office of Education Report (43-10439)*. https://dq.cde.ca.gov/dataquest/dqcensus/EnrEthGrd.aspx?cds=4310439&agglevel=district&year=2017-18. Accessed February 2019.

City of Santa Clara. 2019a. *Fire Department*. Accessed February 2019. http://santaclaraca.gov/government/departments/fire/about-us.

City of Santa Clara. 2019b. *Police Department*. Accessed February 2019. http://santaclaraca.gov/government/departments/police-department/about-us.

City of Santa Clara. 2019c. *City of Santa Clara Park and Recreation Facilities Development Impact Fee Update Study.* Administrative Draft. Prepared by Willdan Financial Services. January 4. http://santaclaraca.gov/home/showdocument?id=62674.

City of Santa Clara. 2019d. *City Library*. Accessed February 2019. http://santaclaraca.gov/government/departments/library/about-the-library/northside-branch-library/about-northside-branch-library.

Santa Clara Unified School District (SCUSD). 2019. *Annual Review 2017/2018*. Accessed February 2019. https://www.santaclarausd.org/site/handlers/filedownload.ashx?moduleinstanceid=2515&dataid=4247&FileName=Annual%20Review%202017-2018.pdf.

3.16 Recreation

Would the project:	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.

3.16.1 Setting

The Laurelwood Data Center (LDC) will be located on an approximately 12-acre site and will consist of two data center buildings totaling over approximately 737,000 square feet of space, as well as the installation of up to 56 standby generators. The project site has been developed since the late 1960s, and the existing facilities are currently being demolished by the former owner as part of the sales agreement.

The study area for recreation-related project impacts is the city of Santa Clara. The city has 2 community parks, 6 mini/pocket parks, 26 neighborhood parks, 3 public open space areas, 5 recreational facilities, 4 recreational trails, and 11 joint-use facilities for a total of approximately 350 acres (City of Santa Clara, 2019a). The closest parks to the project site are Agnew Park (located 0.6 mile northeast of the project site), Agnews Historic Park (located 0.7 mile northeast of the project site), Montague Park (located 1.0 mile east of the project site), and Barcher Park (located 1.2 miles southwest of the project site) (City of Santa Clara, 2019b).

3.16.1.1 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 will have approximately 54 employees to operate the facility (see Section 3.14, Population and Housing). These workers are expected to be drawn from the South Bay area. The 54 operational workers are not expected to move closer to the project site nor are they expected to increase the use of existing parks or recreational facilities to the extent that substantial physical deterioration of the park or facility will 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 include recreational facilities and will not require the construction or expansion of recreational facilities. The operational worker force is not expected to move closer to the project site or increase use of existing neighborhood and regional parks or other recreational facilities in a manner requiring construction or expansion of such facilities. Therefore, the construction or expansion of recreational facilities is not expected.

Previously Identified Mitigation Measures: None.

New Proposed Mitigation Measures: None.

3.16.2 References

City of Santa Clara. 2019a. *City of Santa Clara Park and Recreation Facilities Development Impact Fee Update Study.* Administrative Draft. Prepared by Willdan Financial Services. January 4. http://santaclaraca.gov/home/showdocument?id=62674.

City of Santa Clara. 2019b. *Parks and Pools.* Accessed January 31, 2019. http://missioncity.maps.arcgis.com/apps/MapTour/index.html?appid=4c84d4f8913541cebd8a8ef3fc31a326&amp.

3.17 Transportation

This section describes existing conditions and potential impacts on transportation as a result of construction, operation, and maintenance of the project. The project's potential effects on transportation were evaluated using the significance criteria set forth in Appendix G of the California Environmental Quality Act (CEQA) Guidelines. The analysis concludes that, although existing traffic conditions will be temporarily affected by project construction, project-related impacts on transportation will be less than significant. The project design includes the development of a Construction Traffic Control Plan. The conclusions are summarized in the CEQA Environmental Checklist and discussed in more detail in this section.

Would the project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Conflict with program plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities?	☐	☐	☒	☐
b) Would the project conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b)?	☐	☐	☒	☐
c) Substantially increase hazards due to a geometric design feature e.g., sharp curves or dangerous intersections or incompatible uses e.g., farm equipment?	☐	☐	☒	☐
d) Result in inadequate emergency access?	☐	☐	☒	☐
e) 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.

3.17.1 Setting

The Applicant is proposing to construct and operate the Laurelwood Data Center (LDC) in the city of Santa Clara (City) near the junction of US-101 and the Montague Expressway. The project site is an approximately 12-acre parcel that is entirely developed except for planted landscaping. The existing development will be demolished, and the LDC constructed in its place. The site is bordered on the north by an existing office building; on the south by US-101; on the west by a parking lot, drainage channel, and the San Tomas Aquino Creek Trail; and on the east by Juliette Lane. Direct access to the site will be from an existing driveway on the corner of Juliette Lane and Laurelwood Road and from an existing driveway on Juliette Lane at the northwest corner of the site.

Section 3.17.1.1 describes the existing regional and local road network, bicycle and pedestrian facilities, and transit service in the project study area.

3.17.1.1 Existing Road Network

The regional and local road network is shown on Figure 3.17-1. Regional access to the site will be provided by numerous roadways and freeways near the project, including US-101 and Montague Expressway. Local roadways include Mission College Boulevard, Juliette Lane, and Laurelwood Road. The road network is described in subsequent text.

Source:
ESRI Service Layer

Figure 3.17-1
Regional Road Network
Laurelwood Data Center
Santa Clara, California

JACOBS

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US-101 provides north-south regional access between San Francisco to the north and San Jose to the south. US-101 is 8 to 10 lanes and serves as a major commuter route in Silicon Valley. Access to/from LDC is provided at the interchange at US-101 and the Montague/San Tomas Expressway. US-101 carries 207,900 average daily traffic (ADT) and 14,600 peak hour trips near this interchange (Caltrans, 2017). Other nearby interchanges are provided at Lawrence Expressway and Bowers Avenue/Great America Parkway.

Montague Expressway is an eight-lane east-west divided expressway that connects with US-101 on the west and I-680 to the east. West of US-101, the Montague Expressway becomes San Tomas Expressway. Montague Expressway provides direct access to US-101. Montague Expressway carries 83,210 ADT between Mission College Boulevard and US-101 (City of Santa Clara, 2010).

San Tomas Expressway is an eight-lane north-south divided expressway that connects with US-101 on the northeast and SR 17 to the south. North/east of US-101, San Tomas Expressway becomes Montague Expressway. San Tomas Expressway carries 66,510 ADT between US-101 and Scott Boulevard (City of Santa Clara, 2010).

Mission College Boulevard is an east-west four- to five-lane arterial between Great American Parkway to the west and Montague Expressway to the east. East of Montague Expressway, Mission College Boulevard becomes Thomas Road, a two-lane local street. Most of the project trips will travel through the signalized intersections at Mission College Boulevard and Juliette Lane, and Mission College Boulevard and Montague Expressway. Mission College Boulevard carries 28,530 ADT between Agnew Road and Montague Expressway (City of Santa Clara, 2010).

Juliette Lane is a two-lane north-south local road that borders the site on the east. Juliette Lane runs between Laurelwood Road to the south and Mission College Boulevard on the north. Direct access to the site is provided via two driveways on Juliette Lane. The project site's southern driveway is located at the intersection of Juliette Lane and Laurelwood Road. The intersection is controlled by a two-way stop (stop signs provided at the project driveway and at Juliette Lane).

Laurelwood Road is an approximately 400-foot-long two-lane east-west local road. Laurelwood Road runs between the project site on the west and Montague Expressway on the east. Laurelwood Road provides direct access to the project site and access to US-101 northbound for project-related outgoing trips.

3.17.1.2 Access To/From US-101

Most of the project trips will be coming from/going to US-101. As a result of the placement of medians and specific signed traffic restrictions on local roads, the access route to/from US-101 to/from the project site varies depending on whether vehicles are arriving (incoming) or departing (outgoing) trips and the direction of travel (northbound or southbound on US-101). A description of the anticipated routes to/from US-101 is provided in Table 3.17-1.

Table 3.17-1. Project Access To/From US-101

Project Trips	Northbound US-101	Southbound US-101
Incoming	Exit at Montague Expressway and travel northbound, turn left at Mission College Boulevard (westbound), turn left (southbound) at Juliette Lane to project site.	Exit at Montague Expressway and travel northbound, turn left at Mission College Boulevard (westbound), turn left (southbound) at Juliette Lane to project site.
Outgoing	Travel westbound on Laurelwood Road, turn right (southbound) onto Montague Expressway/US-101 Northbound on-ramp.	Travel northbound on Juliette Lane, turn right (eastbound) on Mission College Boulevard, turn right on Montague Expressway (southbound), turn right onto US-101 southbound on-ramp.

3.17.1.3 Existing Level of Service

Traffic congestion is monitored in terms of level of service (LOS), a sliding scale from A through F where LOS A represents best traffic flow and LOS F represents significant traffic delay. The Santa Clara Valley Transportation Authority (VTA) produces the regional Congestion Management Program (CMP) and identifies LOS E as the standard for Santa Clara County. LOS data have been collected for the CMP network since 1991 and serve as the baseline condition. Freeway segments and CMP intersections that operated at LOS F when monitoring began in 1991 are exempt from meeting the LOS E standard. The City's minimum LOS standard is LOS D.

LOS data were obtained from the 2016 CMP Monitoring and Conformance Report (VTA, 2016) and the Lawrence Station Area Plan Transportation Impact Analysis (Fehr & Peers, 2016). US-101 Montague Expressway, and the signalized intersection at Montague Expressway and Mission College Boulevard are all part of the CMP network. Table 3.17-2 summarizes the existing peak hour LOS for US-101 freeway segments near the project site. The CMP analysis treats mixed flow and high-occupancy vehicle (HOV) lanes as separate facilities. Table 3.17-3 summarizes the existing peak hour LOS for the Montague Expressway/Mission College Boulevard intersection.

Table 3.17-2. US-101 Peak Hour Level of Service

US-101 Freeway Segment (From/To)	AM Peak Hour				PM Peak Hour			
	Northbound		Southbound		Northbound		Southbound	
	Mixed	HOV[a]	Mixed	HOV[a]	Mixed	HOV[a]	Mixed	HOV[a]
SR 237 to N. Mathilda Avenue	E	**F**	C	D	C	C	**F**	**F**
N. Mathilda Avenue to N. Fair Oaks Avenue	**F**	E	C	B	C	A	**F**	**F**
N. Fair Oaks Avenue to Lawrence Expressway	**F**	**F**	D	B	D	B	**F**	**F**
Lawrence Expressway to Bowers Avenue/Great America Parkway	**F**	**F**	D	B	D	B	**F**	**F**
Bowers Avenue/Great America Parkway to Montague/San Tomas Expressway	**F**	**F**	C	B	D	A	**F**[b]	**F**
Montague/San Tomas Expressway to De La Cruz Boulevard	**F**	**F**	C	A	C	A	**F**[b]	**F**
De La Cruz Boulevard to Guadalupe Parkway	**F**	**F**	C	A	C	A	E	D
Guadalupe Parkway to N. First Street	**F**	**F**	B	A	B	A	**F**	**F**
N. First Street to Old Bayshore Highway	**F**[b]	**F**	B	A	B	A	**F**[b]	**F**
Old Bayshore Highway to I-880	**F**[b]	**F**	B	A	B	B	**F**[b]	**F**

Source: VTA, 2016.

[a] HOV= high-occupancy vehicle lanes

[b] Freeway segments that are exempt from the LOS E standard

Table 3.17-3. Peak Hour Level of Service

Intersection	Jurisdiction/CMP	Intersection Control	LOS Threshold	LOS (Seconds of Delay)	
				AM	PM
Montague Expressway/ Mission College Boulevard	Santa Clara County (CMP)	Signal	At or above LOS E	53.2 LOS D	63.4 LOS E

Source: Fehr & Peers, 2016.

As shown in Table 3.17-2, significant congestion occurs on northbound US-101 during the morning peak hour and on southbound US-101 during the afternoon peak hour. This reflects the typical commute pattern to the Bay Area in the morning and from the Bay Area in the afternoon. Several of the freeway segments are exempt from the LOS E standard, but not all. Table 3.17-3 indicates that the signalized intersection at Mission College Boulevard and Montague Expressway is operating at LOS D in the AM peak hour and LOS E in the afternoon peak hour and is within acceptable levels.

3.17.1.4 Transit

The greater San Francisco Bay Area is served by an extensive public transit network of rail, buses, and ferries. The transit network in the study area is shown on Figure 3.17-2. Existing public transit service within the City is primarily provided by the VTA and consists of bus, light rail transit, and paratransit services. Commuter rail lines stopping at the Santa Clara Transit Station include Caltrain, operated by the Peninsula Joint Powers Board, and Altamont Commuter Express, operated by the San Joaquin Regional Rail Commission. In addition to the Altamont Commuter Express Train, the Capitol Corridor commuter rail line, operated by the Capitol Corridor Joint Powers Authority, stops at the Great America Station, providing services from Sacramento to San Jose through the city of Santa Clara.

Bus services near the project site include Local bus route 60 and Limited bus route 330 on Mission College Boulevard and Montague Expressway, Express bus route 140 on Montague Expressway, and Express bus routes 121 and 122 on US-101. The closest bus stops to the site are located on each side of Mission College Boulevard, near the corner of Juliette Lane (VTA, 2019).

3.17.1.5 Bicycle and Pedestrian Network

The City's bicycle and pedestrian network includes Class I paths and trails (separated, off-street, multi-use paths), Class II bike lanes (on-street striped/signed bike lanes) and Class III bike routes (on-street, signed-only route). The City's bike facilities are shown on Figure 3.17-2. Near the project site, there is a Class II bike lane maintained by the County of Santa Clara, on both sides of the Montague/San Tomas Expressway, between approximately Stevens Creek Boulevard to the south and Lick Mill Boulevard/Guadalupe River Trail to the north. A Class II bike lane is also provided on both sides of Mission College Boulevard, between Great America Parkway and Montague Expressway. The Class I San Tomas Aquino Creek Trail is located approximately 600 feet to the west of the project site and can be accessed via a commercial driveway and bridge approximately 900 feet north of the site.

Sidewalks are located along portions of Laurelwood Road, on both sides of Juliette Lane, except along the project frontage, and on both sides of Mission College Boulevard and Montague Expressway.

Source:
ESRI Service Layer, City of Santa Clara, Santa Clara County, VTA

N

0 1 2

Approximate scale in miles

Figure 3.17-2
Local Transportation Network
Laurelwood Data Center
Santa Clara, California

JACOBS

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3.17.2 Regulatory Background

3.17.2.1 Santa Clara Valley VTA

Per the CMP, VTA requires a traffic impact analysis for a project that will generate 100 or more net new peak hour vehicle trips during the AM or PM peak period (VTA, 2014). As previously described, the LOS threshold for the CMP network (roadways and intersections) is LOS E, unless they were already operating at LOS F as of 1991.

3.17.2.2 City of Santa Clara

The City's LOS standard is LOS D or better for intersections during the AM and PM peak traffic periods.

3.17.3 Environmental Impacts and Mitigation Measures

a) Would the project conflict with program, plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities?

Less than Significant Impact.

3.17.3.1 Construction Transportation Impacts

Construction of the project is anticipated to take approximately 12 months and will result in a temporary short-term increase in local traffic resulting from construction-related workforce traffic, and equipment and material deliveries. The peak construction trips are summarized in Table 3.17-4.

Table 3.17-4. Construction Trip Generation

Trip Type	AM Peak Hour			PM Peak Hour		
	In	Out	Total	In	Out	Total
Delivery/Haul Trucks	20	20	40	30	30	60
Delivery/Haul Trucks PCE (1.5)			60			90
Workers	200	0	200	0	200	200
Total Construction Traffic in PCE	--	--	300	--	--	350

PCE = passenger car equivalent

Traffic-generating construction activities related to the project will consist of the daily arrival and departure of construction workers to the site, and trucks hauling equipment and materials to the work site. All the construction activities will occur onsite and outside of the public right-of-way. The majority of the project's construction-related trips (vehicle and truck trips) will occur on the roadways identified in Section 3.17-1. As a conservative analysis, it is assumed that there will be up to a maximum 350 daily round trips, 300 AM peak hour trips, and 350 PM peak hour trips. However, many of the construction worker trips will be expected to occur prior to the morning and evening peak hours, in accordance with typical construction schedules. Truck trips will occur throughout the day and will be scheduled for offpeak hours whenever possible.

Most segments of northbound US-101 are operating at LOS F during the morning peak hour and most segments of southbound US-101 are operating at LOS F during the afternoon peak hour. Several of the freeway segments are exempt from the LOS E standard, but not all. Although the project will add trips to US-101, the project-added trips represent a minimal increase in traffic compared to the existing highway volumes (2.4 percent or less) and no changes to the existing LOS are anticipated. Likewise, project-added trips on Montague Expressway and Mission College Boulevard will be negligible compared to existing roadway volumes.

Construction activities will generate slight increases in traffic on the regional and local road network, but the effects will be minimal, short-term, and periodic. Construction traffic generated by the project will not be expected to conflict with the LOS standards established by the City and the VTA's CMP. Impacts to the road network will be less than significant.

The project site is not directly served by transit. However, there are many nearby transit services, including local bus service near the site (VTA, 2019). Construction of the project will occur onsite and will not physically obstruct any transit facilities. Construction of the project also will not delay transit services because the project will not generate enough vehicle trips during the peak hour to significantly impact LOS, thereby delaying bus or shuttle service. Construction 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 temporary increase in demand will not delay or overburden these facilities. Impacts will be less than significant.

Project construction will also not obstruct any of the pedestrian or bicycle facilities in the area or interfere with any future pedestrian or bike plans for the area, as all construction will occur onsite. Traffic increases generated by the project will be less than significant and will not have significant impacts on pedestrians or bicyclists. Impacts will be less than significant.

Based on the analysis above, construction-related traffic will not conflict with any applicable transportation program, plan, ordinance, or policy, taking into account all modes of transportation. Impacts will be less than significant.

3.17.3.2 Operation Transportation Impacts

Project operations will require 54 onsite employees, which is expected to generate 40 AM peak hour trips and 40 PM peak hour trips. The project trips are summarized in Table 3.17-5.

Table 3.17-5. Operations Trip Generation

Trip Type	AM Peak Hour			PM Peak Hour		
	In	Out	Total	In	Out	Total
Maximum Delivery Trucks	15	15	30	15	15	30
Average Delivery Trucks	5	5	10	5	5	10
Workers	20	20	40	20	20	40

Project operations trips will generate less than 100 peak hour trips and do not require a traffic analysis, based on the VTA Traffic Impact Study Guidelines (VTA, 2014). As described for the construction traffic above, the project-added trips will result in a negligible increase in traffic and will not be expected to change the existing roadway or intersection LOS. Operation of the project will occur entirely onsite and will have no effect on transit or bicycle facilities.

b) Would the project conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b)?

Less than Significant Impact. Section 15064.3(b)(4) of the recently updated CEQA Guidelines replaces auto delay with vehicle miles travelled (VMT) as the primary metric for analyzing a project's transportation impacts. The update gives lead agencies discretion to choose the most appropriate methodology to use to evaluate project-related impacts, provided that any such analysis is consistent with the requirements of CEQA and any other applicable requirements. This recent change is also intended to allow agencies to continue using vehicle LOS for all projects as part of transportation planning or entitlement review.

It should also be noted that the majority of LDC project-generated trips will primarily occur during construction and will be short-term and temporary. The operation of the LDC will require relatively few VMT, and the project site was previously developed with an onsite workforce—net VMT (historic use VMT versus LDC VMT) is expected to be equal to or less than the previous VMT for the site. The LDC is not a growth-inducing project that will significantly increase VMT in the project area.

c) Would the project substantially increase hazards due to a geometric design feature or incompatible uses?

Less than Significant Impact. Project construction or operations will not permanently alter any public roadways or intersections, nor will it introduce a design feature or incompatible uses to the project area. Project construction and operation will occur entirely onsite. Therefore, the project will not increase hazards due to geometric design features of roadways or incompatible use. Impacts will be less than significant.

3.17.3.3 Obstruction Hazards to Aviation

The Norman Y. Mineta San Jose International Airport is located approximately 1.5 miles northwest of the site. The Federal Aviation Administration (FAA) establishes a maximum structure height of 212 feet above mean sea level (amsl) at the project site (Santa Clara County ALUC, 2016). The highest point of the proposed LDC, the top of the rooftop chiller stack, is approximately 87.5 feet above ground level. Even when accounting for the varying 40- to 75-foot elevation of the project site amsl, the LDC, at 163 feet above ground level (88 feet + 75 feet), will 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 will not exceed the FAA's height limitation of 212 feet or require FAA review, project structures will not be expected to pose an obstruction hazard to aircraft.

3.17.3.4 Plume Hazards to Aviation

The project's emergency standby generators will discharge thermal plumes, high-velocity columns of hot air, during operation. Thermal plume velocities will be greatest at the discharge points, with plume velocities decreasing with increasing altitude. Plume velocities will 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, 2014). 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.

A peak vertical plume velocity of 10.6 meters per second (m/s) (5.3 m/s average plume velocity) is used 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.

The project site is located outside all airport safety zones. Based on a recent assessment of standby generator thermal plume assessment[1], thermal plumes from LDC are not expected to the 10.6 m/s peak velocity above 200 feet amsl. Therefore, the project will not be hazardous to air traffic because the physical height of the project and the maximum height of the thermal plumes will be 1) below the FAA's Part 77 airspace surface, and maximum structure height, of 212 feet amsl, 2) below the 200-foot threshold that triggers FAA review; and 3) is located outside all airport safety zones.

The project will not increase any other hazards. All construction will occur onsite and will not result in any hazards to motorists, bicyclists, or pedestrians. Impacts will be less than significant.

d) Result in inadequate emergency access?

Less than Significant Impact. The project will not physically block any access roads or result in traffic congestion that could significantly compromise timely access to this facility or any other location. Emergency access to the site will continue to be provided from the existing driveways on Juliette Lane. Therefore, the impact will be less than significant.

Previously Identified Mitigation Measures: None.

New Proposed Mitigation Measures: None.

3.17.4 References

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[1] McLaren Data Center Project Initial Study and Proposed Mitigated Negative Declaration (17-SPPE-01), June 22, 2018, TN 223911.

3.18 Tribal Cultural Resources

Would the project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Tribal Cultural Resources a) 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:				
(i) 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	☐	☐	☐	☒
(ii) 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.

3.18.1 Setting

The city of Santa Clara (City) 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 (it was created by the uplifting mountains, as opposed to erosional forces [NPS, 2007; SFEI, 2010]).

An analysis of historic maps and field notes identifies the area of the project as having been agricultural zone prior to its development in the 1960s and 1970s (USGS, 1953, 1961, 1968, and 1973). The elevation of the project ranges between 27 and 30 feet above mean sea level.

The geologic map of Santa Clara County shows the area of the 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 site.

The project site is located north of downtown Santa Clara, at the intersection of US-101 and Montague Expressway in the city. Land use in the area is primarily industrial and commercial. A channelized portion of the San Tomas Aquino Creek is located approximately 500 feet to the west.

The project site has been developed since the late 1960s and the existing facilities are being demolished by the previous owner pursuant to a sales agreement. The project is anticipated to begin construction in the Fourth Quarter of 2019, with operations beginning in Fourth Quarter of 2020.

A complete discussion of the prehistoric, ethnographic, and historical setting may be found in Appendix 3.5-A, *Cultural Resource Investigation in Support of the 2201 Laurelwood Road Project*.

3.18.2 Regulatory Setting

3.18.2.1 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 specifically provide that "a project with an effect 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" (Public Resources Code [PRC], Section [§] 21084.2). AB 52 further defined the consultation requirements of lead agencies and defined the terms California Native American tribes and tribal cultural resources for the purposes of CEQA.

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" (PRC, §21073). Lead agencies implementing CEQA are responsible to conduct tribal consultation with California Native American tribes about tribal cultural resources within specific timeframes, observant of tribal confidentiality—if tribal cultural resources could be impacted by project implementation, lead agencies are to exhaust the consultation to points of agreement or termination.

Tribal cultural resources are either of the following:

1) Sites, features, places, cultural landscapes, sacred places, and objects with cultural value to a California Native American tribe that are either of the following:
   a) Included or determined to be eligible for inclusion in the California Register of Historical Resources (CRHR).
   b) Included in a local register of historical resources as defined in PRC, §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 PRC, §5024.1(c). In applying the aforesaid criteria, the lead agency shall consider the significance of the resource to a California Native American tribe (PRC, §21074[a]).

A cultural landscape that meets the criteria of PRC, §21074(a), is a tribal cultural resource to the extent that the landscape is geographically defined in terms of its size and scope (PRC, §21074[b]). Historical resources, unique archaeological resources, and non-unique archaeological resources, as defined in PRC, §§21084.1, 21083.2(g), and 21083.2(h) may also be a tribal cultural resource if they conform to the criteria of PRC, §21074(a) (see also Section 3.5, Cultural Resources).

3.18.2.2 General Plan Policy

The *City of Santa Clara General Plan 2010- 2035* (2010) 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. Section 3.5, Cultural Resources, details those policies of the General Plan relevant to tribal cultural resources.

3.18.2.3 Criteria for Local Significance

The City 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. Section 3.5, Cultural Resources, details those criteria for local significance that are relevant for tribal cultural resources.

3.18.2.4 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 PRC, §5020.1.

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 Section 3.5, Cultural Resources.

3.18.3 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 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 project site, San José Cupertino and Santa Clara; both are presumably Tamyen speakers (Levy, 1978). Background research suggests that the project site is located approximately 1.5 miles south of the ethnographic village of *Ulístac* and 2.3 miles north of Rancheria Santa Clara (Brown, 1994).

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).

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).

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; Levy, 1978).

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; Levy, 1978).

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).

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 project site 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).

More detailed prehistoric and historic context statements can be found in Section 3.5, Cultural Resources.

3.18.4 Native American Consultation

PaleoWest Archaeology contacted the NAHC on February 1, 2019, 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 on February 5, 2019, (Totton, pers. comm., 2019) that results of the Sacred Lands File search were negative and provided a list of six California Native American Tribes to contact. Letters were sent to these groups on February 6, 2019 (see Tribal Cultural Resources Table 1). Follow-up phone calls were made on February 11, 2018.

Table 3.18-1. California Native American Tribes Contacted for the Laurelwood Data Center

Tribe	Cultural Affiliation	Response to Date
Amah Mutsun Tribal Band	Ohlone/Costanoan, northern Valley Yokuts	Outside of traditional tribal territory, declined to comment.
Amah Mutsun Tribal Band of Mission San Juan Bautista	Ohlone/Costanoan	Requested that the construction crews receive cultural resources awareness training, and if anything is found to have an Archaeological Monitor and a Native American Monitor.
Northern Valley Yokuts Tribe	Ohlone/Costanoan, Northern Valley Yokuts, Bay Miwok	No response.
Muwekma Ohlone Indian Tribe	Ohlone/Costanoan	No response.
The Ohlone Indian Tribe	Ohlone/Costanoan, Bay Miwok, Plains Miwok, Patwin	Would like a copy of the Phase 1 report when complete.
Indian Canyon Mutsun Band of Costanoan	Ohlone/Costanoan	Requested that we send the results of the records search and the pedestrian survey via USPS. Will contact if there are any concerns.

3.18.5 Summary of Tribal Cultural Resources

PaleoWest Archaeology conducted a records search at the Northwest Information Center at Sonoma State University in February 2019. The record search indicated that no fewer than 135 cultural resources studies were conducted within 1 mile of the project site, of which 54 include portions or all of the project site. No studies that included subsurface archaeological testing were conducted within 0.25 mile of the project site.

No prehistoric cultural resource sites, or potential tribal cultural resources, were documented within the project site or within 1 mile of the project site. Consultation with California Native American tribes did not result in the identification of any tribal cultural resources that could be impacted by the project.

3.18.6 Environmental Impacts

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:

(i) 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. No prehistoric cultural resource sites, or potential tribal cultural resources, were documented within the project site or within 1 mile of the project site. Consultation with California Native American tribes did not result in the identification of any tribal cultural resources that could be impacted by the project. Therefore, there will not be any impacts to tribal cultural resources that are

listed in the CRHR or other state registers, National Register of Historic Places, or local register of historical resources.

(ii) 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 Impact. No prehistoric cultural resource sites, or potential tribal cultural resources, were documented within the project site or within 1 mile of the project site. Consultation with California Native American tribes did not result in the identification of any tribal cultural resources that could be impacted by the project.

Background research suggests that the project site is located approximately 1.5 miles south of the ethnographic village of *Ulístac* and 2.3 miles north of Rancheria Santa Clara (Brown, 1994).

The geologic Map of Santa Clara County shows the area of the project as Quaternary (Holocene) alluvium (Qha) (Graymer et al., 2006). The age and depositional nature of these deposits are such that the project site retains the potential for unknown, buried cultural resources despite previous ground-disturbing activities at the site. Boring logs conducted for the project indicate that these alluvial deposits are present to at least 7.5 feet below the ground surface, and that these layers include interbedded layers of medium stiff to hard clay, silty clay, clayey silt, sandy silt, and medium dense to very dense sand (TRC, 2019).

As a result of the extent of ground-disturbing activities as part of the 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.

Although there are no known tribal cultural resources on or directly adjacent to the site, ground disturbance associated with the 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. However, the project has incorporated, as a project design feature, the development and implementation of Worker Environmental Program (WEAP) that includes a training and treatment protocol. The treatment protocol identifies measures if construction encounters prehistoric or historic resources or human remains. For more information on the WEAP, see Section 3.5, Cultural Resources. Therefore, potential impacts to unknown tribal cultural resources will be less than significant.

Previously Identified Mitigation Measures: None.

New Proposed Mitigation Measures: None.

3.18.7 References

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3.19 Utilities and Service Systems

Would the project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Utilities and Service Systems				
a) Require or result in the relocation or construction of new or expanded water, wastewater treatment or stormwater drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?	☐	☐	☒	☐
b) Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry, and multiple dry years?	☐	☐	☒	☐
c) Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	☐	☐	☒	☐
d) Generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?	☐	☐	☒	☐
e) Comply with federal, state, and local management and reduction statutes and regulations related to solid waste?	☐	☐	☒	☐

Environmental checklist established by CEQA Guidelines, Appendix G.

3.19.1 Setting

3.19.1.1 Potable Water Supply

The project would be supplied with potable water provided by the City of Santa Clara's (City) Water and Sewer Utility. The City is provided water from three interchangeable sources: Santa Clara Valley Water District, the San Francisco Public Utilities Commission, and 26 City-operated groundwater wells. The City's approximately 28.8-million-gallon capacity water system consists of more than 335 miles of distribution mains, and seven storage tanks.

3.19.1.2 Recycled Water Supply

The City of San José operates the South Bay Water Recycling (SBWR) program that provides advanced tertiary treated water to the City. Recycled water is produced at the San José-Santa Clara Regional Wastewater Facility (Facility). The City displaced approximately 17 percent of its overall water use with recycled water purchased from the SBWR (City of Santa Clara, 2016). Recycled water provided by the City is used for the nonpotable needs of businesses, industries, parks, and schools located along pipeline routes. Recycled water demand for these needs in 2015 was 3,529 acre-feet (City of Santa Clara, 2016). The nearest recycled water line is located at Mission College Boulevard and Juliette Lane, approximately 0.3 mile from the project site.

3.19.1.3 Wastewater Service

The City's Water and Sewer Utility is responsible for the wastewater system. Wastewater is conveyed from the City's sewer systems to the Facility, which is jointly owned by the cities of San José and Santa Clara, but operated by the San José Environmental Services Department. The Facility has a

treatment capacity of 167 million gallons per day with about 13 percent of the Facility's effluent being discharged to SBWR. The rest of the effluent is discharged to the San Francisco Bay under the facility's current Wastewater Discharge Requirements.

3.19.1.4 Storm Sewer Service

The City owns and operates a municipal storm drainage system that provides service to the project site. The project site drains by a combination of surface flow, bio-swales, and underground piping to the City's system located in Juliette Lane, which may drain into the San Tomas Aquino Creek, located near to the project site. The creek drains into the San Francisco Bay.

3.19.1.5 Solid Waste

Mission Trail Waste System is under contract with Santa Clare to provide solid waste and recycling collection for commercial and institutional parcels located in the city. Santa Clara has a contract with the Newby Island Landfill, located in San José, to provide disposal capacity to the City through 2024. The Santa Clara County Integrated Waste Management Plan estimates that adequate waste capacity exists through 2024. The Newby Island Landfill can accept up to 3,260 tons of solid waste per day and is estimated to have 21.2 million cubic yards of existing capacity remaining.

3.19.1.6 Electrical Services

Electrical services for the City are supplied by Silicon Valley Power (SVP), which uses a mix of city-owned generating facilities and purchased power from other suppliers such as Western Area Power Administration, Northern California Power Agency and other Joint Powers Agencies. SVP purchased a total of approximately 3.7 billion kilowatt hours in 2017 (SVP, 2017), with commercial consumption accounting for approximately 2.7 percent of the total monthly sales. The project site includes a new, onsite 60-kilovolt substation with an electrical supply line that will connect to an SVP distribution line located to the west.

3.19.1.7 Regulatory Background

3.19.1.7.1 Federal Clean Water Act

The State Water Resources Control Board, 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 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 project by complying with applicable National Pollutant Discharge Elimination System permits from the State Water Resources Control Board or the San Francisco Bay RWQCB.

3.19.1.7.2 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 project developments. The code sections require public water systems to prepare water supply assessments for certain defined development projects subject to the California Environmental Quality Act.

The City has requested that the Applicant submit a water supply assessment application (see Attachment 3.19-1). However, considering the project site has been in commercial/industrial use since the 1960s, it is unlikely that the City will determine that sufficient water supplies do not exist.

3.19.1.7.3 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.

3.19.1.7.4 City of Santa Clara General Plan

The Santa Clara General Plan (2014) 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 (City, 2013).

3.19.1.7.5 Santa Clara City Code

City Code Section 8.25.285 requires applicants seeking building or demolition permits for projects greater than 5,000 square feet to recycle at least 50 percent of construction/demolition wastes (City, 2018). Furthermore, Section 8.25.275 requires commercial businesses to contract with commercial recycling services if more than 4 cubic yards of wastes are generated per week (City, 2018).

3.19.2 Environmental Impacts and Mitigation Measures

a) Would the project require, or result in the relocation or construction of new or expanded water, wastewater treatment, or stormwater drainage, electric power, natural gas, or telecommunications facilities the construction or relocation of which could cause significant environmental effects?

Less than Significant Impact. Operational workforce is estimated to be approximately 54 employees onsite daily, with a daily water usage for sanitary, landscaping, and process uses of approximately 640 gallons per minute on an annual average basis. The project is expected to generate a maximum daily discharge rate of up to 275 gallons per minute of wastewater and an annual average of approximately 145 million gallons per year. Project operations will not require expanding water services or wastewater treatment beyond the capacity of the existing facilities and the impact to water services and wastewater treatment facilities would be less than significant.

The existing site is nearly covered with impervious surfaces and includes stormwater collection and disposal facilities throughout the parcel. The LDC will include a stormwater collection system that includes stormwater bio-swales to reduce the overall runoff into the City's collection system and to control sedimentation impacts. The stormwater design will comply with both the City's and RWQCB's requirements. Therefore, the impacts will be less than significant.

The project will use approximately 867,240,000 kilowatt-hours of electricity annually. Electrical resources available to SVP are reliable, and SVP and its suppliers have ample energy to serve the expected future demand of the utility. Electrical demand during project operations would not be substantial on a regional or statewide scale and would not affect existing users. The project would not require new or expanded electric power utilities; therefore, potential impacts are less than significant.

b) Would the project have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry, and multiple dry years?

Less than Significant Impact. The project is expected to use about 1,032 acre-feet per year of potable water. The use of potable water will be not impact local potable water supplies and sufficient water supplies are available to support the project. The impacts from the project on water supplies will be less than significant.

c) Would the project 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?

Less than Significant Impact. The project will not result in a significant wastewater discharge, and impacts from the project on the wastewater system capacity will be less than significant.

d) Would the project generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?

Less than Significant Impact. The Newby Island Landfill in San José (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. During operations, the project is expected to generate approximately 140 pounds per day (or 0.07 tons/day) of solid waste, representing an insignificant decrease in the maximum daily amount of solid waste (3,260 tons/day) allowed at the Newby Island Landfill.

Additionally, the project will comply with City requirements to recycle up to 50 percent of its construction and demolition wastes. Therefore, the project will not impair the City's ability to meet its solid waste reduction goals. The impact resulting from the project on landfill capacity would be less than significant.

e) Would the project comply with federal, state, and local management and reduction statutes and regulations related to solid waste?

Less than Significant Impact. The project's solid wastes would be disposed of in accordance with the federal CWA and with the state of California's and the City's requirements for safe waste handling and disposal. Impacts will be less than significant.

Previously Identified Mitigation Measures: None.

New Proposed Mitigation Measures: None.

3.19.3 References

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3.20 Wildfire

If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Substantially impair an adopted emergency response plan or emergency evacuation plan?	☐	☐	☐	☒
b) Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?	☐	☐	☐	☒
c) Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines, or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?	☐	☐	☐	☒
d) Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?	☐	☐	☐	☒

Environmental checklist established by CEQA Guidelines, Appendix G.

3.20.1 Setting

The project site is surrounded by urban development in the city of Santa Clara, is not located in a State Responsibility Area, and is not located in lands classified as very high fire hazard severity zones. The city of Santa Clara is not identified to be within a State of California Fire Hazard Severity Zone (Cal Fire, 2019) at the wildland and urban interface, and is not in the vicinity of wildlands.

3.20.2 Environmental Impacts and Mitigation Measures

Although the project is not located in either a State Responsibility Area or in lands classified as very high fire severity zones, a brief discussion of the Appendix G screening criteria relating to potential fire hazard impacts is provided in this section.

a) Would the project substantially impair an adopted emergency response plan or emergency evacuation plan?

No Impact. During project construction, traffic levels will experience a minimal increase that is not expected to degrade traffic performance significantly. Emergency response access during the construction will not be significantly impeded. The project will 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 will 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 will not interfere with the coordination of the City's emergency operations plan at the emergency operations center or alternate emergency operations center, nor will the project interfere with any statewide emergency response, or evacuation routes or plans. Adequate emergency access to the project site and surrounding industrial area will be maintained.

b) Due to slope, prevailing winds, and other factors, exacerbate wildfire risk, and thereby expose project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?

No Impact. The topography of the project site is flat and the project area is highly developed with minimal open spate areas, faces, or slopes. Therefore, the project will not exacerbate wildfire risk or expose occupants to pollutant concentrations from a wildfire.

c) Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines, or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?

No Impact. The project will require a single offsite feature, the installation of an electrical distribution line to the onsite substation. The distribution line will be located within a public utility corridor located on the southern part of the Laurelwood Data Center site and the adjacent parcel, and will cross the San Tomas Aquino Creek Trail at sufficient height to allow passage of emergency vehicles. Therefore, the construction of the distribution line will not block access to any road or result in traffic congestion. Maintenance of this infrastructure will not physically block any access roads or result in traffic congestion that could significantly compromise timely access to this facility or any other location.

d) Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?

No Impact. The project is in a low flood potential area. Construction and operation of the project will not alter the course of a drainage (stream or river) and will not substantially alter local drainage patterns. The proposed onsite storm drainage system will be sized adequately to convey water away from the site and to the City of Santa Clara's storm drain system. The project will therefore not contribute to a flooding hazard onsite or offsite.

As discussed in this section, the topography of the project site and surrounding area is relatively flat and highly developed. Therefore, the project will not be exposed to post-fire slope instability or drainage changes.

Previously Identified Mitigation Measures: None.

New Proposed Mitigation Measures: None.

3.20.3 References

Cal Fire. 2019. *Santa Clara County FHSZ Map in Local Responsibility Area*. Accessed February 11, 2019. http://www.fire.ca.gov/fire_prevention/fhsz_maps_santaclara.

3.21 Environmental Justice

3.21.1 Setting

Figure 3.21-1 shows 2010 census blocks in a 6-mile radius of Laurelwood Data Center (LDC) with a minority population greater than or equal to 50 percent (United States Census Bureau, 2010). The population in these census blocks represents an environmental justice (EJ) population based on race and ethnicity as defined in the U.S. Environmental Protection Agency's *Guidance on Considering Environmental Justice During the Development of Regulatory Actions* (2015).

Based on California Department of Education data in Table 3.21-1 and presented in Figure 3.21-2, the percentage of those living in the school districts of East Side Union High, Luther Burbank, San Jose Unified, and Santa Clara Unified (in a 6-mile radius of the project site) and enrolled in the free or reduced price meal program is larger than those in the reference geography. Therefore, those persons residing within these districts are considered an EJ population based on low income as defined in *Guidance on Considering Environmental Justice During the Development of Regulatory Actions* (EPA, 2015).

Table 3.21-1. Low Income Data within the Project Area

School Districts in 6-Mile Radius	Enrollment Used for Meals	Free or Reduced-price Meals	
Campbell Union	15,341	5,188	33.8%
Cupertino Union	18,017	1,170	6.5%
East Side Union High	27,263	14,560	53.4%
Luther Burbank	517	198	38.3%
Milpitas Unified	10,318	3,452	33.5%
Moreland Elementary	4,805	1,463	30.4%
Mountain View-Los Altos Union High	4,304	848	19.7%
San Jose Unified	31,713	14,479	45.7%
Santa Clara Unified	15,509	6,402	41.3%
Sunnyvale	6,536	2,005	30.7%
Reference Geography			
Santa Clara County	249,217	86,960	34.9%

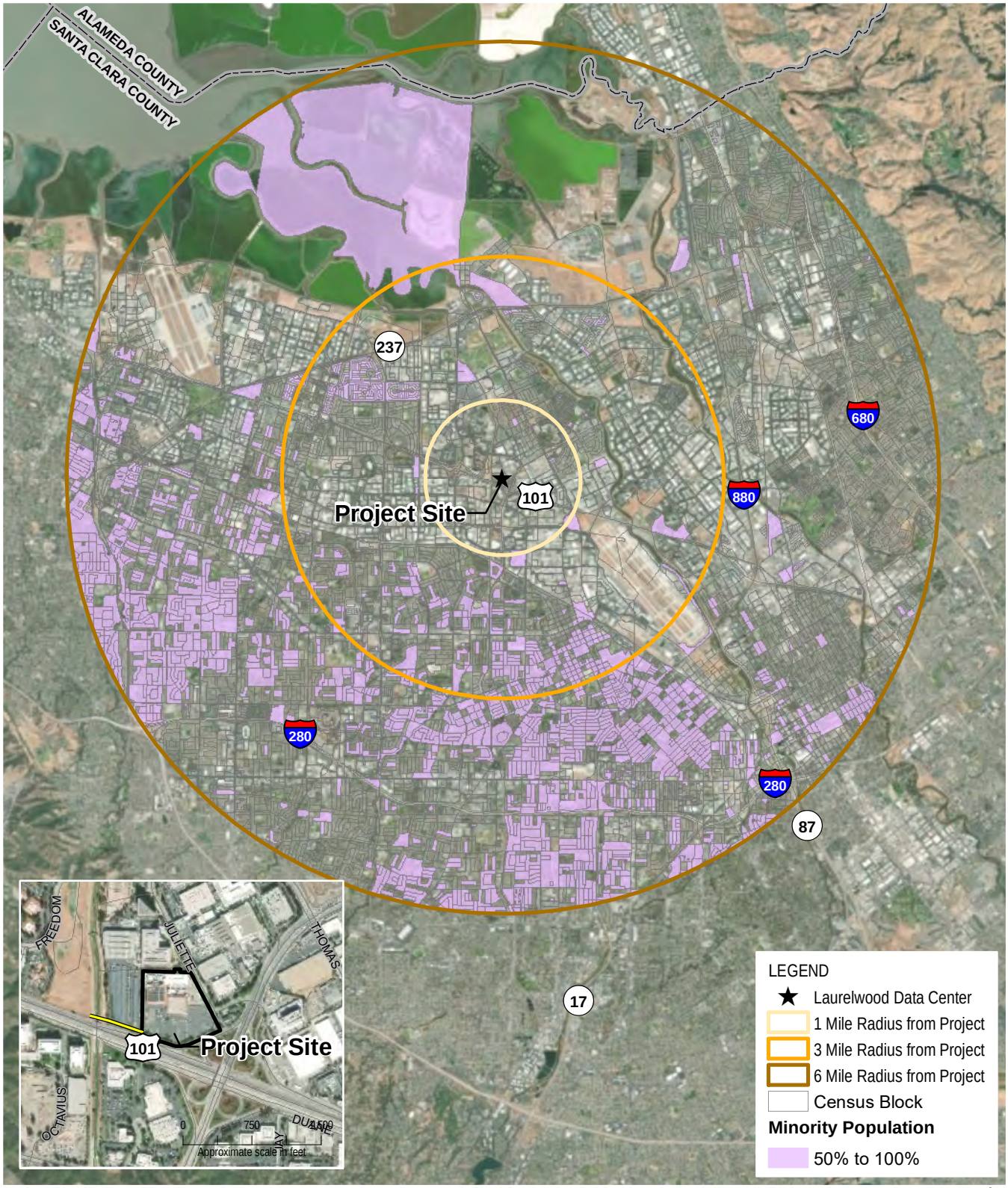
Source: CDE, 2018

3.21.2 Environmental Impacts and Mitigation Measures

The following technical areas discuss potential 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 on Figure 3.21-1, the project site is located approximately 0.75 mile south of the nearest high minority population. This high minority population area would not fall within the project's foreground viewshed or visual sphere of influence.



Source:
County of Santa Clara
U.S. Census Bureau, 2010 Census.

Figure 3.21-1
Minority Population Distribution by Census Blocks within 6 Miles of Proposed Project
Laurelwood Data Center
Santa Clara, California

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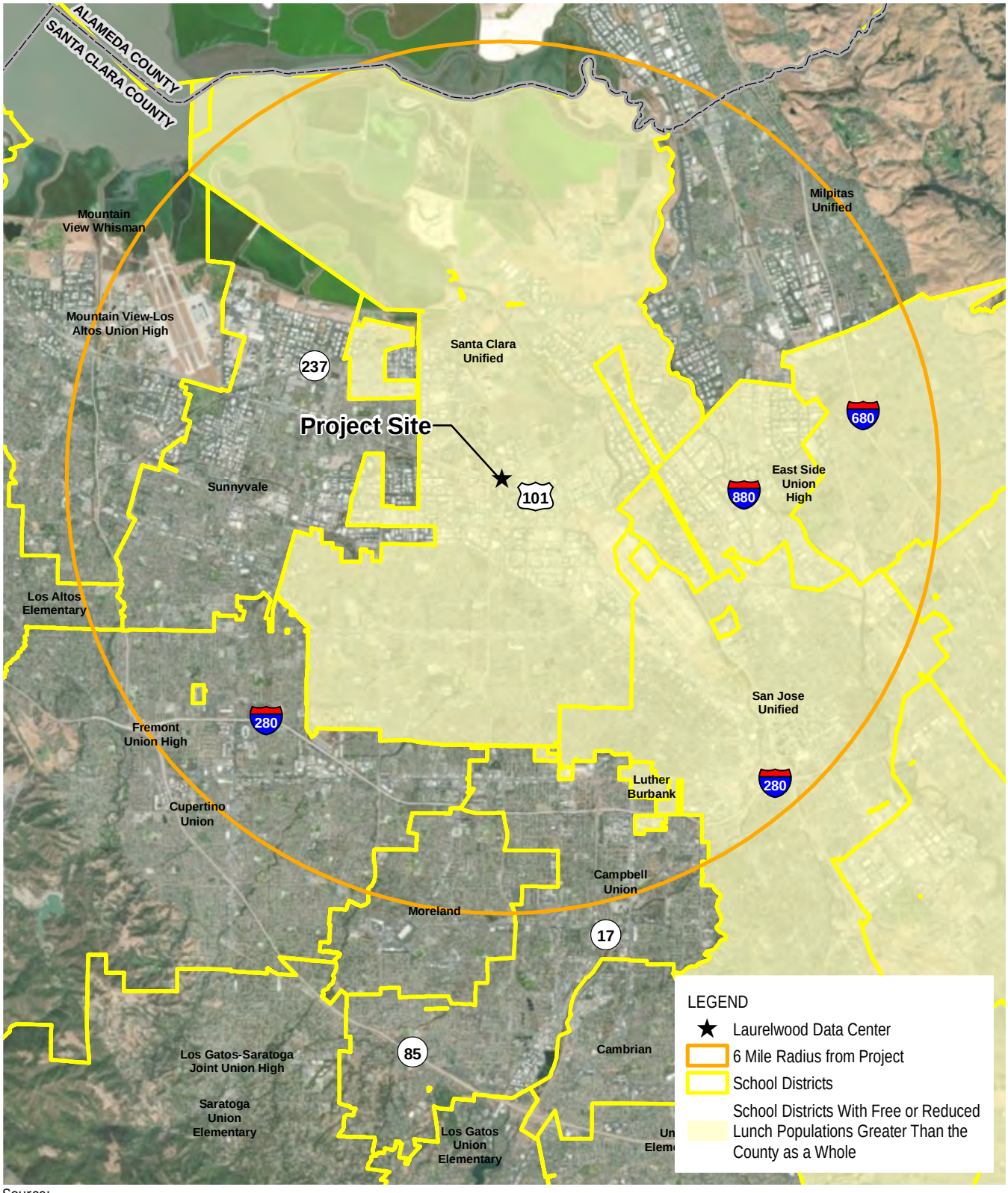

Source:
County of Santa Clara
U.S. Census Bureau, 2010 Census.

Figure 3.21-2
Low Income Population Distribution by Census Blocks within 6 Miles of Proposed Project
Laurelwood Data Center
Santa Clara, California

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As depicted on Figure 3.21-2, the project site is located in an area with a low-income population. However, the proposed buildings would be visually similar to the surrounding land uses, which primarily include manufacturing 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 (City) 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 low-income population in which the project site is located.

Air Quality. *Less Than Significant Impact.* Potential public health impacts (cancer and non-cancer health effects) were identified that could affect the EJ population represented on Figures 3.12-1 and 3.21-2. 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 and hazardous air pollutants/toxic air contaminants in the diesel exhaust. It was determined that no one (including the public, offsite nonresidential workers, recreational users, and EJ populations) will be exposed to a significant cancer or non-cancer (acute or chronic) health risk construction or operation of the project. Therefore, the project will not cause significant adverse direct or indirect public health impacts due to hazardous air pollutants or toxic air contaminant emissions and no mitigation is needed. Likewise, the project would not cause disproportionate public health impacts on sensitive populations, such as the EJ population represented on Figures 3.21-1 and 3.21-2.

Less Than Significant Impact. The analysis considers the most sensitive and most protective of the population, which includes the EJ population. An air quality analysis found that air quality impacts during the construction of the project would be less than significant and air quality impacts for all attainment criteria pollutants during LDC operation will be less than significant. Construction and operational emissions from the project will not 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 on Figures 3.21-1 and 3.21-2.

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 will store in greatest quantity. The total quantity will be stored in many separate double-walled fuel tanks (one for each generator) with proper spill controls. Furthermore, diesel fuel has a very low vapor pressure that limits the offsite migration of any accidental spills. Therefore, the likelihood of a spill of sufficient quantity to impact the surrounding community and EJ population is very unlikely, and this impact is considered less than significant.

Hydrology and Water Quality. *Less Than Significant Impact.* A disproportionate hydrologic or water quality impact on an EJ population occurs 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 will use mechanical chillers for cooling and is expected to use approximately 1,032 acre-feet of water per year for process, sanitary, and landscaping purposes.

The project is not expected to contribute significantly to surface water or groundwater degradation. The project will be required to comply with the Clean Water Act by controlling the discharge of pollutants in stormwater during its construction and operation phases. The project will implement modern operational stormwater controls that would improve upon the site's existing stormwater discharge controls. The project is therefore expected to provide a long-term water quality benefit and will not result in a

disproportionate impact to the local EJ population. The project's hydrology and water quality impacts will 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 physically divides an established community of an EJ population or if a project near an EJ population conflicts with applicable land use plans, policies, or regulations adopted for the purpose of avoiding or mitigating environmental impacts on a population.

The project does not divide an existing community, as the site is on land designated and zoned for uses such as a data center and is surrounded by manufacturing and commercial uses. The project is consistent with the City's General Plan land use designation (2010) and with approval of the zoning administrator minor modification to allow a building height increase up to 25 percent; the project is consistent with the zoning district. No conflicts with plans, policies, or related land use regulations will occur.

The project does not pose significant individual impacts relating to land use and planning; therefore, no disproportionate impacts on the EJ population will occur.

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 on Figures 3.21-1 and 3.21-2, the project site is within an area having an EJ population. Because the area surrounding the site is primarily industrial, warehouse, and commercial uses, and the nearest residences are at least 0.5 mile to the north of the project site, potential impacts will not be disproportionate.

Construction activities will increase existing noise levels at the adjacent manufacturing and commercial land uses, but they will be temporary and intermittent. In addition, construction will not occur on weekends and holidays in compliance with City Code, Section 9.10.040. Therefore, potential noise effects related to construction will 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 will not exceed the City's noise limits at the nearest land uses. Therefore, the operational noise impacts will 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*. 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 will be drawn from the greater Bay Area and thus will 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 will not likely seek housing closer to the project site. If some of the 54 operations workers were to relocate closer to the project site, there is 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 is not expected to displace any residents or remove any housing, there will be no disproportionate impact to EJ populations from this project.

Transportation and Traffic. *Less Than Significant Impact*. Significant reductions in transportation levels of service 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, will be less than significant, and therefore

will cause a less than significant impact to EJ populations. Likewise, transportation and traffic impacts will not be disproportionate.

Tribal Cultural Resources. *No Impact*. No Native American EJ populations were identified that either reside within 6 miles of the project or that rely on any subsistence resources that could be impacted by the 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.

The project will use potable water for process, sanitary and landscaping uses. If recycled water becomes available near the project site, it will be used to replace potable water to the extent feasible to preserve potable water for other uses. The use of potable water by the project will 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, a very small portion of which will be used by the project. No changes or expansion to the landfill or wastewater treatment facility are needed to accommodate this project. The project will also be required to comply with state and local regulations that apply to construction and operation waste. These regulations require that wastes are managed consistent with waste diversion goals/objectives to protect public health and safety. The project will therefore not have a disproportionate impact on the EJ population.

The project's utilities and service systems impacts will be less than significant for all the area's population, including the EJ population.

Mandatory Findings of Significance. *Less Than Significant.* Cumulative project impacts will be less than significant for both the general population and the EJ population.

3.21.3 References

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City of Santa Clara. 2010. *City of Santa Clara General Plan 2010-2035*. November 16.

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United States Census Bureau. 2010. *American FactFinder.* 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.

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2.0	Project Description	Jerry Salamy	Jacobs
3.0	Environmental Information		
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3.3	Air Quality	Elyse Engel	Jacobs
3.4	Biological Resources	Kevin Fisher	Jacobs
3.5	Cultural Resources	Christina Alonso, Clint Helton	PaleoWest Archaeology
3.6	Energy	Sarah Madams	Jacobs
3.7	Geology and Soils	Maliheh Rostami, Levi Pratt	Jacobs
3.8	Greenhouse Gas	Elyse Engel	Jacobs
3.9	Hazards and Hazardous Materials	Alex Klisiaris	Jacobs
3.10	Hydrology and Water Quality	Matt Franck	Jacobs
3.11	Land Use and Planning	Brenda Eells	Jacobs
3.12	Mineral Resources	Alex Klisiaris	Jacobs
3.13	Noise	Joe Aguirre	Jacobs
3.14	Population and Housing	Maliheh Rostami	Jacobs
3.15	Public Services	Heather Waldrop	Jacobs
3.16	Recreation	Maliheh Rostami, Sarah Madams	Jacobs
3.17	Transportation	Lisa Valdez, Jerry Salamy	Jacobs
3.18	Tribal Cultural Resources	Christina Alonso, Clint Helton	PaleoWest
3.19	Utilities and Service Systems	Heather Waldrop	Jacobs
3.20	Wildfire	Jessica Baldridge	Jacobs
3.21	Environmental Justice	Brenda Eells	Jacobs