Facebook Campus Expansion Project
Draft EIR

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DRAFT

FACEBOOK CAMPUS EXPANSION PROJECT ENVIRONMENTAL IMPACT REPORT

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Acronyms and Abbreviations

AB	Assembly Bill
AB 939	California Integrated Waste Management Act of 1989
ABAG	Association of Bay Area Governments
ACMs	asbestos-containing materials
ADA	Americans with Disabilities Act
ADMP	Asbestos Dust Mitigation Plan
ADT	average daily traffic
Agreement	Water Supply Agreement
AMI	Area Median Income
AR4	IPCC Fourth Assessment Report
ARB	Air Resources Board
ATCM	Airborne Toxic Control Measure
BAAQMD	Bay Area Air Quality Management District
BART	Bay Area Rapid Transit
BAT	best available technology
BAU	business as usual
BAWSCA	Bay Area Water Supply and Conservation Agency
Bay	San Francisco Bay
Bay Area	San Francisco Bay Area
Bay Trail	San Francisco Bay Trail
Bayfront Park	Bedwell Bayfront Park
BCDC	Bay Conservation and Development Commission
BFE	base flood elevation
bgs	below ground surface
BMPs	best management practices
BMR	below market rate
BTUs	British thermal units
C/CAG	City/County Association of Governments of San Mateo County
C&D	construction and demolition
CAA	Clean Air Act
CAAQS	California Ambient Air Quality Standards
CAFE	Corporate Average Fuel Economy

CAL FIRE	California Department of Forestry and Fire Protection
Cal Water	California Water Services Company
Cal/OSHA	California Division of Occupational Safety and Health
CalEEMod	California Emissions Estimator Model
CalEPA	California Environmental Protection Agency
CALGreen	California Green Building Standards Code
CalRecycle	California Department of Resources Recycling and Recovery
Caltrans	California Department of Transportation
CAP	Climate Action Plan
CARB	California Air Resources Board
CBC	California Building Code
CBIA	California Building Industry Association
CBSC	California Building Standards Code
CCO	Contra Costa County
CCR	California Code of Regulations
CCST	California Center for Science and Technology
CDFW	California Department of Fish and Wildlife
CDP	Conditional Development Permit
CEQA	California Environmental Quality Act
CESA	California Endangered Species Act
CFGC	California Fish and Game Commission
CFR	Code of Federal Regulations
CGS	California Geological Survey
CH_4	methane
CHHSLs	California Human Health Screening Levels
CII	Commercial, Industrial, and Institutional
CIP	capital improvement program
City	City of Menlo Park
CIWMP	Countywide Integrated Solid Waste Management Plan
CMAs	congestion management agencies
CMP	Congestion Management Plan
CNDDB	California Natural Diversity Database
CNEL	Community Noise Equivalent Level
CNPS	California Native Plant Society

CO	carbon monoxide
CO-CAT	California Climate Action Team
CO_2	carbon dioxide
CO_2e	carbon dioxide equivalent
ConnectMenlo	ConnectMenlo Land Use and Mobility Update
County	San Mateo County
CPUC	California Public Utilities Commission
CRHR	California Register of Historical Resources
CUPAs	Certified Unified Program Agencies
CWA	Clean Water Act
cy	cubic yards
dB	decibel
dBA	A-weighted decibel
dBA L_{eq}	decibels, equivalent sound level
DBX	Dumbarton Express Bus
Department	Menlo Park Community Services Department
DHS	Department of Health Services
DOE	Department of Energy
DOF	Department of Finance
DPM	diesel particulate matter
DPR	California Department of Pesticides Regulation
DTA	Dynamic Traffic Assignment
DTSC	Department of Toxic Substance Control
DWR	Department of Water Resources
E3	Energy + Environmental Economics
EIR	Environmental Impact Report
EKI	Erler & Kalinowski, Inc.
ENR	Engineering News-Record
EOs	executive orders
EPA	U.S Environmental Protection Agency
ESA	Endangered Species Act
ESLs	Environmental Screening Levels
EVA	emergency vehicle access
FAR	floor area ratio

FEMA	Federal Emergency Management Agency
FHSZ	Fire Hazard Severity Zone
FHWA	Federal Highway Administration
FIRM	Flood Insurance Rate Map
FTA	Federal Transit Administration
FY	fiscal year
G&D	grading and demolition
GE	General Electric
General Plan	City of Menlo Park General Plan
GHG	greenhouse gas
gpd	gallons per day
gsf	gross square feet
GWP	global warming potential
H&SC	Health and Safety Code
HCD	Housing and Community Development
HFC	hydrofluorocarbons
HHRA	Human Health Risk Assessment
HI	hazard index
HI	Hazard Index
HMPs	Hydromodification Management Plans
HOV	high-occupancy vehicle
HVAC	heating, ventilating, and air-conditioning
ICF	ICF International
IFC	International Fire Code
IPCC	Intergovernmental Panel on Climate Change
IRMs	Interim Remedial Measures
ISA	International Society of Arboriculture
ISG	Individual Supply Guarantee
ISL	Interim Supply Limitation
ITE	Institute of Transportation Engineers
JPA	joint powers authority
LAFCOs	Local Agency Formation Commissions
lb/kWh	pounds per kilowatt hour
LBP	lead-based paint

L_{dn}	day-night level
LEED	Leadership in Energy and Environmental Design
L_{eq}	equivalent sound level
LID	low-impact development
L_{max}	maximum sound levels
LOS	level of service
LT	long-term
LTS	less-than-significant
LUC	Land Use Covenant
MAA	Management Agency Agreement
MBTA	Migratory Bird Treaty Act
MCE	Maximum Credible Earthquake
MFHH	multi-family household
mg/L	milligrams per liter
mgd	million gallons per day
MIT	Massachusetts Institute of Technology
MM	Moment Magnitude
MMRP	Mitigation Monitoring and Reporting Program
MPCSD	Menlo Park City School District
MPFPD	Menlo Park Fire Protection District
mpg	miles per gallon
mph	miles per hour
MPM	Menlo Park Model
MPMWD	Menlo Park Municipal Water District
MPPD	Menlo Park Police Department
MPPS	Menlo Park Pumping Station
MRZ	Mineral Resource Zones
MS4s	Municipal Separate Storm Sewer Systems
msl	mean sea level
MT	metric tons
MTC	Metropolitan Transportation Commission
Municipal Code	City of Menlo Park Municipal Code
N_2O	nitrous oxide
NAAQS	National Ambient Air Quality Standards

NAHC	Native American Heritage Commission
NAVD	North American Vertical Datum
NB	northbound
NFIP	National Flood Insurance Act
NHPA	National Historic Preservation Act
NHSTA	National Highway Traffic Safety Administration
NI	no impact
NMFS	National Marine Fisheries Service
NO	nitric oxide
NO_2	nitrogen dioxide
NOAA	National Oceanic and Atmospheric Administration
NOI	Notice of Intent
NOP	Notice of Preparation
NO_X	nitrogen oxides
NPDES	National Pollutant Discharge Elimination Program
NPPA	Native Plant Protection Act
NRC	National Research Council
NRCS	National Resources Conservation Service
NRHP	National Register of Historic Places
NSR	New Source Review
NTU	nephelometric turbidity unit
NWIC	Northwest Information Center
OEHHA	Office of Environmental Health Hazard Assessment
OMMP	Operation, Maintenance, and Monitoring Plan
OPR	Governor's Office of Planning and Research
OSC	Open Space and Conservation
OSHA	Occupational Health and Safety Administration
Pb	lead
PCBs	polychlorinated biphenyls
PCE	Peninsula Clean Energy
PDAs	Priority Development Areas
PEIR	Program Environmental Impact Report
Peninsula	San Francisco Peninsula
PFC	perfluorinated carbons

PG&E	Pacific Gas and Electric
PM10	particulate matter less than or equal to 10 microns in diameter
PM2.5	particulate matter less than or equal to 2.5 microns in diameter
ppb	parts per billion
pph	persons per household
ppm	parts per million
PPV	peak particle velocity
PRC	Public Resources Code
Project	Facebook Campus Expansion Project
Project Sponsor	Hibiscus Properties, LLC
PS	potentially significant
PSD	Prevention of Significant Deterioration
R&D	research and development
RCNM	roadway construction noise model
RCRA	Resource Conservation and Recovery Act
RCSD	Ravenswood City School District
Refuge	Don Edwards San Francisco Bay National Wildlife Refuge
RES	Renewable Energy Standard
RethinkWaste	South Bayside Waste Management Authority
RHNA	Regional Housing Needs Allocation
RMS	root-mean-square
ROG	reactive organic gas
RPS	Renewable Portfolio Standard
RSL	Regional Screening Level
RTIP	Regional Transportation Improvement Project
RTP	Regional Transportation Plan
RWD	Report of Waste Discharge
RWQCB	Regional Water Quality Control Board
RWS	Regional Water System
SB	Senate Bill
SCL	Santa Clara County
SCS	Sustainable Communities Strategy
SDWA	Safe Drinking Water Act
sf	square feet

SF_6	sulfur hexafluoride
SFBAAB	San Francisco Bay Area Air Basin
SFHA	Special Flood-Hazard Area
SFHH	single-family household
SFPUC	San Francisco Public Utilities Commission
SIP	State Implementation Plan
SLAC	Stanford Linear Accelerator Center
SLR	sea level rise
SMCWPPP	San Mateo Countywide Water Pollution Prevention Program
SO_2	sulfur dioxide
Specific Plan	El Camino Real/Downtown Specific Plan
SR	State Route
SR 84	Bayfront Expressway
SRI	Stanford Research Institute
SSC	Species of Special Concern
SU	significant and unavoidable
SUHSD	Sequoia Union High School District
SVCW	Silicon Valley Clean Water
SVP	Society of Vertebrate Paleontology
SWMP	Stormwater Management Plans
SWMUs	Solid Waste Management Units
SWPPP	Storm Water Pollution Prevention Plan
SWRCB	State Water Resources Control Board
TACs	toxic air contaminants
Tanner Act	Toxic Air Contaminant Identification and Control Act
TAZ	traffic analysis zone
TCE	trichloroethylene
TCMs	traffic control measures
TDM	Transportation Demand Management
TDS	total dissolved solids
TE	TE Connectivity
TIA	Transportation Impact Analysis
TIF	transportation impact fee
TM2	Travel Model Two

TMDL	total maximum daily load
TNM	traffic noise model
TPHd	total petroleum hydrocarbons as diesel
TPHg	total petroleum hydrocarbons as gasoline
TPHmo	total petroleum hydrocarbons as motor oil
TPP	Transit Priority Project
TSCA	Toxic Substances Control Act
U.S. Census	United States Census Bureau
USACE	U.S. Army Corps of Engineers
USAR	urban search and rescue
USC	United States Code
USDOT	U.S. Department of Transportation
UWMP	Urban Water Management Plan
v/c	volume-to-capacity
VdB	vibration decibel level
VegCAMP	Vegetation Classification and Mapping Program
VMT	vehicle miles traveled
VOCs	volatile organic compounds
WBSD	West Bay Sanitary District
WCIP	Water Conservation Implementation Plan
WDRs	waste discharge requirements
WSA	Water Supply Assessment
WSAP	Water Shortage Allocation Plan
WSIP	Water System Improvement Program
WTP	Water Treatment Plant
ZNE	zero net energy
$\mu g/m^3$	micrograms per cubic meter

Executive Summary

Project Overview

Hibiscus Properties, LLC (Project Sponsor), an affiliate of Facebook, Inc., is proposing to redevelop an existing approximately 58-acre industrial site, known as the TE Connectivity (TE) Campus, by demolishing existing onsite buildings and landscaping and constructing two new office buildings and a hotel (Project). The Project would expand the existing Facebook Campus, which currently consists of Buildings 10–19 (formerly known as the East Campus), located north of Bayfront Expressway/State Route (SR) 84; Building 20, located east of the Project site; and Building 23, located at the western end of the Project site and currently undergoing tenant improvements.

The two proposed office buildings (Buildings 21 and 22) would encompass approximately 962,400 gross square feet (gsf). In addition, the Project includes a 200-room limited-service[1] hotel with approximately 174,800 gsf. Development of the office buildings and hotel would result in a net increase of approximately 121,300 gsf at the Project site. The Project Sponsor is also proposing a trip cap as part of the Project to limit the number of daily and peak-period trips (AM and PM) and reduce traffic impacts. Although Building 20 is currently subject to a trip cap under a prior entitlement process, the Project would implement a trip cap that would apply to both the Project site (including Building 23) and Building 20. In addition, the Project would include a Transportation Demand Management (TDM) program to promote alternatives to private automotive travel and reduce the number of single-occupancy vehicle trips as well as the resulting traffic and greenhouse gas (GHG) emissions.

Building 21 would be constructed during the first phase of development. Building 21 would be connected to the existing Building 20 through an enclosed bridge. Building 22 would be constructed during the second phase of development. It is anticipated that Building 22 would be connected to Building 21 through an open-air bridge. The hotel would be located near the corner of Chilco Street and SR 84 and also constructed in the second phase. The Project would provide approximately 3,533 parking spaces for the office buildings, hotel, and Building 23.[2,3] The office buildings and the hotel would be approximately 75 feet in height.

The Project would be organized around a publicly accessible open space that would provide a connection to the San Francisco Bay Trail (Bay Trail) and a gathering space for the community. A multi-use bicycle/pedestrian bridge over SR 84 would allow access to the Bay Trail and Bedwell Bayfront Park (Bayfront Park) from the Project site and the Belle Haven neighborhood. The Project would also include bicycle/pedestrian pathways that would be separated from the internal vehicle access roads where feasible. The onsite paths would connect the proposed office buildings to the existing Building 20 east of the Project site and Facebook Buildings 10–19 north of SR 84. In addition, a new 1-acre terraced garden space, for employee use, would be provided between Buildings 20 and 21. The perimeter of the Project site would have a landscaped buffer. As a separate project, Facebook (in partnership with the City) is

[1] A limited-service hotel generally offers fewer services (e.g., in-house drinking and dining options) than a full-service hotel.

[2] If the hotel is constructed, then the parking spaces associated with the hotel would be in a surface parking lot under the podium of the hotel. If the hotel is not constructed, then a surface parking lot with the same number of spaces would be provided in the northwestern portion of the Project site.

[3] Building 23 is not part of the Project but is on the Project site. The parking spaces developed as part of the Project would be available to Building 23.

constructing bicycle and pedestrian improvements on Chilco Street, along the perimeter of the site, to improve bicycle and pedestrian safety in the area. The frontage improvements would also include landscaping along the frontage.

The Project site is zoned M-2 (General Industrial) and M-2(X) (General Industrial, Conditional Development). The current conditional development permit and "X" combining district apply only to specific buildings that exceed the 35-foot height limit of the M-2 zoning district, not the overall site. It is designated as Limited Industry under the City of Menlo Park (City) General Plan and can be built out to approximately 1.142 million gsf for office uses under the allowable 0.45 floor area ratio (FAR) and up to approximately 1.396 million gsf (0.55 FAR) for other general industrial uses, including, but not limited to, warehousing, manufacturing, printing, assembling, related office and laboratory uses, and shipping and receiving. The Project would require the entire site to be rezoned from M-2 and M-2(X) to an M-2(X) to exceed the maximum 35-foot height limit. In addition, a Conditional Development Permit (CDP) would be incorporated as part of the Project to define development standards and create mechanisms for the City to process any revisions to the Project that might arise over the buildout period. The Project Sponsor also proposes to amend the zoning ordinance text to accommodate the proposed hotel and enter into a development agreement with the City to create vested rights in Project approvals and specify benefits to the City.

Areas of Controversy

California Environmental Quality Act (CEQA) Guidelines Section 15123 specifies that the Draft Environmental Impact Report (EIR) summary identify "areas of controversy" known to the Lead Agency, including issues raised by agencies and the public.

A Notice of Preparation (NOP) was released for the Project on June 18, 2015, for a 30-day public review period. A public scoping meeting was held before the City's Planning Commission on July 13, 2015. This summary list is based on written comments received (included in Appendix 1 of this Draft EIR) and comments stated during the public scoping meeting. The topics that would result in physical impacts under CEQA are addressed in the EIR analysis. Potential areas of controversy include those listed below.

Land Use

- Relationship with General Plan Update and M-2 Zoning Area Update
- Jobs/housing imbalance

Transportation

- Project-related trip generation, distribution, and assignment
- Preparation of a traffic impact study that includes a scenario for event traffic
- City's financial responsibility related to roadways, streets, intersections, and mitigation measures
- Signalization of right-turn in/out driveway at the 1 Facebook Way entrance
- Analysis of alternatives and impacts on SR 84
- Transportation Demand Management program

- Impacts on bicyclists and pedestrians from mitigation measures
- Lack of public transportation
- Bicycle and pedestrian traffic and circulation in North Fair Oaks
- Traffic in North Fair Oaks, in the Belle Haven neighborhood, on Willow Road, on Middlefield Road, and in other areas
- Encroachments onto and safety and security issues related to the Dumbarton Rail Corridor as a future transportation system
- Project impacts on the feasibility of building the Dumbarton Rail Trail

Air Quality

- Air pollution due to traffic

Cultural Resources

- Current archaeological record search if construction activities are proposed within the state right-of-way
- Cultural resource study and Native American consultation

Biological Resources

- Intrusion into the Don Edwards National Wildlife Refuge
- Access to the Don Edwards National Wildlife Refuge by predators
- Perching of avian predators on bicycle/pedestrian bridge
- Expected lifetime of bridge, considering SAFER Bay project plans
- Noise, light, and disturbance to wildlife and habitat

Hydrology/Flood Hazards

- Hydraulic report and drainage plans
- Maintenance responsibility for runoff and underground and surface drains
- Levees and flood-protection systems
- Sea-level rise

Hazardous Materials

- Toxic cleanup
- Emergency access response times due to increased traffic

Population and Housing

- Local affordable housing
- Higher office space densities for employees

- Growth-inducing impacts
- Potential displacement of East Palo Alto residents

Public Services

- Environmental setting, standard of significance, impacts on Fire Station 77, Project and cumulative impacts on the Fire District, impacts due to Project features, Standards of Cover Assessment, and Draft Nexus Impact Fee Report
- School capacity

Project Alternatives

Chapter 5 of this Draft EIR, *Alternatives*, analyzes the following reasonable alternatives to the Project.

- **No Project Alternative.** The No Project Alternative is provided in this Draft EIR to compare the impacts of the Project with what would be reasonably expected to occur in the foreseeable future if the Project were not approved and development continued to occur in accordance with existing plans and consistent with available infrastructure and community services (CEQA Guidelines Section 15126.6(e)(2)).
- **Reduced Intensity Alternative.** The Reduced Intensity Alternative assumes a 30 percent reduction in building area and the number of employees. As discussed in Chapter 5, the Reduced Intensity Alternative is the Environmentally Superior Alternative.

As outlined above, Chapter 5, *Alternatives*, presents alternatives for the Project. The Reduced Intensity Alternative would not avoid all significant and unavoidable impacts of the Project. The City will need to resolve whether the Reduced Intensity Alternative, or another alternative that has not yet been considered, is preferable from an environmental and community perspective compared to the Project.

Impacts and Mitigation Measures

Table ES-1 presents a summary of the impacts of the Project, proposed mitigation and improvement measures, and each impact's level of significance after mitigation. The environmental impacts are identified and classified as "Significant," "Potentially Significant," "Less than Significant," or "No Impact." According to State CEQA Guidelines Section 15382, a significant impact is "… a substantial, or potentially substantial, adverse change in any of the physical conditions within the area affected by the project…" State CEQA Guidelines Section 15126.4(a)(1) also states that an EIR "… shall describe feasible mitigation measures which could minimize significant adverse impacts…" Mitigation measures are identified for all impacts labeled as "Potentially Significant."

Draft EIR Conclusions

In accordance with State CEQA Guidelines Section 15123(b)(3), this summary section must identify issues to be resolved, including whether or how to mitigate the significant effects and the choice among alternatives. Chapter 3 of the Draft EIR, *Environmental Impact Analysis*, presents mitigation measures to

reduce or avoid significant impacts identified for the Project. A Mitigation Monitoring and Reporting Program (MMRP) will be prepared to define the timing of implementation of the measures, the parties who will be responsible for implementation, and the parties who will be responsible for reporting and verifying implementation.

The Draft EIR identifies impacts that would remain significant and unavoidable even after implementation of the mitigation measures. Consequently, the City will need to determine whether to approve the Project as proposed and, if so, provide its rationale in a Statement of Overriding Considerations.

How to Comment on This Draft EIR

This Draft EIR is considered a draft under CEQA because it must be reviewed and commented upon by public agencies, organizations, and individuals before being finalized. This document is being distributed for a 45-day (minimum) public review and comment period. Readers are invited to submit written comments on the document. Comments are most helpful when they suggest specific alternatives or measures that would better mitigate significant environmental effects. Hard copies of the Draft EIR are available for review at the Menlo Park Library located at 800 Alma Street. Electronic copies of the Draft EIR are available for review online at http://menlopark.org/1012/environmental-impact-report. Written comments should be submitted to:

Kyle Perata, Senior Planner
City of Menlo Park
Community Development Department, Planning Division
701 Laurel Street
Menlo Park, CA 94025
Email: ktperata@menlopark.org

To take oral comments on the Draft EIR, a public hearing will be held before the Planning Commission on June 20, 2016. Hearing notices will be mailed to responsible agencies and interested individuals.

Table ES-1. Summary of Impacts and Mitigation Measures

Impacts	Impact Significance Without Mitigation	Mitigation Measures	Impact Significance With Mitigation
3.1 Land Use			
Impact LU-1: Conflicts with Adopted Land Use Plans and Policies. The Project would not conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the Project (including, but not limited to, a general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect.	LTS	None required	N/A
Impact C-LU-1: Cumulative Land Use Impacts. The Project, in combination with other foreseeable development in the nine-county ABAG region, would not be inconsistent with applicable land use plans, policies, and regulations.	LTS	None required	N/A
3.2 Aesthetics			
Impact AES-1: Impacts on Scenic Vistas. The Project would not substantially affect scenic vistas.	LTS	None required	N/A
Impact AES-2: Degradation of Visual Character or Quality. The Project would not substantially degrade the existing visual character or quality of the site and its surroundings.	LTS	None required	N/A
Impact AES-3: New Sources of Light and Glare. The Project could create a new source of substantial light or glare that could adversely affect daytime or nighttime views in the area.	PS	***AES-3.1: Design Lighting to Meet Minimum Safety and Security Standards.*** Concurrent with the building permit submittal, the Project Sponsor shall incorporate lighting design specifications to meet minimum safety and security standards. The comprehensive site lighting plans shall be subject to review and approval by the City's Community Development Department, Planning Division, prior to building permit issuance for the first building on the site.	LTS

Impacts	Impact Significance Without Mitigation	Mitigation Measures	Impact Significance With Mitigation
		The following measures shall be included in all lighting plans. • Luminaries shall be designed with cutoff-type fixtures or features that cast low-angle illumination to minimize incidental spillover of light onto adjacent private properties. Fixtures that shine light upward or horizontally shall not spill any light onto adjacent private properties. • Luminaries shall provide accurate color rendering and natural light qualities. Low-pressure sodium and high-pressure sodium fixtures that are not color-corrected shall not be used, except as part of an approved sign or landscape plan. • Luminary mountings shall be downcast and pole heights minimized to reduce the potential for backscatter into the nighttime sky and incidental spillover onto adjacent properties and undeveloped open space. Light poles shall be no higher than 20 feet. Luminary mountings shall be treated with non-glare finishes. ***AES-3.2: Treat Reflective Surfaces.*** The Project Sponsor shall ensure the application of a low-emissivity coating on exterior glass surfaces of proposed structures. The low-emissivity coating shall reduce the reflection of visible light that strikes the exterior glass and prevent interior light from being emitted brightly through the glass.	
Impact AES-4: New Sources of Shadow. Shadows cast by the proposed structures would not shade open spaces or public areas for an extended period.	LTS	None required	N/A
Impact C-AES-1: Cumulative Degradation of Aesthetics. The Project, in combination with other foreseeable development in the surrounding area, would not have a significant cumulative impact on visual character or the quality of scenic vistas or	LTS	None required	N/A

Impacts	Impact Significance Without Mitigation	Mitigation Measures	Impact Significance With Mitigation
public view corridors and would not cumulatively contribute to new sources of light, glare, or shadows. This cumulative impact is less than significant.			
3.3 Transportation			
Impact TRA-1: Impacts on Peak-Hour Traffic at Study Intersections under Background Plus-Project Conditions. Increases in traffic associated with the Project would result in increased delays during peak hour, causing significant and unavoidable impacts on the operation of study intersections.	S	***TRA-1.1 Provide Increased Traffic Capacity on Peak-Hour LOS under Background-Plus Project Conditions.*** Mitigation Measure TRA-1.1 identifies potential measures to mitigate or reduce Project impacts where feasible.	SU
	PS	**a. Sand Hill Road & I-280 Northbound On-Ramp (#2)** During the p.m. peak hour, the intersection of Sand Hill Road and the I-280 northbound on-ramp (study intersection #2) operates unacceptably at LOS E under existing and background conditions, reflecting the delay experienced by westbound vehicles when approaching I-280. Traffic associated with the Project would increase average delay to approximately 19 seconds, exceeding the impact threshold of 4 seconds for Caltrans intersections. The increased delay could be mitigated by modifying signal timing during the p.m. peak hour to increase the allocation of green time to the westbound approach (by up to 10 seconds during the p.m. peak hour). However, as described below, this mitigation would not be necessary under background plus-Project conditions because Mitigation Measure TRA-1.2 (discussed below) would modify the Project trip cap to limit the number of vehicle trips that could occur during a single peak hour (see Mitigation Measure TRA 1.2). With implementation of Mitigation Measure TRA-1.2, the net increase in the number of vehicle trips resulting from the Project during the p.m. peak hour would be reduced by	LTS

Impacts	Impact Significance Without Mitigation	Mitigation Measures	Impact Significance With Mitigation
		more than 90 percent. Therefore, with Mitigation Measure TRA-1.2, the change in delay would not be anticipated to exceed 4 seconds, and the impact would be reduced to a less-than-significant level.	
	S	**b. Willow Road & Hamilton Avenue (#36)** During the p.m. peak hour, the intersection would be anticipated to operate unacceptably at LOS F under both background and background plus-Project conditions. Project traffic would increase delay and exceed the City threshold of 0.8 second for critical movements. The increase in delay reflects a forecast increase in left-turn volumes related to vehicles from the Project site traveling through residential neighborhoods via Chilco Street and Hamilton Avenue to by-pass eastbound delay on the segment of Bayfront Expressway where it approaches Willow Road. Although the provision of an eastbound left-turn lane on Hamilton Avenue where it approaches Willow Road would reduce the delay, this potential mitigation is not recommend because it would encourage cut-through traffic via Chilco Street and Hamilton Avenue, potentially affecting the Belle Haven neighborhood. Therefore, to avoid facilitating the use of Chilco Street and Hamilton Avenue as cut-through routes in the adjacent residential neighborhood, mitigating this traffic impact is not recommended, consistent with City policies that discourage cut-through traffic in residential neighborhoods. Other mitigation measures are discussed below (TRA-3.1 and TRA-3.2) to discourage cut-through traffic in the Belle Haven neighborhood. Mitigation Measure TRA 1.2 (also described below) would reduce the impact, but the net change in delay would still be likely to exceed the 0.8-second threshold for critical movements. The peak-hour traffic impact would remain significant and unavoidable.	SU

Impacts	Impact Significance Without Mitigation	Mitigation Measures	Impact Significance With Mitigation
	S	**c. Bayfront Expressway & Willow Road (#37)** Given the applicable criteria for state-controlled intersections that operate at LOS E or F, a significant impact would occur if the combination of Project and future traffic would increase average delay by 4 seconds or more. The net change in average delay from existing conditions, under both background and background plus-Project conditions, would exceed the 4-second threshold. Furthermore, the addition of Project trips would result in a net change between background and background plus-Project conditions that would also exceed the 4-second threshold. During the a.m. and p.m. peak hours, approximately 70 percent of Dumbarton Bridge vehicle trips pass through this intersection (more than 4,500 vehicles during each peak hour under existing conditions). Similarly, the majority of allowable peak-hour vehicle trips to/from the Project site and Buildings 10–20 under the trip caps would also pass through this intersection because there are few viable alternative routes to/from most directions (particularly for trips to/from the south) and limited access points to both Campuses. As a result, the volume of conflicting movements at this intersection would increase significantly under background conditions because of the significant increase in conflicting movements. The addition of Project traffic would increase average delay by more than 80 seconds during the a.m. peak hour and more than 20 seconds during the p.m. peak hour, thereby exceeding the applicable impact threshold. Physical improvement options to expand approach capacity would be constrained given the proximity of the Dumbarton rail tracks and adjacent wetlands. Similarly, signal timing, which is necessary to accommodate the high volume of peak-direction traffic to/from the Dumbarton Bridge, would	SU

Impacts	Impact Significance Without Mitigation	Mitigation Measures	Impact Significance With Mitigation
		limit the viability of some mitigation options. During the a.m. peak hour, the Project impact would be greatest in the northbound direction on Willow Road, affecting northbound through and northbound left-turn movements when approaching Bayfront Expressway from Willow Road. During the p.m. peak hour, the Project impact would be greatest in the eastbound direction on Bayfront Expressway when approaching the intersection with Willow Road because of the high volume of bridge approach traffic. In addition, during the p.m. peak hour, mitigation options at this intersection would ultimately be affected by downstream capacity limitations at the entrance to the Dumbarton Bridge. Localized queuing and delays in the p.m. peak hour may be minimized by extending the eastbound right-turn pocket from Bayfront Expressway to Willow Road. The turn pocket should be extended toward the Building 20 entrance to maximize queue storage for motorists who wish to turn right to access US 101 south. Delays for p.m. peak-hour traffic as it approaches the Dumbarton Bridge could be reduced if a dedicated receiving lane were to be provided on Bayfront Expressway for northbound right-turn movements from Willow Road. Such a mitigation, if feasible, would allow both northbound right-turn and eastbound through movements to occur concurrently. However, the mitigation would not reduce net travel time for motorists when approaching the Dumbarton Bridge, given downstream capacity at the Bayfront Expressway and University Avenue intersection. Similarly, grade separation to allow conflicting movements to occur simultaneously, if feasible, could reduce the impact on approach delay directly at the intersection but would not reduce net travel time unless accompanied by similar measures at downstream intersections.	

Impacts	Impact Significance Without Mitigation	Mitigation Measures	Impact Significance With Mitigation
		Increasing capacity between US 101 and the Dumbarton Bridge via the Marsh Road/US 101 interchange, to provide a viable alternate route to Willow Road, could reduce the impact, if feasible and if designed to accommodate vehicles to/from the south on US 101 without increasing travel time (compared with the travel time to Willow Road). Such improvements could include one additional northbound exit lane on US 101 between Willow Road and Marsh Road and a similar measure to accommodate southbound traffic when entering US 101 via the Marsh Road intersection. The Project Sponsor shall be required to design and construct a lengthened eastbound right-turn pocket and a dedicated receiving lane on Bayfront Expressway for northbound right-turn traffic. Because the improvements would be under Caltrans jurisdiction, the Project Sponsor would be required to coordinate with Caltrans for review and approval of the improvements. The potential mitigation options described above are not under the control of the City, and thus, the City cannot guarantee their implementation. In addition, with implementation of Mitigation Measure TRA-1.2 (described below), the net increase in the number of peak-hour vehicle trips resulting from the Project during the a.m. and p.m. peak hours would be reduced. However, the increased delay at this intersection would still be anticipated to exceed the significance threshold. Therefore, this impact would remain significant and unavoidable.	
	S	**d. Bayfront Expressway & University Avenue (#38)** Given the applicable criteria for state-controlled intersections that operate at LOS E or F, a significant impact would occur if the combination of Project and future cumulative traffic would increase average delay by 4 seconds or more. This intersection would be anticipated to operate at LOS F under existing, background, and	SU

Impacts	Impact Significance Without Mitigation	Mitigation Measures	Impact Significance With Mitigation
		background plus-Project conditions. The net change in average delay with the addition of Project traffic would not exceed the 4-second threshold. Therefore, Project trips would not significantly affect LOS, based strictly on the approach delay at the intersection. However, the Project would contribute to an increase in upstream delay, thereby affecting access to the Dumbarton Bridge, including increased eastbound delays where traffic would approach the Bayfront Expressway and Willow Road intersection under background plus-Project conditions. Given both the upstream and downstream capacity limitations on both sides of the Dumbarton Bridge corridor, including traffic congestion and capacity limitations on US 101 as well as I-880 on the east side of San Francisco Bay (Bay), peak-hour traffic volumes on the Dumbarton Bridge would not be anticipated to increase significantly. Instead, a greater portion of peak-hour traffic demand on the Dumbarton Bridge would be anticipated to occur outside of the peak hours, including some trips that would be delayed because of peak-hour congestion on connecting facilities. Grade separation that would allow conflicting movements to occur simultaneously, if feasible, would reduce delay where traffic would approach the intersection but could result in secondary impacts at downstream locations. The Project Sponsor shall be required to initiate design concepts through a Project Study Report (PSR), or other appropriate development document, for potential future grade separation at this intersection. Because the intersection would be under Caltrans jurisdiction, the Project Sponsor would be required to coordinate with Caltrans and the City. This potential mitigation is not under the control of the City, and the impact would remain significant and unavoidable.	

Impacts	Impact Significance Without Mitigation	Mitigation Measures	Impact Significance With Mitigation
	PS	**e. Bayfront Expressway & Chilco Street (#40)** During the p.m. peak hour, the potential impact reflects increased eastbound delay on Bayfront Expressway where traffic approaches the Dumbarton Bridge due to an increase in conflicting northbound movements at Chilco Street under background plus-Project conditions. The analysis assumes that two left-turn lanes and a separate right-turn lane would be provided as planned and funded improvements. However, the intersection would be anticipated to continue to operate at an unacceptable LOS of E. The provision of one additional eastbound lane (for a total of four through lanes) on Bayfront Expressway would mitigate the intersection impact but would not improve net vehicle delay at the approach to the Dumbarton Bridge unless accompanied by measures to reduce downstream delay. The mitigation is not be feasible given the downstream lane configurations and environmental constraints, including those related to the wetlands and marsh area north of Bayfront Expressway. With implementation of Mitigation Measure TRA-1.2 (described below), the net increase in the number of vehicle trips resulting from the Project during the p.m. peak hour would be reduced by more than 90 percent. This intersection would be anticipated to operate acceptably at LOS D. Therefore, with Mitigation Measure TRA-1.2, the impact would be reduced to a less-than-significant level.	LTS
	PS	**f. Chilco Street & Constitution Drive (#45)** During the a.m. and p.m. peak hours, traffic volumes at this all-way stop-controlled intersection would increase significantly, because this intersection would serve as one of the two vehicle access points to the Project site. The intersection operates acceptably under existing conditions	LTS

Impacts	Impact Significance Without Mitigation	Mitigation Measures	Impact Significance With Mitigation
		during both the a.m. and p.m. peak hours. The intersection would continue operating acceptably under background conditions during the a.m. peak hour but would operate unacceptably at LOS F during the p.m. peak hour, reflecting increased traffic with full occupancy of Building 23 under background conditions in combination with the additional traffic that would be generated by approved projects in the Bayfront (formerly M-2) area. The Project would provide motor vehicle access to proposed Building 22, existing Building 23, and the proposed hotel via the Chilco Street and Constitution Drive intersection; direct motor vehicle access to proposed Building 21 would be provided from a proposed signalized intersection on Bayfront Expressway. Approximately 58 percent of the proposed parking supply would be accessed from the Chilco Street and Constitution Drive intersection. No changes to lane configurations or intersection control at the Chilco Street and Constitution Drive intersection are proposed as part of the Project. The Project would result in LOS F during the a.m. peak hour under background plus-Project conditions; southbound vehicle queues on Chilco Street, at the approach to the Project entrance, would extend onto Bayfront Expressway. During the p.m. peak hour, vehicles would experience significant delay when exiting the Project site; the delay would exceed the impact threshold. Although queuing at the intersection of Bayfront Expressway and Chilco Street in the a.m. peak hour is not considered an impact, based on the City's LOS criteria, it is a safety concern for the site. The improvements identified below were designed to mitigate this impact. The proposed mitigation for peak-hour impacts at the intersection of Chilco Street and Constitution Drive would provide the following elements to accommodate inbound a.m. and outbound p.m. traffic movements:	

Impacts	Impact Significance Without Mitigation	Mitigation Measures	Impact Significance With Mitigation
		• Installation of a traffic signal and signalized pedestrian crossings on all four legs of the intersection. • Provision of three southbound lanes on the one-block segment of Chilco Street, between Bayfront Expressway and Constitution Drive, to include two southbound left-turn lanes to accommodate the volume of left-turning vehicles entering the Project site. In addition, during the a.m. peak hour, provision of a "split-phase" signal operation on Chilco Street is recommended. • Provision of a northbound left-turn lane on Chilco Street approaching Constitution Drive. • Provision of two outbound lanes on Chilco Street exiting the Project site. With implementation of this mitigation measure, the intersection would operate acceptably at LOS D during both peak hours. Bicycle lanes should be accommodated in the proposed improvements on Chilco Street, tying into the proposed improvements the Project Sponsor is constructing on Chilco Street as a separate project, and on Constitution Drive. These improvements are required to be operational prior to Building 22 occupancy. With these improvements, this impact would be reduced to a less-than-significant level.	
	S	**g. University Avenue & Adams Drive (#47)** Unacceptable LOS F occurs at this intersection under existing conditions, reflecting delay on the stop-controlled side street where it approaches University Avenue. Traffic volumes on Adams Drive where it approaches the stop sign are very low (i.e., 11 vehicle trips during the a.m. peak hour and 51 vehicles during the p.m. peak hour). Under background plus-Project conditions, the side-street	SU

Impacts	Impact Significance Without Mitigation	Mitigation Measures	Impact Significance With Mitigation
		approach volume is forecast to increase to 86 vehicles. However, traffic levels would remain below the threshold for warranting a traffic signal. Thus, a traffic signal is not recommended under background plus-Project conditions. The impact under background plus-Project conditions would therefore be significant and unavoidable. (SU) Installation of a traffic signal at this location would be recommended under 2040 cumulative conditions with the proposed General Plan. Therefore, if the proposed General Plan is adopted, this impact could be mitigated to less-than-significant levels (see Mitigation Measure TRA-13.1).	
	LTS	**h. Jefferson Drive & Constitution Drive (#50)** During the p.m. peak hour, increased Project-related northbound traffic on Constitution Drive would result in an unacceptable LOS of D at one of the stop-controlled side-street approaches (i.e., the east leg of the intersection). This leg of the intersection is an existing driveway on the east side of the intersection that currently serves just 15 vehicle trips during the p.m. peak hour (primarily left turns by vehicles that exit the driveway toward Chilco Street), which is well below the level at which signalization would be considered. The volume on Jefferson Drive is similarly low, with a total of 69 vehicles turning right or left during the p.m. peak hour. The side-street approach volume from Jefferson Drive would operate at LOS C because the majority of approach vehicles would make a right turn toward Chilco Street and thus would not be delayed by northbound Project trips at this location. Therefore, because this impact would be limited to affecting a side-street driveway that serves just 15 vehicle trips during the p.m. peak hour, this impact would be less than significant, and no mitigation is required.	N/A

Impacts	Impact Significance Without Mitigation	Mitigation Measures	Impact Significance With Mitigation
	PS	**i. University Avenue & US 101 Southbound Ramps (#56)** During the a.m. peak hour, the intersection operates acceptably at LOS C under existing conditions and LOS D under background conditions. The addition of Project traffic would result in an unacceptable LOS of E during the a.m. peak hour at this Caltrans-controlled intersection in East Palo Alto. During the p.m. peak hour, the intersection currently operates unacceptably at LOS E under existing conditions; the net change under background plus-Project conditions would not exceed the 4-second threshold. Therefore this impact would be less than significant during the p.m. peak hour but potentially significant during the a.m. peak hour. Mitigation Measure TRA-1.2 (described below) would reduce allowable net Project vehicle trip generation by more than 75 percent during the a.m. peak hour. This intersection would be anticipated to operate acceptably at LOS D during the a.m. peak hour. Therefore, with Mitigation Measure TRA-1.2, the impact would be reduced to a less-than-significant level.	LTS
	PS	**j. University Avenue & Woodland Avenue (#57)** During the a.m. peak hour, this intersection operates at LOS F under existing and background conditions. Under background plus-Project conditions, the increase in a.m. peak-hour delay compared with background conditions would exceed the applicable impact threshold for East Palo Alto intersections that operate at LOS F (i.e., delay to critical movements increases by more than 4 seconds and the critical v/c ratio increases by 0.01). Provision of a dedicated right-turn lane on the westbound approach leg from Woodland Avenue would mitigate the impact. However, this potential mitigation is not recommend because it would encourage cut-through	LTS

Impacts	Impact Significance Without Mitigation	Mitigation Measures	Impact Significance With Mitigation
		traffic via Woodland Avenue, potentially affecting the Willows neighborhood in Menlo Park and Woodland neighborhood in East Palo Alto. To avoid facilitating use of Woodland Avenue as a cut-through route, this potential mitigation is not recommended, consistent with City policies that discourage cut-through traffic in residential neighborhoods. In addition, because the intersection is not within the city of Menlo Park, implementation of this potential mitigation cannot be guaranteed. Mitigation Measure TRA-1.2 (described below) would reduce the allowable net Project vehicle trip generation by more than 75 percent during the a.m. peak hour; the net change in delay to critical movements would not exceed the thresholds described above. Therefore, with Mitigation Measure TRA-1.2, the impact would be reduced to a less-than-significant level.	
	S	**k. Chilco Street & Hamilton Avenue (#60)** This all-way stop-controlled intersection, located within the Belle Haven neighborhood south of the Project site, would operate at an unacceptable LOS of F during the p.m. peak hour because a portion of Project vehicle trips would be anticipated to exit the site via Chilco Street southbound to Hamilton Avenue or other streets in the Belle Haven neighborhood to access Willow Road. Signalizing the intersection would improve LOS to an acceptable level. Mitigation Measure TRA-1.2 (described below) would reduce allowable net Project vehicle trip generation during the p.m. peak hour, but this intersection would still be anticipated to operate unacceptably given the proximity to the Project entrance and the LOS standard of C or better that applies to this intersection. However, any mitigation to improve traffic operations would encourage use of Chilco Street as a cut-through route, which conflicts with City of Menlo Park goals that aim to reduce cut-through	SU

Impacts	Impact Significance Without Mitigation	Mitigation Measures	Impact Significance With Mitigation
		traffic in residential neighborhoods. Therefore, to avoid facilitating use of Chilco Street and Hamilton Avenue as cut-through routes, mitigating this traffic impact by increasing capacity is not recommended, consistent with City policies that discourage cut-through traffic in residential neighborhoods. Other mitigation measures are discussed below (Mitigation Measure TRA-3.1 and TRA-3.2) to discourage cut-through traffic in the Belle Haven neighborhood. The peak-hour impact on intersection LOS is therefore significant and unavoidable.	
	S	**l. Bayfront Expressway & Facebook Building 20 Entrance (#65)** The intersection, which opened following the completion of Building 20 in 2015, would operate at LOS C during the a.m. peak hour and LOS F during the p.m. peak hour under background conditions. However, LOS would degrade to LOS E during the a.m. peak hour and LOS F during the p.m. peak hour under background plus-Project conditions. During the a.m. peak hour, traffic in the single westbound left-turn lane from Bayfront Expressway (entering Building 20) would exceed storage capacity, resulting in delays for peak-direction traffic when traveling westbound on Bayfront Expressway. Provision of a two-lane left-turn pocket at the proposed adjacent entrance to the Project site at Building 21 would reduce the potential impact during the a.m. peak hour by allowing a portion of left-turn demand to use the adjacent intersection (see Mitigation Measure TRA-3.1). During the p.m. peak hour, delay would increase for exiting eastbound vehicles traveling toward Willow Road under background plus-Project conditions. This would be caused by the high volume of eastbound vehicles traveling between the Project site and Willow Road via a short segment of Bayfront Expressway. Building 20 currently has a driveway	SU

Impacts	Impact Significance Without Mitigation	Mitigation Measures	Impact Significance With Mitigation
		to Willow Road that allows Project traffic to exit directly to Willow Road. Encouraging greater use of that driveway for outbound trips could help to reduce a portion of the eastbound traffic volume on Bayfront Expressway traveling toward Willow Road during the p.m. peak hour. The a.m. peak hour impact would be reduced to less-than-significant levels by providing a two-lane westbound left-turn pocket at the adjacent intersection of Bayfront Expressway and the Building 21 entrance. However, the right-of-way along Bayfront Expressway is constrained by the wetlands located adjacent to the roadway; therefore, this mitigation measure may not be feasible. Alternatively, the Project Sponsor shall be required to conduct a micro-simulation evaluation as part of the proposal to install a new traffic signal at the proposed entrance to Building 21 and ensure that queues do not extend onto the Bayfront Expressway at either intersection (see Mitigation Measure TRA-1.1m, below). During the p.m. peak hour, the provision of one additional eastbound through lane on Bayfront Expressway would mitigate the impact but would not improve net vehicle delay where traffic approaches the Dumbarton Bridge unless accompanied by measures to reduce downstream delay. The mitigation may not be feasible given downstream capacity constraints. Furthermore, the intersection is under the jurisdiction of Caltrans; therefore, the City cannot guarantee that this improvement would be implemented. Mitigation Measure TRA-1.2 (described below) would reduce net Project vehicle trip generation during both peak hours, but the increase in eastbound traffic on Bayfront Expressway between Chilco Street and Willow Road would still be anticipated to result in a significant impact on p.m. peak-hour LOS at this intersection. Therefore, the impact would remain significant and unavoidable.	

Impacts	Impact Significance Without Mitigation	Mitigation Measures	Impact Significance With Mitigation
	S	**m. Bayfront Expressway & Proposed Building 21 Entrance (#66)** As part of the Project, this would be a signalized intersection, providing two outbound travel lanes, one inbound right-turn lane, and one inbound left-turn for vehicles entering the Project site from Bayfront Expressway. During the p.m. peak hour, the intersection would operate unacceptably at LOS F. During the a.m. peak hour, the intersection would operate acceptably, based on LOS, but the anticipated queue length for vehicles entering the site via the single proposed westbound left-turn lane (from Bayfront Expressway to the Building 21 entrance) would exceed storage capacity, resulting in delays for westbound through traffic on Bayfront Expressway. The proposed mitigation to reduce a.m. peak-hour impacts on Bayfront Expressway and the Project impact at the entrance to Building 20 is the provision of a two-lane left-turn pocket for northbound vehicles that would enter Building 21 from Bayfront Expressway. However, the right-of-way along Bayfront Expressway is constrained by the wetlands located adjacent to the roadway; therefore, this mitigation measure may not be feasible. Alternatively, the Project Sponsor shall be required to conduct a micro-simulation evaluation as part of the proposal to install a new traffic signal at this location and ensure that queues do not extend onto Bayfront Expressway at either intersection (see Mitigation Measure TRA-1.1l, above) while maintaining an acceptable intersection LOS of D or better. With the proposed mitigation, if feasible, the impact would be less than significant during the a.m. peak hour. During the p.m. peak hour, the provision of one additional eastbound through lane on Bayfront Expressway would mitigate the impact but would not improve net vehicle delay where traffic approaches the Dumbarton Bridge	SU

Impacts	Impact Significance Without Mitigation	Mitigation Measures	Impact Significance With Mitigation
		unless accompanied by measures to reduce downstream delay. This potential mitigation is unlikely to be feasible given downstream capacity constraints. Mitigation Measure TRA-1.2 (described below) would reduce net Project trip generation by more than 75 percent during the a.m. peak hour and more than 90 percent during the p.m. peak hour; the volume of inbound and outbound vehicle trips via the proposed Building 21 driveway would be reduced by approximately 30 percent during both peak hours. With Mitigation Measure TRA-1.2, the impact would be less than significant during the p.m. peak hour. Because the feasibility of the a.m. peak-hour mitigation described above has not yet been confirmed, the impact would remain significant and unavoidable.	
	S	***TRA-1.2: Reduce the Peak-Hour Share of Vehicle Trips Allowable under the Trip Cap, for both the Project Site and Buildings 10-19 to no more than 50 Percent of Allowable Vehicle Trips During each 2-Hour Peak Commute Period.*** The Project trip cap, as proposed, would allow up to 69 percent of vehicle trips within each 2-hour peak commute period to enter or exit the site within a single peak hour. Similarly, the approved vehicle trip caps for Buildings 10-20 currently allow up to 70 percent of permitted vehicle trips within each 2-hour peak commute period to occur within a single hour. The proposed mitigation would reduce the maximum number of allowable peak-hour vehicle trips to no more than 50 percent of the 2-hour peak-period vehicle trip cap for both the Project site and Buildings 10-19. Table 3.3-7 provides a comparison of the potential peak 1-hour vehicle trips under the Project and with the proposed mitigation. As shown, the proposed mitigation would reduce the total volume of allowed peak-hour vehicle trips to the Project site and Buildings 10-19 by 28 percent.	SU

Impacts	Impact Significance Without Mitigation	Mitigation Measures	Impact Significance With Mitigation
Impact TRA-2: Impacts on Routes of Regional Significance under Background Plus Project Conditions. Some Routes of Regional Significance would operate at or below their LOS threshold with the addition of Project trips, and Project traffic would exceed the allowable 1 percent threshold resulting in significant and unavoidable impacts.	S	Implement Mitigation Measure TRA-1.2, plus: ***TRA-2.1: Implement Improvements to Routes of Regional Significance to Address Background Plus-Project Effects.*** Providing additional travel lanes would increase segment capacity but would not be feasible on all segments given available right-of-way widths and both downstream and downstream capacity limitations on facilities such as US 101 and the Dumbarton Bridge. In addition, the routes are under the control of Caltrans and the City cannot guarantee mitigation.	SU
Impact TRA-3: Increase in Daily Traffic Volumes on Roadway Segments Under Background Plus-Project Conditions. Increases in daily traffic associated with the Project under near term plus-Project Conditions would result in increased ADT volumes on Project area roadway segments, resulting in significant and unavoidable impacts.	S	***TRA-3.1: Provide Measures to Reduce Cut-Through Traffic in the Belle Haven Neighborhood via Chilco Street (South of the Dumbarton Rail Corridor), Newbridge Street, and Ivy Drive.*** The Project Sponsor shall provide measures to prevent cut-through traffic, which could include prohibiting left-turns exiting the Project site via Chilco Street during the p.m. peak period. The provision of physical traffic calming measures could also be included, where such measures would not affect emergency access and/or transit service, subject to community and City approval. Because community members and other potentially affected stakeholders may be affected by such improvements, the Project Sponsor shall fund a Neighborhood Traffic Plan to identify appropriate measures for reducing cut-through traffic. ***TRA-3.2: Provide Multi-Modal improvements on study segments that would be potentially impacted by increased ADT.*** The Project Sponsor shall provide measures to improve mobility options via walking, bicycling, and transit, consistent with the City's complete streets goals, which would help to offset the effect of daily traffic generated by the Project. In particular, such measures could include pedestrian enhancements across Willow Road at Hamilton Drive, Ivy Drive, and Newbridge	SU

Impacts	Impact Significance Without Mitigation	Mitigation Measures	Impact Significance With Mitigation
		Street as well as at other affected study segment locations. These measures are discussed further under Impacts TRA-4 and TRA-5.	
Impact TRA-4: Pedestrian Connections Under Background Plus-Project Conditions. The Project would result in a lack of adequate pedestrian connections to the area circulation system under background plus-Project conditions, resulting in a potentially significant impact.	PS	**TRA-4.1:** ***Provide External Pedestrian Connections to the Area Circulation System and Adjacent Land Uses.*** The proposed mitigation would include providing and/or contributing to the cost of pedestrian improvements to eliminate gaps in the sidewalk network in key areas that provide access routes to and from the Project site. The improvements outlined below were selected to provide an immediate connection to the Project site. **a. Constitution Drive** The Project Sponsor shall construct sidewalks along one side of Constitution Drive between Chilco Street and Chrysler Drive and pedestrian crosswalks and curb ramps at Chilco Street & Constitution Drive and Jefferson Drive & Constitution Drive. Construction of a sidewalk and crossing improvements along this section of Constitution Drive, in conjunction with other planned and funded sidewalk construction in the area, will provide continuous pedestrian access from the Project site throughout the Bayfront Area (formerly M-2 area).	LTS
Impact TRA-5: Bicycle Connections Under Background Plus-Project Conditions. The Project would result in a lack of adequate bicycle connections to the area circulation system under background plus-Project conditions, resulting in potentially significant impacts.	PS	***TRA-5.1: Provide bicycle connections to the area circulation system and adjacent land uses.*** The recommended mitigation would include providing and/or contributing to the cost of bicycle improvements to eliminate gaps in the bicycle network that are likely to be used as key access routes to the Project site, including bicycle connections to and from the Menlo Park Caltrain station.	LTS

Impacts	Impact Significance Without Mitigation	Mitigation Measures	Impact Significance With Mitigation
		a. Hamilton Avenue The Project Sponsor shall install bicycle boulevard treatments on Hamilton Avenue between Chilco Street and the pedestrian/bicycle overcrossing of US 101. Bicycle boulevards generally include treatments to facilitate travel by bicyclists. Typical treatments generally include stop-sign modifications, lane markings, signage, and wayfinding elements. This designation is consistent with the street classification proposed in the ConnectMenlo draft Circulation Element. **b. Northbound Access to the Project Site for Bicyclists** The Project Sponsor shall provide facilities for northbound bicyclists to cross Willow Road and access the Project site, thereby minimizing vehicle/bicycle conflicts. Such facilities may include a two-stage left-turn queue box, or similar improvements, to accommodate northbound left-turn movements for bicyclists at the Willow Road/Hamilton Drive intersection from the curbside bicycle lane, in conjunction with a Class I pathway or similar improvements for northbound bicyclists to the travel on the west side of Willow Road between Hamilton Avenue and the Project site.	
Impact TRA-6: Pedestrian and/or Bicycle/Vehicle Conflicts. The Project design would cause increased potential for pedestrian and/or bicycle/vehicle conflicts, resulting in potentially significant impacts.	PS	***TRA-6.1: Refine the Project Design to Minimize Conflicting Movements between Bicycles, Pedestrians, and Other Travel Modes within the Project Site.*** The design for bicycle and pedestrian crossings, similar to the design at the Building 20 driveway, should direct bicycle and pedestrian traffic to the signalized intersection at Bayfront Expressway to avoid conflicts with motor vehicles and shuttle buses at uncontrolled crossings. The Project Sponsor shall work to minimize conflicts to the satisfaction of the transportation manager prior to approval of the site plan for construction.	LTS

Impacts	Impact Significance Without Mitigation	Mitigation Measures	Impact Significance With Mitigation
Impact TRA-7: Increased Demand for Transit Services Under Background Plus-Project Conditions. The Project would result in a less than significant demand for transit services under Background Plus Project Conditions.	LTS	None required	N/A
Impact TRA-8: Delay to Public Transit Vehicles Under Background Plus Project Conditions. The Project would result in significant and unavoidable delays to public transit vehicles under Background Plus Project Conditions.	S	None feasible	SU
Impact TRA-9: Impacts to Vehicle Miles Travel. The VMT per Employee generated by the Project does not exceed 15 percent below the regional average VMT per Employee.	LTS	None required	N/A
Impact TRA-10: Peak-Hour Traffic Impacts at Intersections Under Cumulative 2040 Existing General Plan Plus-Project Conditions. Increases in peak-hour vehicle traffic associated with the Project would result in increased delays during AM and PM peak hours causing significant and unavoidable impacts on the operation of study intersections under Cumulative 2040 Conditions with the Existing General Plan.	S	Implement Mitigation Measure TRA-1.2, plus: ***TRA-10.1: Provide Increased Traffic Capacity to Address Project Impacts on Peak-Hour LOS under Cumulative 2040 Existing General Plan plus-Project Conditions.*** Mitigation Measure TRA 10.1 identifies potential measures to mitigate or reduce Project impacts where feasible.	SU
	PS	**a. Sand Hill Road and I-280 Northbound Off-Ramp (#1)** During the a.m. peak hour, the eastbound intersection of Sand Hill Road and the I-280 Northbound Off-Ramp (study intersection #1) operates at LOS D under Existing Conditions, would operate unacceptably at LOS E under Cumulative 2040 Existing General Plan Conditions without the Project, and would degrade further to LOS F with the addition of Project trips, reflecting traffic delay exiting the I-280 northbound freeway.	LTS

Impacts	Impact Significance Without Mitigation	Mitigation Measures	Impact Significance With Mitigation
		With implementation of Mitigation Measure TRA-1.2, the net increase in peak hour vehicle trips resulting from the Project during the a.m. peak hour is reduced by more than 75 percent. With Mitigation Measure TRA-1.2 the intersection would operate at LOS E and the net change in delay resulting from the Project would be reduced to less than 4 seconds. Therefore, with Mitigation Measure TRA-1.2 the Project contribution to the impact at this location under 2040 existing General Plan plus-Project conditions would be reduced to a less-than-significant level.	
	S	**b. El Camino Real & Glenwood Avenue (#25)** During the a.m. peak hour, traffic associated with the Project would result in an unacceptable LOS of E under cumulative 2040 existing General Plan plus-Project conditions. The provision of a dedicated right-turn lane on Glenwood Avenue, where it approaches El Camino Real, is identified in the City's TIF program. The Project Sponsor's payment of the TIF shall partially mitigate this impact. The provision of one additional through lane on Glenwood Avenue would be needed to improve LOS to an acceptable LOS of D and fully mitigate this impact. However, the provision of an additional through lane is not feasible given the right-of-way constraints. Therefore, this impact would be considered significant and unavoidable under cumulative 2040 existing General Plan plus-Project conditions.	SU
	S	**c. El Camino Real & Ravenswood Avenue-Menlo Avenue (#28)** During the a.m. peak hour, traffic associated with the Project would result in an unacceptable LOS under cumulative 2040 existing General Plan plus-Project	LTS

Impacts	Impact Significance Without Mitigation	Mitigation Measures	Impact Significance With Mitigation
		conditions. Potential mitigation would be to provide a right-turn pocket on Menlo Avenue, where it approaches El Camino Real, and a third through lane on El Camino Real in both the northbound and southbound directions. These measures are identified in the City's TIF program. The Project Sponsor's payment of the TIF shall mitigate this impact. With implementation of this mitigation measure, the intersection would operate acceptably, and the impact would be reduced to a less-than-significant level.	
	S	**d. Willow Road & Hamilton Avenue (#36)** The Project impact was identified under background plus-Project conditions (see TRA 1.1b). No additional feasible mitigation measures were identified to reduce this peak-hour traffic impact, which would remain significant and unavoidable.	SU
	S	**e. Bayfront Expressway & Willow Road (#37)** The Project impact was identified under background plus-Project conditions. Additional delay would occur during the a.m. peak hour under cumulative 2040 existing General Plan plus-Project conditions. As discussed in Mitigation Measure TRA-1.1c, no additional feasible mitigation measures were identified to reduce this impact, which would remain significant and unavoidable.	SU
	S	**f. Bayfront Expressway & University Avenue (#38)** The Project impact was identified under background plus-Project conditions. Additional delay would occur under cumulative 2040 existing General Plan plus-Project conditions, triggering an impact during both the a.m. and p.m. peak hours. As discussed in Mitigation Measure TRA-1.1d, no additional feasible mitigation measures were identified to reduce this impact, which would remain significant and unavoidable.	SU

Impacts	Impact Significance Without Mitigation	Mitigation Measures	Impact Significance With Mitigation
	PS	**g. Chilco Street & Constitution Drive (#45)** This impact, identified under background plus-Project conditions, pertains to the design of the Project entrance, as described above in Mitigation Measure TRA-1.1f. With implementation of this mitigation measure, the intersection would operate acceptably, and this impact would be reduced to a less-than-significant level.	LTS
	PS	**h. Chrysler Drive & Constitution Drive (#46)** During the p.m. peak hour, the intersection of Chrysler Drive and& Constitution Drive (study intersection #46) operates acceptably at LOS C under cumulative 2040 existing General Plan conditions without the Project. Traffic associated with the Project would cause LOS to degrade to an unacceptable LOS of D during the p.m. peak hour under cumulative 2040 existing General Plan plus-Project conditions. With implementation of Mitigation Measure TRA-1.2, the net increase in the number of peak-hour vehicle trips resulting from the Project during the p.m. peak hour would be reduced by more than 90 percent, and the intersection would operate acceptably at LOS C. Therefore, with Mitigation Measure TRA-1.2, the Project impact at this location under 2040 existing General Plan plus-Project conditions would be reduced to a less-than-significant level.	LTS
	S	**i. University Avenue & Adams Drive (#47)** The Project impact was identified under background plus-Project conditions. Additional delay would occur under cumulative 2040 existing General Plan plus-Project conditions, triggering an impact during both the a.m. and p.m. peak hours (see Mitigation Measure TRA-1.1g). This impact would remain significant and unavoidable under existing General Plan plus-Project conditions. (SU)	SU

Impacts	Impact Significance Without Mitigation	Mitigation Measures	Impact Significance With Mitigation
		Installation of a traffic signal at this location would be recommended under 2040 cumulative conditions with the proposed General Plan. Therefore, if the proposed General Plan is adopted, this impact could be mitigated to a less-than-significant level (see Mitigation Measure TRA-13.1i).	
	PS	**j. University Avenue & Bay Road (#51)** The Project was identified to have a potential impact during the p.m. peak hour under cumulative 2040 existing General Plan plus-Project conditions. With implementation of Mitigation Measure TRA-1.2, the net increase in the number of peak-hour vehicle trips resulting from the Project during the p.m. peak hour would be reduced by more than 90 percent. With Mitigation Measure TRA-1.2, the change in delay would not be anticipated to exceed 4 seconds, and the impact would be reduced to a less-than-significant level.	LTS
	S	**k. University Avenue & Donohoe Street (#54)** This state-controlled intersection located adjacent to the US 101 northbound ramps in East Palo Alto operates at LOS F under existing conditions during both the a.m. and p.m. peak hours. The addition of Project traffic under cumulative 2040 existing General Plan plus-Project conditions would result in additional delay that would exceeding the 4-second significance threshold during both peak hours. With implementation of Mitigation Measure TRA-1.2, the net increase in the number of peak-hour vehicle trips resulting from the Project would be substantially reduced, but the increase in delay would still be anticipated to exceed the 4-second significance threshold. Potential mitigation options are limited given the proximity of adjacent freeway ramp intersections and recent development near the intersection. The provision of	SU

Impacts	Impact Significance Without Mitigation	Mitigation Measures	Impact Significance With Mitigation
		additional westbound lane capacity on Donohoe Street, including an extended dual left-turn pocket, dedicated through lane, and dual right-turn lanes, would reduce delay but would not be feasible given the right-of-way limitations, including proximity to the adjacent property on the northeastern corner and the relatively short block length to the upstream US 101 northbound off-ramp. Similarly, providing a southbound right-turn lane on University Avenue and lengthening the northbound turn pockets, if feasible, would reduce delay but would most likely be constrained by adjacent land uses and proximity to the US 101 overpass and two northbound on-ramps. Furthermore, because the intersection is not under the control of the City of Menlo Park, implementation of potential mitigation to reduce peak-hour delay at this location, even if feasible options were available, cannot be guaranteed. This impact is therefore considered significant and unavoidable.	
	PS	**l. University Avenue & US 101 Southbound Ramps (#56)** Additional delay would occur under cumulative 2040 existing General Plan plus-Project conditions, triggering a potential impact during the p.m. peak hour. With implementation of Mitigation Measure TRA-1.2, the net increase in the number of peak-hour vehicle trips resulting from the Project during the p.m. peak hour would be reduced by more than 90 percent. Therefore, with Mitigation Measure TRA-1.2, the change in delay would not be anticipated to exceed 4 seconds, and the impact would be reduced to a less-than-significant level.	LTS
	PS	**m. University Avenue & Woodland Avenue (#57)** The Project impact was identified under background plus-Project conditions. Additional delay would occur under	LTS

Impacts	Impact Significance Without Mitigation	Mitigation Measures	Impact Significance With Mitigation
		cumulative 2040 existing General Plan plus-Project conditions, triggering an impact during the p.m. peak hour. With implementation of Mitigation Measure TRA-1.2, the net increase in the number of peak-hour vehicle trips resulting from the Project during the p.m. peak hour would be reduced by more than 90 percent Therefore, with Mitigation Measure TRA-1.2, the change in delay would not be anticipated to exceed 4 seconds, and the impact would be reduced to a less-than-significant level.	
	S	**n. Chilco Street & Hamilton Avenue (#60)** The Project impact was identified under background plus-Project conditions. Additional delay would occur under cumulative 2040 existing General Plan plus-Project conditions, triggering an impact during the p.m. peak hour. As discussed in Mitigation TRA-1.1k, no additional feasible mitigation measures were identified to reduce this impact, which would remain significant and unavoidable.	SU
	S	**o. Bayfront Expressway & Facebook Building 20 Entrance (#65)** The Project impact was identified under background plus-Project conditions. Additional delay would occur under cumulative 2040 existing General Plan plus-Project conditions, triggering an impact during the p.m. peak hour. As discussed in Mitigation Measure TRA-1.1l, no additional feasible mitigation measures were identified to reduce this impact, which would remain significant and unavoidable during the p.m. peak hour.	SU
	S	**p. Bayfront Expressway & Proposed Building 21 Entrance (#66)** The Project impact was identified under background plus-Project conditions. Additional delay would occur under cumulative 2040 existing General Plan plus-Project conditions, triggering an impact during the a.m. and p.m.	SU

Impacts	Impact Significance Without Mitigation	Mitigation Measures	Impact Significance With Mitigation
		peak hours. As discussed in Mitigation Measure TRA-1.1m, no additional feasible mitigation measures were identified to reduce this impact, which would remain significant and unavoidable during the a.m. peak hour.	
Impact TRA-11: Impacts on Routes of Regional Significance Under Cumulative 2040 Existing General Plan Plus Project Conditions. Some Routes of Regional Significance would operate at or below their LOS threshold with the addition of Project trips, and Project traffic would exceed the allowable 1 percent threshold, resulting in significant and unavoidable impacts.	S	Implement Mitigation Measure TRA-2.1	SU
Impact TRA-12: Increase in Daily Traffic Volumes on Roadway Segments under Cumulative 2040 Existing General Plan Plus-Project Conditions. Increases in daily traffic under existing General Plan plus-Project conditions would result in increased ADT volumes on Project area roadway segments, resulting in significant and unavoidable impacts.	S	Implement Mitigation Measures TRA-3.1 and TRA-3.2	SU
Impact TRA-13: Peak-Hour Traffic Impacts at Intersections Under Cumulative 2040 Proposed General Plan Conditions. Increases in peak-hour vehicle traffic associated with the Project would contribute to increased delays during the a.m. and p.m. peak hours in 2040 under the proposed General Plan (ConnectMenlo), causing a significant and unavoidable impact on the operation of study intersections.	S	Implement Mitigation Measure TRA-1.2, plus: ***TRA-13.1: Increase Traffic Capacity to Address Impacts on Peak-Hour LOS under Cumulative 2040 Proposed General Plan Conditions.*** This measure describes the types of mitigation measures that would be necessary to mitigate impacts at each affected location to less than significant.	SU
	PS	**a. Sand Hill Road & I-280 Northbound Off-ramp (#1)** This a.m. peak-hour impact was identified under cumulative 2040 existing General Plan plus-Project conditions (see Impact TRA-10.1a) and mitigated to less-than-significant levels with the peak-hour trip reduction	LTS

Impacts	Impact Significance Without Mitigation	Mitigation Measures	Impact Significance With Mitigation
		described under Mitigation Measure TRA-1.2. Average delay would change by less than 1 second under the proposed General Plan, and impact findings would remain consistent with cumulative 2040 General Plan plus-Project conditions. The Project impact would, therefore, remain less than significant with Mitigation Measure TRA-1.2 under cumulative 2040 proposed General Plan conditions.	
	PS	**b. El Camino Real & Ravenswood Avenue-Menlo Avenue** (#28) The intersection would operate unacceptably during both the a.m. and p.m. peak hours under cumulative 2040 proposed General Plan conditions. As described above under Mitigation Measure TRA 10.1c, the provision of a right-turn pocket on Menlo Avenue, where it approaches El Camino Real, and a third through lane on El Camino Real is identified in the City's TIF program. The Project Sponsor's payment of the TIF shall mitigate this impact to a less-than-significant level.	LTS
	S	**c. Willow Road & Hamilton Avenue (#36)** This potential impact on p.m. peak-hour traffic operations was identified as significant and unavoidable under background plus-Project conditions (see Mitigation Measure TRA-1.1b) and would remain significant and unavoidable under cumulative 2040 existing General Plan plus-Project conditions. Under cumulative 2040 proposed General Plan conditions, delay would further increase during the p.m. peak hour, thereby exceeding the significance threshold. Project impacts would remain significant and unavoidable, as described under Mitigation Measure TRA-1.1b.	SU
	S	**d. Bayfront Expressway & Willow Road (#37)** This potential impact on p.m. peak-hour traffic operations was identified as significant and unavoidable under	SU

Impacts	Impact Significance Without Mitigation	Mitigation Measures	Impact Significance With Mitigation
		background plus-Project conditions (see Mitigation Measure TRA-1.1c) and would remain significant and unavoidable under cumulative 2040 existing General Plan plus-Project conditions. Under cumulative 2040 proposed General Plan conditions, additional delay would exceed the significance threshold (see Mitigation Measure TRA-1.1c for a discussion of potential mitigation and constraints to mitigation). Mitigation Measure TRA-1.2 would partially reduce the impact, but it would remain significant. This impact would remain significant and unavoidable, as described under Mitigation Measure 1.1c.	
	S	**e. Bayfront Expressway & University Avenue (#38)** This potential impact on peak-hour traffic operations was identified as significant and unavoidable under background plus-Project conditions (see Mitigation Measure TRA-1.1d) and would remain significant and unavoidable under cumulative 2040 existing General Plan plus-Project conditions. Increased delay is anticipated during the p.m. peak hour under the proposed General Plan. This impact would remain significant and unavoidable, as described under Mitigation Measure TRA-1.1d.	SU
	PS	**f. Chilco Street & Constitution Drive (#45)** This impact, also identified under background plus-Project conditions, pertains to the design of the Project entrance (see Mitigation Measure TRA-1.1). With implementation of this Project mitigation measure, the intersection would operate acceptably and this impact would be reduced to a less-than-significant level.	LTS
	PS	**g. Chilco Street & Constitution Drive (#46)** This impact was also identified under cumulative 2040 existing General Plan plus-Project conditions. With	LTS

Impacts	Impact Significance Without Mitigation	Mitigation Measures	Impact Significance With Mitigation
		implementation of Mitigation Measure TRA-1.2, the net increase in peak-hour vehicle trips resulting from the Project during the p.m. peak hour would be reduced by more than 90 percent and the Project contribution to increased delay would be less than 4 seconds. Therefore, with Mitigation Measure TRA-1.2, the Project impact at this location under 2040 proposed General Plan conditions would be reduced to a less-than-significant level.	
	PS	**h. University Avenue & Adams Drive (#47)** LOS at this intersection reflects delay on the side-street stop-controlled approach from Adams Drive. Signalization of this intersection would be warranted under cumulative 2040 proposed General Plan conditions with buildout of ConnectMenlo, including the Project. Therefore, signalization of this intersection should be included in the City's TIF program. The Project Sponsor's payment of the TIF shall mitigate this impact, and the impact would be less than significant.	LTS
	PS	**i. University Avenue & Bay Road (#51)** The intersection operates at LOS F during the p.m. peak hour under existing conditions, reflecting primarily northbound traffic as it approaches the Dumbarton Bridge. Increased delay would exceed the significance threshold under cumulative 2040 proposed General Plan conditions, reflecting added traffic to/from the other development sites (west of University Avenue and east of Willow Road) identified under the proposed General Plan. Replacement of the east/west "split-phase" signal on Bay Street with standard protected signal phases would allow eastbound and westbound pedestrian crossings to occur simultaneously and reduce p.m. peak-	LTS

Impacts	Impact Significance Without Mitigation	Mitigation Measures	Impact Significance With Mitigation
		hour delay at this intersection. Because the intersection is not under the control of the City of Menlo Park, implementation of potential mitigation to reduce peak-hour delay at this location cannot be guaranteed. Project traffic would occur primarily in the reverse-peak direction (southbound) during the p.m. peak hour. In addition, Mitigation Measure TRA-1.2 would reduce the net increase in the number of p.m. peak-hour vehicle trips generated by the Project by approximately 90 percent. Therefore, the Project would not result in increased p.m. peak-hour delay that would exceed the impact threshold under background plus-Project or cumulative 2040 existing General Plan plus-Project conditions. Under cumulative 2040 proposed General Plan conditions with Mitigation Measure TRA 1.2, the Project would not be anticipated to result in additional delay to critical movements that would exceed 4 seconds, and Project trips would not result in the critical v/c ratio exceeding the impact threshold. The Project contribution to this cumulative impact would be less than significant with Mitigation Measure TRA-1.2.	
	S	**j. University Avenue & Donohoe Street (#54)** This state-controlled intersection located adjacent to the US 101 northbound ramps in East Palo Alto operates at LOS F under existing conditions during both the a.m. and p.m. peak hours. The addition of Project traffic under cumulate 2040 existing General Plan plus-Project conditions would result in additional delay that would exceed the 4-second significance threshold during both peak hours. Additional delay would occur under cumulative 2040 proposed General Plan conditions during the a.m. peak hour. This impact was identified under cumulative 2040 existing General Plan plus-Project conditions (see Mitigation	SU

Impacts	Impact Significance Without Mitigation	Mitigation Measures	Impact Significance With Mitigation
		Measure TRA-10.1j) and would remain significant and unavoidable under cumulative 2040 proposed General Plan conditions.	
	PS	**k. University Avenue & US 101 Southbound Ramps (#56)** During the p.m. peak hour, this intersection operates unacceptably at LOS E under existing conditions; it would remain at LOS E under background plus-Project and cumulative 2040 existing General Plan plus-Project conditions. With implementation of Mitigation Measure TRA-1.2, the net increase in the number of peak-hour vehicle trips resulting from the Project during the p.m. peak hour would be reduced by more than 90 percent. Therefore, with Mitigation Measure TRA-1.2, the intersection would be anticipated to operate at LOS E, consistent with existing conditions. The Project contribution to this cumulative impact would be less than significant with Mitigation Measure TRA-1.2.	LTS
	S	**l. Chilco Street & Hamilton Avenue (#60)** The Project impact was identified under background plus-Project conditions and cumulative 2040 existing General Plan plus-Project conditions (see Mitigation Measure TRA-1.1k). This impact would remain significant and unavoidable.	SU
	S	**m. Bayfront Expressway & Facebook Building 20 Entrance (#65)** The Project impact was identified under background plus-Project conditions and cumulative 2040 existing General Plan plus-Project conditions (see Mitigation Measure TRA-1.1l). This impact would remain significant and unavoidable during the p.m. peak hour. (SU)	SU

Impacts	Impact Significance Without Mitigation	Mitigation Measures	Impact Significance With Mitigation
	S	**n. Bayfront Expressway & Proposed Building 21 Entrance (#66)** The Project impact was identified under background plus-Project conditions and cumulative 2040 existing General Plan plus-Project conditions (see Mitigation Measure TRA-1.1m). With the proposed mitigation, the impact would remain significant and unavoidable during the a.m. peak hour.	SU
Impact TRA-14: Impacts on Routes of Regional Significance Under Cumulative 2040 Proposed General Plan Conditions. Some Routes of Regional Significance would operate at or below their LOS threshold with the addition of Project trips. However, Project traffic would exceed the allowable 1 percent threshold, resulting in significant and unavoidable impacts.	S	Implement Mitigation Measure TRA-2.1	SU
Impact TRA-15: Increase in Daily Traffic Volumes on Roadway Segments Under Cumulative 2040 Proposed General Plan Conditions. Increases in daily traffic associated with the Project under Cumulative 2040 Proposed General Plan Conditions would result in increased ADT volumes on Project area roadway segments resulting in significant and unavoidable impacts.	S	Implement Mitigation Measure TRA-3.1 and TRA-3.2	SU
3.4 Air Quality			
Impact AQ-1: Conflict with Air Quality Plan. The Project would not conflict with or obstruct implementation of the applicable air quality plan.	LTS	None required	N/A
Impact AQ-2a: Construction Criteria Air Pollutant Emissions. Construction activities at the Project site could result in the generation of regional criteria pollutant emissions during construction in excess of	PS	***AQ-2.1: Implement BAAQMD Basic Construction Mitigation Measures to Reduce Construction-Related Dust.*** The Project Sponsor shall require all construction contractors to implement the basic construction mitigation	LTS

Impacts	Impact Significance Without Mitigation	Mitigation Measures	Impact Significance With Mitigation
BAAQMD thresholds.		measures recommended by BAAQMD to reduce fugitive dust emissions. Emission reduction measures shall include, at a minimum, the following measures. Additional measures may be identified by BAAQMD or contractor as appropriate. • All exposed surfaces (e.g., parking areas, staging areas, soil piles, graded areas, and unpaved access roads) shall be watered two times per day. Recycled water, to be purchased through advance arrangement with the City of Redwood City or the City of Palo Alto, shall be used to water all exposed surfaces. • 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 roads shall be limited to 15 mph. • All roadways, driveways, and sidewalks to be paved shall be completed as soon as possible. Building pads shall be laid as soon as possible after grading unless seeding or soil binders are used. • 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.	
Impact AQ-2b: Operational Criteria Air Pollutant Emissions. Operational activities at the Project site could result in the generation of regional criteria pollutant emissions during operation in excess of	PS	***AQ-2.2: Offset NOX Emissions Generated during Project Operation that are above the BAAQMD NOX Average Daily Emission Threshold.*** The Project Sponsor shall, prior to occupancy of the first building within the Project,	LTS

Impacts	Impact Significance Without Mitigation	Mitigation Measures	Impact Significance With Mitigation
BAAQMD thresholds.		enter into an agreement with the City to develop an alternative or complementary offsite mitigation program to offset operational NOX emissions to the level established by the BAAQMD thresholds for the years in which the Project's emissions exceed the BAAQMD threshold. The offsite mitigation program shall require Project Sponsor to provide a one-time payment to the City to establish a program to fund emission reduction projects through grants and similar mechanisms within the City of Menlo Park. The amount of such payment shall be calculated based on then-current BAAQMD Carl Moyer Program cost-effectiveness limit multiplied by the emissions that exceed BAAQMD's average daily threshold for each year that emissions exceed the threshold plus a five percent administrative fee to fund procurement of offsite emission reductions for the Project's projected operational emissions. Potential projects shall be limited to those which will reduce emissions for each year in which the project's emissions exceed the BAAQMD threshold through the end of 2025, which is when the Project's operational emissions are projected to be below the average daily thresholds, including, but not limited to, the following: • Alternative fuel, low-emission school buses, transit buses, and other vehicles. • Diesel engine retrofits and repowers. • Bike Sharing Programs. • Electric vehicle charging stations and plug-ins. All offsite reductions must be quantifiable, verifiable, and enforceable. The Project Sponsor shall engage a qualified air quality expert to coordinate with the City to identify a list of potential projects eligible for funding. Emission reduction projects shall be funded so that the Project's emissions are reduced each year until the end of 2025. The	

Impacts	Impact Significance Without Mitigation	Mitigation Measures	Impact Significance With Mitigation
		air quality expert retained by the Project Sponsor shall provide a report within one year of occupancy of the first building within the Project identifying the projects that were funded and associated NOx emissions expected to be realized for each year out until the end of 2025. Annual reporting of the implementation of emissions reduction projects shall be required until the Project's emissions are less than the BAAQMD threshold without the offsets. If a sufficient number of emissions reduction projects are not identified to meet the required performance standards in the City of Menlo Park, Project Sponsor shall consult with a qualified air quality expert to ensure conformity is met through some other means of achieving the performance standard of achieving net zero operational emissions in excess of BAAQMD's average daily thresholds through 2025, including (but not limited to) payment of a one-time mitigation offset fee to BAAQMD's Strategic Incentives Division plus a five percent administrative fee to fund one or more emissions reduction projects within the San Francisco Bay Area Air Basin. Reporting for any emissions reduction projects outside the City shall be completed on the same schedule as indicated above for emission reduction projects in the City. If annual reports indicate that emission reductions do not adequately reduce project emissions to a level below the BAAQMD threshold for any year, then a penalty of 200 percent shall be imposed that will require the Project Sponsor to obtain an additional year of offsets based on the amount of emissions by which the Project's emissions exceed the BAAQMD threshold for the next following year (e.g., if the 2019 emissions exceed the threshold by five tons, then 10 tons of emissions must be provided by 2020).	

Impacts	Impact Significance Without Mitigation	Mitigation Measures	Impact Significance With Mitigation
Impact AQ-3: Result in a Cumulatively Considerable Net Increase of any Criteria Pollutant for which the Project Region is Nonattainment. The Project could result in the generation of criteria pollutant emissions that would result in a cumulatively considerable net increase.	PS	Implement Mitigation Measures AQ-2.1 and AQ-2.2	LTS
Impact AQ-4a: Exposure of Existing Sensitive Receptors to Substantial Pollutant Concentrations During Construction. The Project would expose existing sensitive receptors to substantial pollutant concentrations during construction.	PS	Implement Mitigation Measure AQ-2.1	LTS
Impact AQ-4b: Exposure of Existing Sensitive Receptors to Substantial Pollutant Concentrations from Project Operation. The Project would not expose existing sensitive receptors to substantial pollutant concentrations during operation.	LTS	None required	N/A
Impact AQ-5: Create Objectionable Odors. The Project would not create objectionable odors that would affect a substantial number of people.	LTS	None required	N/A
Impact C-AQ-1: Conflict with Air Quality Plan. The Project, combined with other development within the City, would not conflict with or obstruct implementation of the applicable air quality plan.	LTS	None required	N/A
Impact C-AQ-2a: Cumulative Criteria Pollutants during Construction. Construction activities associated with the demolition of Buildings 307–309 could generate substantial NO_X emissions in excess of BAAQMD threshold.	LTS	None required	N/A

Impacts	Impact Significance Without Mitigation	Mitigation Measures	Impact Significance With Mitigation
Impact C-AQ-2b: Cumulative Criteria Pollutants during Operation. Operational activities associated with the Project could generate substantial ROG, NO_X, and PM10 emissions in excess of BAAQMD thresholds.	PS	Implement Mitigation Measure AQ-2.2	LTS
Impact C-AQ-3a: Cumulative Health Risks during Construction. Cumulative development in the Project vicinity would expose existing sensitive receptors to substantial pollutant concentrations during construction.	LTS	None required	N/A
Impact C-AQ-3b: Cumulative Health Risks during Operation. Cumulative development in the Project vicinity would not expose existing sensitive receptors to substantial pollutant concentrations during operation.	LTS	None required	N/A
3.5 Greenhouse Gas Emissions			
Impact GHG-1: Greenhouse Gas Emissions. The Project would not generate GHG emissions, either directly or indirectly, that would have a significant impact on the environment.	PS	***GHG-1.1: Implement BAAQMD Best Management Practices for Construction.*** The Project Sponsor shall require all construction contractors to implement the BMPs recommended by BAAQMD to reduce GHG emissions. Emissions reduction measures shall include, at a minimum, the use of local building materials (at least 10 percent), the recycling and reuse of at least 50 percent of construction waste or demolition material, and the use of alternative-fuel vehicles for construction vehicles/equipment (at least 15 percent of the fleet).	LTS
Impact GHG-2: Conflicts with Applicable Plans and Policies. The Project would conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of GHGs.	S	None feasible	SU

Impacts	Impact Significance Without Mitigation	Mitigation Measures	Impact Significance With Mitigation
3.6 Noise			
Impact NOI-1: Exposure to Excessive Noise Levels. The Project could expose persons to or generate noise levels in excess of standards established in the General Plan, noise ordinance or applicable standards of other agencies.	PS	***NOI-1.1: Implement Noise Control Measures to Reduce Construction Noise during Project Construction.*** The Project Sponsor shall submit a Construction Noise Plan for review and approval by the Planning and Building Divisions prior to the issuance of the demolition permit. The Project Sponsor shall comply with construction noise limits specified in Section 8.06 of the City of Menlo Park Municipal Code by implementing measures during demolition and construction of the Project. These measures may include, but are not limited to: • To the extent feasible, schedule the noisiest construction activities, such as demolition and grading activities, during times that would have the least impact on nearby residential and other receptors. This could include restricting construction activities in the areas of potential impact to the early and late hours of the workday, such as from 8:00 a.m. to 10:00 a.m. or 4:00 p.m. to 6:00 p.m., Monday through Friday. • Use best available noise control techniques (e.g., improved mufflers, equipment redesign, intake silencers, ducts, engine enclosures, acoustically attenuating shields or shrouds) on equipment and trucks used for Project construction wherever feasible. • Use hydraulically or electrically powered impact tools (e.g., pile drivers, jack hammers, pavement breakers, rock drills) used for Project construction wherever possible to avoid noise associated with compressed air exhaust from pneumatically powered tools. However, where use of pneumatic tools is unavoidable, use an exhaust muffler on the compressed air exhaust; this muffler can lower noise levels from the exhaust by up to about 10 dBA. Use external jackets on the tools themselves where feasible. This could achieve a	LTS

Impacts	Impact Significance Without Mitigation	Mitigation Measures	Impact Significance With Mitigation
		reduction of 5 dBA. Use quieter equipment, such as drills, rather than impact equipment whenever feasible. • Use "quiet" gasoline-powered compressors or electric compressors, and use electric rather than gasoline- or diesel-powered forklifts for small lifting to the extent feasible. • Locate stationary noise sources, such as temporary generators, as far from nearby receptors as possible; such sources shall be muffled and enclosed within temporary enclosures and shielded by barriers or other measures to the extent feasible. • Install temporary noise barriers (generally approximately 8 feet in height) around construction areas adjacent to sensitive receptors to reduce construction noise from equipment to acceptable levels. Specifically, the noise barriers shall reduce noise levels during the hours of 8:00 a.m. to 6:00 p.m. on weekdays to 85 dBA at a distance of 50 feet from the construction equipment. In addition, the noise barriers shall reduce overall construction noise to less than 60 dBA Leq, as measured at the applicable property lines of adjacent uses, during the hours of 7:00 a.m. to 8:00 a.m. and 6:00 p.m. to 10:00 p.m. weekdays and 7:00 a.m. to 10:00 p.m. on Saturdays. The noise barriers shall be installed unless an acoustical engineer submits documentation that confirms that barriers are not necessary to achieve these attenuation levels or provides specific locations and heights to achieve the required attenuation. • Prohibit trucks from idling along streets serving the construction site. • Prior to any pile-driving activities, notify all surrounding property owners and occupants within 300 feet of the Project site, informing them of the estimated start date and duration.	

Impacts	Impact Significance Without Mitigation	Mitigation Measures	Impact Significance With Mitigation
		• Implement "quiet" pile-driving technology (e.g., vibratory pile driving or pre-drilled pile holes) where feasible, in consideration of geotechnical and structural requirements and conditions. • Monitor the effectiveness of noise attenuation measures by taking noise measurements during pile-driving activities to ensure compliance with the 85 dBA standard at 50 feet for construction equipment and during general construction occurring during non-exempted daytime hours to ensure compliance with the 60 dBA Leq daytime standard. ***NOI-1.2: Implement Noise Control Measures to Reduce HVAC Noise during Project Operation.*** The Project Sponsor shall design the Project HVAC system to limit noise to the applicable standard at the property line of nearby noise-sensitive receptors. Measures that can implemented to achieve this include, but are not limited to: • Maximize the distance between HVAC systems and nearby sensitive receptors, • Provide enclosures around the HVAC units, • Incorporate local barriers around equipment, and • Utilize mufflers or silencers on HVAC systems. Prior to the issuance of building permits, the Project Sponsor shall prepare a report, identifying measures that will be implemented to ensure that exterior HVAC noise levels will comply with the following noise limits: • The 60 dBA Leq daytime and 50 dBA Leq nighttime noise standards for equipment located on the ground, • The zoning ordinance limit of 50 dBA at a distance of 50 feet for roof-mounted equipment. ***NOI-1.3: Install Sound Enclosures around Emergency Generators.*** The Project Sponsor shall reduce the sound level from the operating generators to a maximum sound	

Impacts	Impact Significance Without Mitigation	Mitigation Measures	Impact Significance With Mitigation
		level of less than the 60 dBA noise standard at nearby noise-sensitive land uses. Measures that could accomplish this standard include, but are not limited to: • Installing sound enclosures around all emergency generators, • Utilizing mufflers to reduce generator noise, and • Utilizing equipment that meets this standard. Prior to the issuance of building permits, the Project Sponsor shall prepare a report, identifying measures that shall be implemented to ensure that exterior noise levels from emergency generators comply with the 60 dBA Leq daytime/nighttime noise standards. ***NOI-1.4: Limit Generator Testing to Daytime Hours.*** The Project Sponsor shall limit generator testing to between the hours of 8:00 a.m. and 6:00 p.m. ***NOI-1.5: Design Enclosures around Mechanical Equipment Associated with the Recycled Water System to Limit Exterior Noise.*** The Project Sponsor shall design the recycled water system such that noise generated by mechanical equipment complies with the City noise standards of 60 dBA L_{eq} (daytime) and 50 dBA L_{eq} (nighttime) at nearby residences. Measures that could accomplish this include, but are not limited to: • Designing equipment room enclosures, access doors, and other equipment room openings to limit noise that could be transmitted to the exterior • Utilizing mufflers to limit blower noise Prior to the issuance of building permits, the Project Sponsor shall prepare a report, identifying measures that shall be implemented to ensure that exterior noise levels from the recycled water system comply with the daytime and nighttime noise standards.	

Impacts	Impact Significance Without Mitigation	Mitigation Measures	Impact Significance With Mitigation
Impact NOI-2: Expose Persons to or Generate Excessive Ground-borne Vibration or Ground-borne Noise Levels. The Project would not expose persons to or generate excessive vibration or ground-borne noise.	LTS	None required	N/A
Impact NOI-3: Substantial Permanent Increase in Ambient Noise Levels. The Project would result in a permanent increase in ambient noise levels in the Project vicinity, above levels existing without the Project.	PS	Implement Mitigation Measures NOI-1.2 through NOI-1.5	LTS
Impact NOI-4: Substantial Temporary or Periodic Increase in Ambient Noise Levels. The Project could result in a substantial temporary or periodic increase in ambient noise levels in the Project vicinity, above levels existing without the Project.	PS	Implement Mitigation Measures NOI-1.1	LTS
Impact C-NOI-1: Cumulative Exposure to Excessive Noise. The Project, in combination with other development within the city, could result in a substantial increase in exposure of persons to noise in excess of the standards established in the City General Plan or Municipal Code. The Project's contribution would be cumulatively significant.	PS	Implement Mitigation Measure NOI-1.1	LTS
Impact C-NOI-2: Cumulative Exposure to Ground-borne Vibration. Construction activities associated with Project-related development and other future development in the city would not expose sensitive receptors to excessive ground-borne vibration. The Project's cumulative impact would be less than significant.	LTS	None required	N/A
	LTS	None required	N/A

Impacts	Impact Significance Without Mitigation	Mitigation Measures	Impact Significance With Mitigation
Impact C-NOI-3: Cumulative Permanent Increase in Noise Levels. Operation of the Project, in combination with other development in the city, would result in a substantial permanent ambient noise level increase in the Project vicinity. However, the Project's contribution would not be cumulatively significant.			
Impact C-NO-4: Cumulative Temporary Increase in Noise Levels. Construction activities associated with Project-related development and other future development in the city would not expose sensitive receptors to a substantial temporary increase in the ambient noise level. The Project's cumulative impact would be less than significant.	LTS	None required	N/A
3.7 Cultural Resources			
Impact CUL-1: Impacts on Historic Resources. The Project would not cause a substantial adverse change in the significance of a historical resource.	LTS	None required	N/A
Impact CUL-2: Impacts on Archaeological Resources. The Project has the potential to encounter and damage or destroy previously unknown subsurface archaeological resources during construction.	PS	***CUL-2.1: Perform Construction Monitoring, Evaluate Uncovered Archaeological Features, and Mitigate Potential Disturbance of Identified Significant Resources at the Project Site.*** Prior to demolition, excavation, grading, or other construction-related activities on the Project site, the Project Sponsor shall hire a qualified professional archaeologist (i.e., one who meets the Secretary of the Interior's professional qualifications for archaeology or one under the supervision of such a professional) to monitor, to the extent determined necessary by the archaeologist, Project-related earth-disturbing activities (e.g., grading, excavation, trenching). In the event that any prehistoric or historic-period subsurface archaeological features or deposits, including locally darkened soil (midden), that could conceal cultural	LTS

Impacts	Impact Significance Without Mitigation	Mitigation Measures	Impact Significance With Mitigation
		deposits, animal bone, obsidian, and/or mortar are discovered during demolition/construction-related earthmoving activities, all ground-disturbing activity within 100 feet of the discovery shall be halted immediately, and the Planning and Building Divisions shall be notified within 24 hours. The City shall consult with the Project archaeologist to assess the significance of the find. Impacts on any significant resources shall be mitigated to a less-than-significant level through data recovery or other methods determined adequate by the City that are consistent with the Secretary of the Interior's Standards for Archaeological Documentation. If Native American archaeological, ethnographic, or spiritual resources are discovered, all identification and treatment of the resources shall be conducted by a qualified archaeologist and Native American representatives who are approved by the local Native American community as scholars of the cultural traditions. In the event that no such Native American is available, persons who represent tribal governments and/or organizations in the locale in which resources could be affected shall be consulted. When historic archaeological sites or historic architectural features are involved, all identification and treatment is to be carried out by historical archaeologists or architectural historians who meet the Secretary of the Interior's professional qualifications for archaeology and/or architectural history.	
Impact CUL-3: Impacts on Paleontological Resources. The Project could destroy a unique paleontological resource or site or unique geologic feature.	PS	***CUL-3.1: Conduct Protocol and Procedures for Encountering Paleontological Resources.*** Prior to the start of any subsurface excavations that would extend beyond previously disturbed soils, all construction forepersons and field supervisors shall receive training by a qualified professional paleontologist, as defined by the SVP, who is experienced in teaching non-specialists to	LTS

Impacts	Impact Significance Without Mitigation	Mitigation Measures	Impact Significance With Mitigation
		ensure they recognize fossil materials and follow proper notification procedures in the event any such materials are uncovered during construction. Procedures to be conveyed to workers include halting construction within 50 feet of any potential fossil find and notifying a qualified paleontologist, who shall evaluate its significance. If a fossil is determined to be significant and avoidance is not feasible, the paleontologist shall develop and implement an excavation and salvage plan in accordance with SVP standards. Construction work in these areas shall be halted or diverted to allow recovery of fossil remains in a timely manner. Fossil remains collected during the monitoring and salvage portion of the mitigation program shall be cleaned, repaired, sorted, and cataloged. Prepared fossils, along with copies of all pertinent field notes, photos, and maps, shall then be deposited in a scientific institution with paleontological collections. A final Paleontological Mitigation Plan Report shall be prepared that outlines the results of the mitigation program. The City shall be responsible for ensuring that the monitor's recommendations regarding treatment and reporting are implemented.	
Impact CUL-4: Impacts on Human Remains. The Project has the potential to encounter or discover human remains during excavation or construction.	PS	***CUL-4.1: Comply with State Regulations Regarding the Discovery of Human Remains at the Project Site.*** If human remains are discovered during any construction activities, all ground-disturbing activity within 50 feet of the remains shall be halted immediately, and the county coroner shall be notified immediately, according to Section 5097.98 of the State Public Resources Code and Section 7050.5 of California's Health and Safety Code. Additionally, the Planning and Building Divisions shall be notified. If the remains are determined by the county coroner to be Native American, the NAHC shall be notified within 24 hours, and the guidelines of the NAHC shall be adhered to	LTS

Impacts	Impact Significance Without Mitigation	Mitigation Measures	Impact Significance With Mitigation
		in the treatment and disposition of the remains. The Project Sponsor shall also retain a professional archaeologist with Native American burial experience to conduct a field investigation of the specific site and consult with the Most Likely Descendant, if any, identified by the NAHC. As necessary, the archaeologist may provide professional assistance to the Most Likely Descendant, including the excavation and removal of the human remains. The City of Menlo Park Community Development Department, Planning Division, shall be responsible for approval of recommended mitigation as it deems appropriate, taking account of the provisions of state law, as set forth in State CEQA Guidelines Section 15064.5(e) and Public Resources Code Section 5097.98. The applicant shall implement approved mitigation, to be verified by the Planning Division, before the resumption of ground-disturbing activities within 50 feet of where the remains were discovered.	
Impact C-CUL-1: Cumulative Impacts on Historical Resources. Development in the Bay Area could have significant impacts on historical resources. However, construction of the Project would not contribute to a cumulative impact.	LTS	None required	N/A
Impact C-CUL-2: Cumulative Impacts on Archaeological, Paleontological Resources, and Human Remains. Construction activities on the Project site and other development could result in impacts on archaeological resources, paleontological resources, and human remains.	LTS	None required	N/A

Impacts	Impact Significance Without Mitigation	Mitigation Measures	Impact Significance With Mitigation
3.8 Biological Resources			
Impact BIO-1: Direct Impacts on Special-Status Species. The Project could directly affect species that have been identified as candidate, sensitive, or special-status in local or regional plans, policies, or regulations.	PS	***BIO-1.1: Identify and Protect Roosting and Breeding Bats on the Project Site and Provide Alternative Roosting Habitat.*** The Project Sponsor shall implement the following measures to protect any roosting and/or breeding bats found in a tree that is to be removed during Project implementation. Prior to tree removal or demolition activities, the Project Sponsor shall retain a qualified wildlife biologist with demonstrated bat survey experience to conduct a focused survey for bats and potential roosting sites within trees that are to be removed during the period when bats are most active (May 1 through October 1). The surveys can be conducted by visual identification. If bats are observed on the Project site in areas where they could be affected by the Project, they will be identified to species level using a bat echolocation detector (e.g., "Anabat" unit). If no roosting sites or bats are found, the biologist shall submit a letter report confirming absence to CDFW, and no further mitigation will be required. If roosting bats are found during the above survey and roosting areas will be impacted, avoidance and minimization measures shall be implemented. Appropriate measures will be determined in coordination with CDFW and may include the following: • Tree removal shall be avoided between April 15 and September 15 (the maternity period) to avoid impacts on pregnant females and active maternity roosts (whether colonial or solitary). • All tree removal will be conducted between September 15 and October 30, which corresponds to the time period when bats have not yet entered torpor or are not caring for non-flying young.	LTS

Impacts	Impact Significance Without Mitigation	Mitigation Measures	Impact Significance With Mitigation
		• Trees will be removed in pieces rather than felling the entire tree. • If a maternity roost is located, whether solitary or colonial, that roost will remain undisturbed until September 15 or until a qualified biologist has determined the roost is no longer active. • If avoidance of non-maternity roost trees is not possible and tree removal or trimming must occur between September 15 and October 30, a qualified biologists will monitor tree trimming/removal. Prior to removal/trimming, each tree will be gently shaken; several minutes should pass before felling trees or trimming limbs to allow bats time to arouse and leave the tree. The biologists should search downed vegetation for dead and injured bats. The presence of dead or injured bats that are species of special concern will be reported to CDFW. • Compensatory mitigation for the loss of roosting habitat will also be determined through consultation with CDFW and may include the construction and installation of suitable replacement habitat (e.g., bat houses, cottonwood trees) onsite. • The performance standard for any replacement roosting habitat will be to demonstrate occupancy by roosting bats within five years of installation or construction. Occupancy shall be determined by whichever monitoring technique (e.g., roost emergence surveys, acoustic surveys) the qualified bat biologist deems most likely to determine bat presence. The Project Sponsor will be responsible for ensuring that CDFW requirements are implemented. Multiple survey visits and survey methods may be required at a single site to determine presence or absence of roosting bats, depending on season and roost type.	

Impacts	Impact Significance Without Mitigation	Mitigation Measures	Impact Significance With Mitigation
Impact BIO-2: Indirect Impacts on Special-Status Species. The Project could result in increased predation of special-status bird and mammal species that inhabit nearby saltwater and brackish water marshes in the Don Edwards National Wildlife Refuge.	PS	***BIO-2.1: Install Bird Perching Deterrents on All New Buildings and Other Elevated Structures, Including the Bicycle/Pedestrian Bridge.*** The Project Sponsor shall implement the following measures to protect special-status species from increased predation on the Project site: • For all new buildings constructed on the Project site, as well as the bicycle/pedestrian bridge and northern bridge approaches, the Project Sponsor shall install bird deterrents along suitable perching sites to deter avian predators of special-status species that inhabit the adjacent salt marshes. Such deterrents may include one or more of the following: bird spikes, bird netting, an electric shock track, sound deterrents, or perching deterrents approved by CDFW and/or USFWS. • Trees that are used for replacement landscaping, especially those planted on rooftops, shall consist of species that generally do not exceed 30 feet in height to limit the visibility of adjacent salt marshes to the north. These trees may include native or non-invasive nonnative ornamental species. Species with broad canopies are preferred because tress with tall, narrow canopies (e.g., palms or conifers) generally provide better hunting perches for raptors. Additionally, trees that are planted on the rooftops of the new buildings shall be located away from the edge of the roof and planted with a reduced line of sight to the Bay.	LTS
Impact BIO-3: Impacts on Native Wildlife Nursery Sites. The removal of buildings, trees, shrubs, or woody vegetation and the installation of new buildings and lighting could affect native migratory birds.	PS	Implement Mitigation Measure BIO-2.1, plus: ***BIO-3.1: Conduct Pre-construction Surveys for Nesting Migratory Birds.*** The Project Sponsor shall implement the following measures to reduce impacts on nesting migratory birds:	LTS

Impacts	Impact Significance Without Mitigation	Mitigation Measures	Impact Significance With Mitigation
		• To facilitate compliance with state and federal law (California Fish and Game Code and the MBTA) and prevent impacts on nesting birds, the Project Sponsor shall avoid construction during the nesting season (February 1 through September 14) or conduct pre-construction surveys, as described below. • If it is not feasible to avoid the nesting season, the Project Sponsor shall hire a qualified wildlife biologist with demonstrated experience to conduct a survey for nesting birds, including raptors, no earlier than 3 days prior to the commencement of ground-disturbing activities and vegetation removal (including clearing, grubbing, and staging). The area surveyed shall include all construction areas within the Project site as well as areas within 250 feet outside the boundaries of the areas to be cleared or as otherwise determined by the biologist. • If construction activities related to the multi-use bicycle/pedestrian bridge and occurring on the northern side of the Bayfront Expressway are initiated during the nesting bird season, within 3 days prior to the start of construction, a survey shall be conducted by a qualified biologist to determine whether western snowy plovers are nesting within 600 feet of the proposed construction area. Surveys shall be conducted on two week intervals, between February 1 and through May 30, or longer, if necessary, as determined by the biologist based on the behavior and habitat. If an active nest is identified, a buffer of 600 feet shall be established between the construction area and the nest, and the nest shall be periodically monitored by a qualified biologist to determine when it is no longer active (at which point the buffer will no longer be needed). If there is a visual barrier, such as a	

Impacts	Impact Significance Without Mitigation	Mitigation Measures	Impact Significance With Mitigation
		levee or dense vegetation, between the construction area and the nest, such that the plover will not be able to see construction activity from the nest, then the Project Sponsor may coordinate with the USFWS to determine whether a reduced buffer would be sufficient to allow work to occur without disturbing the nesting plovers. • A nest survey shall be required prior to implementation of Phase 1 and Phase 2 of the Project and when construction work stops at a portion of the site where suitable nesting habitat remains for more than 15 days. Additionally, at least one nest survey shall be conducted at the beginning of each year of Project implementation between February and May. As discussed in Chapter 2, *Project Description*, Project implementation will occur between 2016 and 2022. The need for additional surveys shall be determined by the qualified wildlife biologist and based on the results of the initial survey. • If the biologist finds active nests during the survey, he or she shall establish species-specific no-disturbance buffer zones for each nest with use of high-visibility fencing, flagging, or pin flags. No construction activities shall be allowed within the buffer zones. The size of the buffer shall be based on the species sensitivity to disturbance and planned work activities in the vicinity. The buffer shall remain in effect until the nest is no longer active. • If structure demolition activities cannot occur outside of the nesting season, the Project Sponsor or its contractor shall remove inactive nests from the structure to be demolished and install nest exclusion measures (i.e., fine mesh netting, panels, or metal projectors) outside of the nesting season. All	

Impacts	Impact Significance Without Mitigation	Mitigation Measures	Impact Significance With Mitigation
		exclusionary devices shall be monitored and maintained throughout the breeding season to ensure that they are successful in preventing the birds from accessing cavities or nest sites. No more than 3 days prior to building demolition activities, a qualified biologist shall conduct a pre-construction survey of all potential nesting habitat on the structure to be demolished and the surrounding areas for the presence of active nests. If active nests are found on the building or in the affected area, then demolition activities shall not proceed until the biologist verifies that all nests on the building are inactive. • After all surveys and/or nest deterrence activities are completed, the biologist shall complete a memorandum detailing the survey effort and results and submit the memorandum to the City within 7 days of survey completion. **BIO-3.2: *Implement Bird-Safe Design Standards into Project Buildings and Lighting Design*.** The Project Sponsor or its contractor shall implement the following measures to minimize hazards to birds: • Reduce large areas of transparent or reflective glass. • Locate water features, trees, and bird habitat away from building exteriors to reduce reflection. • Reduce or eliminate the visibility of landscaped areas behind glass. • Turn non-emergency lighting off at night, especially during bird migration season (February–May and August–November). • Include window coverings that adequately block light transmission from rooms where interior lighting is used at night and install motion sensors or controls to extinguish lights in unoccupied spaces.	

Impacts	Impact Significance Without Mitigation	Mitigation Measures	Impact Significance With Mitigation
		• Design and/or install lighting fixtures that minimize light pollution, including light trespass, over-illumination, glare, light clutter, and skyglow, while using bird-friendly colors for lighting when possible. *San Francisco's Standards for Bird-safe Buildings* document[4] provides a good overview of building design and lighting guidelines to minimize bird/building collisions.	
Impact BIO-4: Conflicts with Any Local Policies or Ordinances that Protect Biological Resources. The Project would not result in conflicts with Chapter 13.24 of the Municipal Code (Heritage Tree Ordinance).	LTS	None required	N/A
Impact C-BIO-1: Cumulative Impacts on Roosting Bats. Removal of buildings, trees, shrubs, or other woody vegetation associated with construction of the Project and other development would result in impacts on roosting bats.	LTS	None required	N/A
Impact C-BIO-2: Cumulative Indirect Impact on Special-Status Species. The Project and other development could result in increased predation of special-status birds and mammal species that inhabit nearby saltwater and brackish water marshes in the Don Edwards National Wildlife Refuge.	LTS	None required	N/A
Impact C-BIO-3: Cumulative Impact on Native Wildlife Nursery Sites. The removal of buildings, trees, shrubs, or other woody vegetation and the installation of new buildings and lighting could affect native migratory birds.	LTS	None required	N/A

[4] City and County of San Francisco. 2011. *Standards for Bird-Safe Buildings*. San Francisco Planning Department. July 14. Available: <http://www.sf-planning.org/ftp/files/publications_reports/bird_safe_bldgs/Standards%20for%20Bird%20Safe%20Buildings%20-%2011-30-11.pdf>.

Impacts	Impact Significance Without Mitigation	Mitigation Measures	Impact Significance With Mitigation
Impact C-BIO-4: Cumulative Conflicts with Any Local Policies or Ordinances that Protect Biological Resources. The Project, in combination with other reasonably foreseeable projects, would not conflict with local policies or ordinances that protect biological resources.	LTS	None required	N/A
3.9 Geology and Soils			
Impact GEO-1: Strong Seismic Ground Shaking and Seismically Related Ground Failure. The Project would not expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving (1) strong seismic ground shaking and (2) seismically related ground failure, including liquefaction.	LTS	None required	N/A
Impact GEO-2: Soil Erosion. The Project would result in less-than-significant soil erosion impacts. (LTS)	LTS	None required	N/A
Impact GEO-3: Soil Hazards. The Project would not be located on a geologic unit or soil that is unstable or that would become unstable as a result of the Project and potentially result in subsidence or collapse.	LTS	None required	N/A
Impact GEO-4: Expansive Soil. Expansive Soil. The Project would not be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating a less-than-significant risk to life or property.	LTS	None required	N/A
Impact C-GEO-1: Cumulative Seismic Hazards. The Project, in combination with other foreseeable development in the vicinity, would not substantially increase the risk of exposure to seismic hazards.	LTS	None required	N/A

Impacts	Impact Significance Without Mitigation	Mitigation Measures	Impact Significance With Mitigation
Impact C-GEO-2: Cumulative Soil Erosion. The Project, in combination with other foreseeable development in the vicinity, would not substantially increase the soil erosion potential.	LTS	None required	N/A
Impact C-GEO-3: Cumulative Soil Hazards. The Project, in combination with other foreseeable development in the vicinity, would not substantially increase soil hazards.	LTS	None required	N/A
3.10 Hydrology and Water Quality			
Impact WQ-1: Violation of Water Quality Standards or Waste Discharge Requirements. The Project could violate water quality standards or waste discharge requirements.	PS	***WQ-1.1: Implement Construction Dewatering Treatment (if necessary).*** Dewatering treatment would be necessary if groundwater is encountered during excavation activities, dewatering is necessary to complete the Project, or the dewatered water is discharged to any storm drain or surface water body. Because there is potential for groundwater to be contaminated with VOC's or fuel products at the Project site, the Project Sponsor would be required to comply with the San Francisco Bay RWQCB's VOC and Fuel General Permit (Order No. R2-2012-0012). If dewatering activities require discharges into the storm drain system or other water bodies, the water shall be pumped to a tank and tested for water quality using grab samples and sent to a certified laboratory for analysis. If it is found that the water does not meet water quality standards, it should either be treated as necessary prior to discharge so that all applicable water quality objectives (as noted in Tables 3.10-1 and 3.10-2) are met or hauled offsite instead for treatment and disposal at an appropriate waste treatment facility that is permitted to receive such water. Water treatment methods shall be selected that achieve maximum removal of contaminants found in the groundwater and represent the best available	LTS

Impacts	Impact Significance Without Mitigation	Mitigation Measures	Impact Significance With Mitigation
		technology that is economically achievable. Implemented methods may include the retention of dewatering effluent until particulate matter has settled before it is discharged, the use of infiltration areas, filtration, or other means. The contractor shall perform routine inspections of the construction area to verify that the water quality control measures are properly implemented and maintained, conduct visual observations of the water (i.e., check for odors, discoloration, or an oily sheen on groundwater), and perform other sampling and reporting activities prior to discharge. The final selection of water quality control measures shall be submitted in a report to the San Francisco Bay RWQCB for approval prior to construction. If the results from the groundwater laboratory do not meet water quality standards and the identified water treatment measures cannot ensure treatment that meets all standards for receiving water quality, then the water shall be hauled offsite instead for treatment and disposal of at an appropriate waste treatment facility that is permitted to receive such water.	
Impact WQ-2: Effects on Groundwater Supplies and Recharge. The Project would not substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that a net deficit in aquifer volume or a lowering of the local groundwater table level would result.	LTS	None required	N/A
Impact WQ-3: Changes to the Existing Drainage Patterns. The Project would not substantially alter the existing drainage pattern of the site or area, including through alteration of the course of a stream or river, in a manner that would result in substantial erosion, siltation, or flooding onsite or offsite.	LTS	None required	N/A

Impacts	Impact Significance Without Mitigation	Mitigation Measures	Impact Significance With Mitigation
Impact WQ-4: Changes to Stormwater Runoff. The Project would not create or contribute runoff water that would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff.	LTS	None required	N/A
Impact WQ-5: Impacts from Flooding. The Project could expose people or structures to a significant risk of loss, injury, or death involving flooding, including flooding as a result of the failure of a levee or dam, but would not place structures within a 100-year flood hazard area.	PS	***WQ-5.1: Flood-Proofing of Project Underground Infrastructure.*** Prior to or, at a minimum, concurrent with the issuance of the first construction activity permit at the Project site, and in connection with applicable FEMA requirements, the Project Sponsor shall ensure that the Project incorporates design features, including storm drains, sewers, and equipment facilities, that would flood-proof underground infrastructure, thereby allowing it to withstand hydrostatic forces and buoyancy from SLR changes in groundwater levels. Onsite recycled-water wetland treatment areas shall be located at grade, with underground tanks placed in elevated areas to provide protection from the 100-year BFE plus 16 inches. ***WQ-5.2: Provide Adequate Stormflow Conveyance Capacity for Sea-Level Rise Conditions at the Project Site.*** Prior to or, at a minimum, concurrent with the issuance of the first construction activity permit at the Project site, the Project Sponsor shall provide current documentation in the form of a technical report to ensure that, as a result of Project design features, the storm drain system's existing conveyance capacity is not constricted by SLR at the outlets, including the offsite Chrysler pump station, as a result of the Project design.	N/A
Impact C-WQ-1: Cumulative Hydrology and Water Quality Impacts. The Project, in combination with other foreseeable development in the vicinity, could contribute considerably to cumulative impacts on water quality, groundwater recharge and supplies, storm drain capacity, or current flooding.	PS	Implement Mitigation Measure WQ-1.1	LTS

Impacts	Impact Significance Without Mitigation	Mitigation Measures	Impact Significance With Mitigation
3.11 Hazards and Hazardous Materials			
Impact HAZ-1: Routine Hazardous Materials Use. The Project would not create a significant hazard to human health and/or the environment through the routine transport, use, or disposal of hazardous materials.	LTS	None required	N/A
Impact HAZ-2: Upset and Accident Conditions Involving Hazardous Materials. The Project could create a potentially significant hazard to human health and/or the environment involving the release of hazardous materials.	PS	***HAZ-2.1: Soil and Groundwater Management.*** Soil Management Plans that cover the entire Project site shall be prepared and implemented. These Soil Management Plans shall, as appropriate, incorporate the analytical results from the most recent groundwater monitoring event and soil investigations and include protocols for managing both known and potentially undocumented residual soil and groundwater contamination that may be encountered during Project construction, including naturally occurring asbestos. The Soil Management Plans shall include dust control measures that describe how construction and grading operations will minimize dust emissions and ensure that no equipment or operations will emit visible dust across the property line. Although naturally occurring asbestos has not been detected in the vicinity of Buildings 307-309, in accordance with CARB's Asbestos ATCM for Construction, Grading, Quarrying, and Surface Mining Operations, if naturally occurring asbestos is encountered during construction, then dust control measures must meet the requirements of an ADMP approved by the BAAQMD. These Soil Management Plans shall be approved by DTSC and implemented during Project construction. ***HAZ-2.2: Additional Site Investigation.*** If required by DTSC, additional site investigations shall be performed to delineate the source and extent of contamination on the Project site. At DTSC's discretion, these investigations may be incorporated into the Soil Management Plans required	LTS

Impacts	Impact Significance Without Mitigation	Mitigation Measures	Impact Significance With Mitigation
		by DTSC for the Project site. The analytical results shall be compared to risk-based human health screening levels approved by DTSC. The site investigation(s) shall be prepared and evaluated by a licensed professional, and a technical report summarizing the field activities, results, and conclusion shall be submitted to DTSC for review and approval prior to issuance of building permits. ***HAZ-2.3: Remedial Action.*** According to the results of additional site investigations (if any), the Project Sponsor shall coordinate with DTSC to select and implement remedial actions (as necessary) to protect future site users from conditions that could pose an unacceptable health risk. Remedial measures may include, but are not limited to, source removal of contaminated materials, in-situ treatment, engineering controls, and/or modification of institutional controls described in the existing LUC for the Project site. Remedial actions shall be implemented prior to building occupancy. At DTSC's discretion, remedial actions may be completed during implementation of the Soil Management Plans required by DTSC for the Project site.	
Impact HAZ-3: Exposure to Schools. The Project would not create a potentially significant hazard for children at nearby schools from emissions or handling hazardous or acutely hazardous materials.	LTS	None required	N/A
Impact HAZ-4: Impairment of Emergency Response or Evacuation Plans. The Project would not impair implementation of or physically interfere with an adopted emergency response or evacuation plan.	LTS	None required	N/A
Impact C-HAZ-1: Cumulative Hazardous Materials Management and Accidental Releases. Construction and operation of the Project and other	LTS	None required	N/A

Impacts	Impact Significance Without Mitigation	Mitigation Measures	Impact Significance With Mitigation
development would not create a significant hazard to human health and/or the environment involving the management or release of hazardous materials.			
Impact C-HAZ-2: Cumulative Subsurface Hazardous Materials. Construction and operation of the Project and other development would not create a significant hazard to human health and/or the environment involving the disturbance of subsurface hazardous materials.	LTS	None required	N/A
Impact C-HAZ-3: Cumulative Impairment of Emergency Response or Evacuation Plans. Construction and operation of the Project and other development would not impair implementation of or physically interfere with an adopted emergency response or evacuation plan.	LTS	None required	N/A
3.12 Population and Housing			
Impact POP-1: Indirect Population Growth. The Project would not induce substantial population growth indirectly through job growth, nor would projected growth result in adverse direct impacts on the physical environment.	LTS	None required	N/A
Impact C-POP-1: Cumulative Increase in Population. Proposed development in the city would increase the resident population but would not exceed growth projections.	LTS	None required	N/A
Impact C-POP-2: Cumulative Increase in Housing Demand. Proposed development in the city would increase the demand for housing but would not exceed growth projections.	LTS	None required	N/A

Impacts	Impact Significance Without Mitigation	Mitigation Measures	Impact Significance With Mitigation
3.13 Public Services			
Impact PS-1: Impacts on Fire Services. The Project would not result in the need for new or physically altered fire service facilities.	LTS	None required	N/A
Impact PS-2: Impacts on Police Services. The Project would not result in the need for new or physically altered police service facilities.	LTS	None required	N/A
Impact PS-3: Impacts on School Facilities. The Project would not result in the need for new or physically altered school facilities.	LTS	None required	N/A
Impact PS-4: Impacts on Parks and Recreational Facilities. The Project would not result in the need for new or physically altered parks and recreational facilities.	LTS	None required	N/A
Impact PS-5: Impacts on Library Facilities. The Project would not result in the need for new or physically altered library facilities.	LTS	None required	N/A
Impact C-PS-1: Cumulative Fire Service Impacts. The Project, in combination with other foreseeable development in the city, would not result in the need for new or physically altered fire service facilities.	LTS	None required	N/A
Impact C-PS-2: Cumulative Police Service Impacts. The Project, in combination with other foreseeable development in the city, would not result in the need for new or physically altered police service facilities.	LTS	None required	N/A
Impact C-PS-3: Cumulative School Service Impacts. The Project, in combination with other foreseeable development in the city, would not result in the need for new or physically altered school facilities.	LTS	None required	N/A

Impacts	Impact Significance Without Mitigation	Mitigation Measures	Impact Significance With Mitigation
Impact C-PS-4: Cumulative Park and Recreational Impacts. The Project, in combination with other foreseeable development in the city, would not result in the need for new or physically altered parks and recreational facilities.	LTS	None required	N/A
Impact C-PS-5: Cumulative Library Service Impacts. The Project, in combination with other foreseeable development in the city, would not result in the need for new or physically altered library facilities.	LTS	None required	N/A
3.14 Utilities			
Impact UT-1: Water Supply. The Project would have sufficient water supplies available to serve the Project from existing entitlements and resources, and no new or expanded entitlements would be needed. In addition, the Project's contribution to cumulative impacts would be less than considerable.	LTS	None required	N/A
Impact UT-2: Water Treatment Facilities. The Project would not require or result in the construction of new water treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects.	LTS	None required	N/A
Impact UT-3: Wastewater Generation. The Project would not exceed wastewater treatment requirements of the San Francisco Bay RWQCB, require or result in the construction of new wastewater treatment facilities or the expansion of new facilities, or result in a determination by SVCW that it has inadequate capacity to serve the Project's expected demand and existing entitlements.	LTS	None required	N/A

Impacts	Impact Significance Without Mitigation	Mitigation Measures	Impact Significance With Mitigation
Impact UT-4: Solid Waste Generation. The Project would comply with federal, State, and local statutes and regulations related to solid waste and would be served by a landfill with sufficient permitted capacity to accommodate the Project's solid waste disposal needs.	LTS	None required	N/A
Impact UT-5: Stormwater Generation. The Project would not require or result in the construction of new stormwater drainage facilities or expansion of existing facilities.	LTS	None required	N/A
Impact UT-6: Energy Demand. The Project would not result in wasteful, inefficient, or unnecessary energy use and the Project would not exceed existing gas and electric supplies.	LTS	None required	N/A
Impact C-UT-1: Cumulative Water Treatment. The Project, in combination with other development within the city, would not require or result in the construction of new water treatment facilities or the expansion of existing facilities.	LTS	None required	N/A
Impact C-UT-2: Cumulative Wastewater Generation. The Project, in combination with other development within the WBSD service area, would not exceed wastewater treatment requirements, require or result in the construction of new wastewater treatment facilities or the expansion of existing facilities, or exceed expected demand and existing entitlements.	LTS	None required	N/A
Impact C-UT-3: Cumulative Solid Waste Generation. The Project, combined with other development within the RethinkWaste's service area, would not exceed service area solid waste disposal capacity and would be expected to comply with federal, State, and local statutes and regulations related to solid waste.	LTS	None required	N/A

Impacts	Impact Significance Without Mitigation	Mitigation Measures	Impact Significance With Mitigation
Impact C-UT-4: Cumulative Stormwater Generation. The Project, in combination with other development in the city, would not require the construction or expansion of stormwater facilities.	LTS	None required	N/A
Impact C-UT-5: Cumulative Energy Demand. The Project, in combination with other development in the city, would not result in wasteful, inefficient, or unnecessary energy use, and the Project, in combination with other development served by PG&E, would not exceed existing gas and electric supply capacity.	LTS	None required	N/A

Chapter 1
Introduction

1.1 Purpose of This Environmental Impact Report

This Draft Environmental Impact Report (Draft EIR) for the Facebook Campus Expansion Project (Project) has been prepared by the Project's Lead Agency, the City of Menlo Park (City), in conformance with the provisions of the California Environmental Quality Act (CEQA) and the State CEQA Guidelines, as amended. The lead agency is the public agency that has the principal responsibility for carrying out or approving a project.

This Draft EIR assesses potentially significant environmental impacts that could result from the Project. As defined in State CEQA Guidelines Section 15382, a "significant effect on the environment" is:

> . . . a substantial, or potentially substantial, adverse change in any of the physical conditions within the area affected by the project including land, air, water, minerals, flora, fauna, ambient noise, and objects of historic or aesthetic significance. An economic or social change by itself shall not be considered a significant effect on the environment. A social or economic change related to a physical change may be considered in determining whether the physical change is significant.

As stated in the State CEQA Guidelines, an EIR is an "informational document" that is intended to inform public agency decision-makers and the public of the potentially significant environmental effects of a project, identify possible ways to avoid or substantially lessen the significant effects, and describe reasonable alternatives to the project. The purpose of this Draft EIR is to provide the City, responsible and trustee agencies, other public agencies, and the public with detailed information about the environmental effects that could result from implementing the Project, examine and institute methods of mitigating any adverse environmental impacts should the Project be approved, and consider feasible alternatives to the Project, including the required No Project Alternative. The City will use the EIR, along with other information in the public record, to determine whether to approve, modify, or deny the Project as well as specify any applicable environmental conditions or mitigation measures as part of the Project approvals.

1.2 Project Overview

Hibiscus Properties, LLC (Project Sponsor), an affiliate of Facebook, Inc., is proposing to redevelop an existing approximately 58-acre industrial site (Project site), known as the TE Connectivity (TE) Campus, by demolishing existing onsite buildings and landscaping and then constructing two new office buildings and a hotel (Project). The Project would expand the existing Facebook Campus, which currently consists of Buildings 10–19 (formerly known as the East Campus), located north of Bayfront Expressway/State Route (SR) 84; Building 20, located east of the Project site; and Building 23, located at the western end of the Project site and currently undergoing tenant improvements.

The two proposed new office buildings (Buildings 21 and 22) would encompass approximately 962,400 gross square feet (gsf). In addition, the Project includes a 200-room limited-service[1] hotel with approximately 174,800 gsf. Development of the office buildings and hotel would result in a net increase

[1] A limited-service hotel generally offers fewer services (e.g., in-house drinking and dining options) than a full-service hotel.

of approximately 121,300 gsf at the Project site. The Project Sponsor is also proposing a trip cap as part of the Project to limit the number of daily and peak-period trips (AM and PM) and reduce traffic impacts. Although Building 20 is currently subject to a trip cap under a prior entitlement process, the Project would implement a trip cap that would apply to both the Project site (including Building 23) and Building 20. In addition, the Project would include a Transportation Demand Management (TDM) program to promote alternatives to private automotive travel and reduce the number of single-occupancy vehicle trips as well as the resulting traffic and greenhouse gas emissions.

Building 21 would be constructed during the first phase of development. Building 21 would be connected to the existing Building 20 through an enclosed bridge. Building 22 would be constructed during the second phase of development. It is anticipated that Building 22 would be connected to Building 21 through an open-air bridge. The hotel would be located near the corner of Chilco Street and SR 84 and also constructed in the second phase. The Project would provide approximately 3,533 parking spaces for the office buildings, hotel, and Building 23.[2,3] The office buildings and the hotel would be approximately 75 feet in height.

The Project would be organized around a publicly accessible open space that would provide a connection to the San Francisco Bay Trail (Bay Trail) and a gathering space for the community. A multi-use bicycle/pedestrian bridge over SR 84 would allow access to the Bay Trail and Bedwell Bayfront Park (Bayfront Park) from the Project site and the Belle Haven neighborhood. The Project would also include bicycle/pedestrian pathways that would be separated from the internal vehicle access roads where feasible. The onsite paths would connect the proposed office buildings to the existing Building 20 east of the Project site and Facebook Buildings 10–19 north of SR 84. In addition, a new 1-acre terraced garden space, primarily for employee use, would be provided between Buildings 20 and 21. The perimeter of the Project site would have a landscaped buffer. As a separate project, Facebook (in partnership with the City) is constructing bicycle and pedestrian improvements on Chilco Street, along the perimeter of the site, to improve bicycle and pedestrian safety in the area.. The frontage improvements would also include landscaping along the frontage.

The Project site is zoned M-2 (General Industrial) and M-2(X) (General Industrial, Conditional Development). The current conditional development permit (CDP) and "X" combining district apply only to specific buildings that exceed the 35-foot height limit of the M-2 zoning district and not the overall site. The site is designated as Limited Industry under the City's General Plan and can be built out to approximately 1.142 million square feet (sf) for office uses under the allowable 0.45 floor area ratio (FAR) and up to approximately 1.396 million sf (0.55 FAR) for other general industrial uses, including, but not limited to, warehousing, manufacturing, printing, assembling, related office and laboratory uses, and shipping and receiving. The Project would require the entire site to be rezoned from M-2 and M-2(X) to M-2(X) to exceed the maximum 35-foot height limit. In addition, a CDP would be incorporated as part of the Project to define development standards and create mechanisms for the City to process any revisions to the Project that might arise over the buildout period. The Project Sponsor also proposes to amend the zoning ordinance text to accommodate the proposed hotel and enter into a development agreement with the City to create vested rights in Project approvals and specify benefits to the City.

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[2] If the hotel is constructed, then the parking spaces associated with the hotel would be in a surface parking lot under the podium of the hotel. If the hotel is not constructed, then a surface parking lot with the same number of spaces would be provided in the northwestern portion of the Project site.

[3] Building 23 is not part of the Project but is on the Project site. The parking spaces developed as part of the Project would be available to Building 23.

1.3 CEQA Process

Notice of Preparation

The Notice of Preparation (NOP) was released for the Project on June 18, 2015, for a 30-day public review period. A public scoping meeting was held on July 13, 2015, before the Planning Commission. The NOP noted that the Project may have a significant effect on the environment and that an EIR would be prepared for the Project. A copy of the NOP is provided in Appendix 1 of this Draft EIR.

The NOP was sent to individuals, local interest groups, adjacent property owners, and responsible and trustee state and local agencies that have jurisdiction over or interest in environmental resources and/or conditions in the vicinity of the Project site. The purpose of the NOP was to allow various private and public entities to transmit their concerns and comments on the scope and content of the Draft EIR, focusing on specific information related to each individual's or group's interest or agency's statutory responsibility early in the environmental review process.

In response to the NOP, letters were received from the following agencies:

- Governor's Office of Planning and Research, State Clearinghouse and Planning Unit
- California Department of Transportation
- City of East Palo Alto
- County of San Mateo Planning and Building
- Menlo Park Fire Protection District
- San Mateo County Transit District (SamTrans)
- U.S. Fish and Wildlife Service

In addition, one letter was received from an organization, two letters were received from individuals, and members of the public made oral comments at the Planning Commission hearing. Copies of these NOP comment letters and the comments that were recorded at the Planning Commission hearing are included in Appendix 1 of this Draft EIR.

The NOP concluded that the following environmental resource areas would be addressed as separate sections in this Draft EIR:

- Aesthetics
- Air Quality
- Biological Resources
- Cultural Resources
- Geology and Soils
- Greenhouse Gas Emissions
- Hazards and Hazardous Materials
- Hydrology and Water Quality
- Land Use
- Noise
- Population and Housing
- Public Services and Recreation
- Transportation
- Utilities and Service Systems

The Project would not result in significant environmental impacts on agricultural, forestry, or mineral resources because none of these resources exist at the Project site. A detailed analysis of these topics is therefore not included in the Draft EIR; however, these topics are briefly discussed in Chapter 3, *Environmental Impact Analysis*.

Draft EIR

Impact Analysis

This Draft EIR analyzes significant effects that could result from the Project. As explained in Section 15002(g) of the State CEQA Guidelines, a significant effect on the environment is defined as a substantial adverse change in the physical conditions that exist in the area affected by a project. Pre-project environmental conditions (the environmental baseline) are considered in determining impact significance. The impact significance thresholds for each environmental resource area presented in this Draft EIR are based on State CEQA Guidelines Appendix G, *Environmental Checklist Form*. In addition, this Draft EIR uses City-adopted significance criteria for traffic impacts. Where significant impacts are identified, the Draft EIR recommends feasible mitigation measures to reduce, eliminate, or avoid the significant impacts and identifies which significant impacts are unavoidable. Cumulative impacts—two or more individual effects that, when considered together, compound or increase other related environmental impacts—are discussed for each environmental resource area. This document also discusses feasible alternatives to the Project in Chapter 5, *Alternatives*.

In accordance with Section 15143 of the State CEQA Guidelines, this Draft EIR provides an analysis of the potentially significant effects on the environment that could result from construction and operation of the Project. Section 15131 of the State CEQA Guidelines specifies that "the intermediate economic or social changes need not be analyzed in any detail greater than necessary to trace the chain of cause and effect. The focus of the analysis shall be on the physical changes." Therefore, this Draft EIR does not treat economic or social effects of the Project as significant effects on the environment. In addition, if it is determined that a potential impact is too speculative for evaluation, this condition is noted, and further discussion of the impact is not necessary under CEQA.

Public Review

This Draft EIR is considered a draft under CEQA because it must be reviewed and commented upon by public agencies, organizations, and individuals before being finalized. This document is being distributed for a minimum of a 45-day public review and comment period. Readers are invited to submit written comments on the document. Comments are most helpful when they suggest specific alternatives or measures that would better mitigate significant environmental effects. Hard copies of the Draft EIR are available for review at the Menlo Park Library located at 800 Alma Street. Electronic copies of the Draft EIR are available for review online at http://menlopark.org/1012/Environmental-Impact-Report.

Written comments should be submitted to:

Kyle Perata, Senior Planner
City of Menlo Park
Community Development Department, Planning Division
701 Laurel Street
Menlo Park, CA 94025
Email: ktperata@menlopark.org

A public hearing to take oral comments on the Draft EIR will be held before the Planning Commission on June 20, 2016. Hearing notices will be mailed to responsible agencies and interested individuals.

Final EIR and Project Approval

Following the close of the public review period, the City will prepare responses to all substantive comments that relate to potential physical changes to the environment. The Draft EIR, along with the responses to the written and oral substantive comments received during the review period, will make up the Final EIR and be considered by the City Council in making the decision whether to certify the Final EIR and approve or deny the Project.

Certification of the Final EIR by the City Council as complete and adequate, in conformance with CEQA, does not grant any land use approvals or entitlements for the Project. The merits of the Project will be considered by the City Council in tandem with review of the Final EIR. The State CEQA Guidelines require that, for one or more significant and unavoidable impact that cannot be substantially mitigated, the lead agency must prepare a Statement of Overriding Considerations that balances the social, economic, technological, and legal benefits of approving a project against the significant and unavoidable environmental impacts that would result from project implementation. If significant and unavoidable impacts are identified, the City Council must approve the Statement of Overriding Considerations for the Project to be approved.

1.4 Report Organization

This Draft EIR is organized into the following sections:

- *Executive Summary*: Provides a summary of the Project and the impacts that would result from its implementation and describes mitigation measures recommended to reduce, eliminate, or avoid significant impacts. The Executive summary also discusses alternatives to the Project.
- *Chapter 1—Introduction*: Discusses the purpose of the overall Draft EIR, provides a summary of the Project and the CEQA process, and summarizes the organization of the Draft EIR.
- *Chapter 2—Project Description*: Provides a description of the Project site, site development, Project objectives, the required approvals process, and Project characteristics.
- *Chapter 3—Environmental Impact Analysis*: Describes the existing conditions/setting, analyzes the environmental impact, and provides mitigation measures (if applicable) for each environmental resource area.
- *Chapter 4—Other CEQA Considerations*: Provides discussions required by CEQA, including a list of the Project's effects, significant irreversible changes, cumulative impacts, and effects that were found not to be significant, among other topics.
- *Chapter 5—Alternatives*: Evaluates one alternative to the Project, the Reduced Intensity Alternative, in addition to the No Project Alternative.

Chapter 2
Project Description

Hibiscus Properties, LLC (Project Sponsor), an affiliate of Facebook, Inc., is proposing to redevelop an existing approximately 58-acre industrial site (Project site), known as the TE Connectivity (TE) Campus, by demolishing existing onsite buildings and landscaping and constructing two new office buildings and a hotel (Project). The Project would expand the existing Facebook Campus, which currently consists of Buildings 10–19 (formerly known as the East Campus), located north of Bayfront Expressway/State Route (SR) 84; Building 20, located east of the Project site; and Building 23, located at the western end of the Project site and currently undergoing tenant improvements.

The Project includes the demolition of existing onsite buildings, paving and landscaping, and the construction of two new office buildings (Buildings 21 and 22), encompassing approximately 962,400 gross square feet (gsf). In addition, the Project includes a 200-room limited-service[1] hotel with approximately 174,800 gsf. Development of the office buildings and hotel would result in a net increase of approximately 121,300 gsf at the Project site. The Project Sponsor is also proposing a trip cap as part of the Project to limit the number of daily and peak-period trips (AM and PM) and reduce traffic impacts. Although Building 20 is currently subject to a trip cap under a prior entitlement process, the Project would implement a trip cap that would apply to both the Project site (including Building 23) and Building 20. In addition, the Project would include a Transportation Demand Management (TDM) program to promote alternatives to private automotive travel and reduce the number of single-occupancy vehicle trips, as well as the resulting traffic, and reduce greenhouse gas emissions.

Building 21, which would be constructed during the first phase of development, would be connected to the existing Building 20 through an enclosed bridge. Building 22 would be constructed during the second phase of development. It is anticipated that Building 22 would be connected to Building 21 through an open-air bridge. The hotel would be located near the corner of Chilco Street and SR 84 and also constructed in the second phase. The Project would provide approximately 3,533 parking spaces for the office buildings, hotel, and Building 23.[2,3] The office buildings and the hotel would be approximately 75 feet in height.

The Project would be organized around a publicly accessible open space that would provide a connection to the San Francisco Bay Trail (Bay Trail) and a gathering space for the community. A multi-use bicycle/pedestrian bridge over SR 84 would allow access to the Bay Trail and Bedwell Bayfront Park (Bayfront Park) from the Project site and the Belle Haven neighborhood. The Project would also include bicycle/pedestrian pathways that would be separated from the internal vehicle access roads where feasible. The onsite paths would connect the proposed office buildings to the existing Building 20 east of the Project site and Facebook Buildings 10–19 north of SR 84. In addition, a new 1-acre terraced garden space, primarily for employee use, would be provided between Buildings 20 and 21. The perimeter of

[1] A limited-service hotel generally offers fewer services (e.g., in-house drinking and dining options) than a full-service hotel.

[2] If the hotel is constructed, then the parking spaces associated with the hotel would be in a surface parking lot under the podium of the hotel. If the hotel is not constructed, then a surface parking lot with the same number of spaces would be provided in the northwestern portion of the Project site.

[3] Building 23 is not part of the Project but is on the Project site. The parking spaces developed as part of the Project would be available to Building 23.

the Project site would have a landscaped buffer. As a separate project, Facebook (in partnership with the City of Menlo Park) is constructing bicycle and pedestrian improvements on Chilco Street, along the perimeter of the site, to improve safety in the area. The frontage improvements would also include landscaping along the frontage.

2.1 Project Location and Setting

The Project site is located in Menlo Park, north of US 101, and bounded by Bayfront Expressway (SR 84) to the north, Chilco Street to the west and south, and Facebook Building 20 to the east. Figure 2-1 depicts the Project's location and adjacent uses. Tidal mudflats and marshes in the San Francisco Bay (Bay), the Don Edwards San Francisco Bay National Wildlife Refuge (Refuge), Ravenswood Slough, and the former salt ponds[4] are located across SR 84, north of the Project site. Facebook Building 20 is adjacent to the Project site to the east. South of the Project site, across Chilco Street and the Dumbarton Rail Corridor, is the Belle Haven neighborhood, which includes a mix of uses, including churches, Menlo Park Fire Station No. 77, single-family residences, multi-family residential units, and institutional buildings. The Belle Haven neighborhood also includes institutional and park uses, such as Beechwood School, Belle Haven Elementary School, the Belle Haven Pool, Belle Haven Youth Center, Onetta Harris Community Center, Menlo Park Senior Center, Boys and Girls Club, Hamilton Park, and Kelly Park. Industrial and office uses are located across Chilco Street, west of the Project site.

Regional highways that provide access to the Project site include US 101, approximately 0.3 mile to the southwest, and SR 84, immediately adjacent to the north. The Menlo Park Caltrain station is located approximately 2 miles south of the Project site, providing weekday service from San Francisco to Gilroy and weekend service from San Francisco to San José.

As described above, the existing Facebook Campus consists of Buildings 10–19, located north of SR 84, Building 20, located adjacent to the Project site to the east, and Building 23, located at the western end of the site. Buildings 10–19 total approximately 1 million gsf. These buildings include mainly office uses, except for Buildings 11, 18, and 19, which include cafés and a fitness center. The buildings range in height from 31.5 to 47 feet at the top of the parapet. Parking for Buildings 10–19 includes approximately 3,450 spaces in surface lots. Approximately 6,600 employees currently work in Buildings 10–19.[5]

Building 20 is an approximately 433,555 gsf office building with approximately 1,500 parking spaces, located at-grade beneath the building podium. Inclusive of all rooftop mechanical screening and the East Lobby roof, Building 20 is approximately 73 feet in height. Building 20 became operational in 2015 and accommodates approximately 2,800 employees.

Site Characteristics

The approximately 58-acre Project site encompasses the existing TE Campus at 300–309 Constitution Drive in the city. The Project site is relatively flat; elevations range from 7 to 10.5 feet NAVD.[6] The Project site consists of one parcel (APN 055-260-250), zoned M-2 (General Industrial) and M-2(X)

[4] The former salt ponds are the subject of a forthcoming restoration project and analyzed throughout this document as a cumulative (i.e., reasonably foreseeable) project (see Chapter 3, *Environmental Impact Analysis*).

[5] City of Menlo Park. 2012. *Menlo Park Facebook Campus Project: Final EIR*. April.

[6] North American Vertical Datum of 1988.

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Figure 2-1
Project Location
Facebook Campus Expansion Project Draft EIR

(General Industrial, Conditional Development). It is designated as Limited Industry under the City of Menlo Park General Plan and can be built out to approximately 1.142 million gsf for office uses under the allowable 0.45 floor area ratio (FAR) and up to approximately 1.396 million gsf (0.55 FAR) for other general industrial uses, including, but not limited to, warehousing, manufacturing, printing, assembling, related office and laboratory uses, and shipping and receiving.

Currently, 10 buildings are located at the Project site (see Figure 2-2), with industrial, warehouse, office, and research and development (R&D) uses totaling approximately 1.02 million gsf (including Building 23).[7] The buildings, which cover approximately 46 percent of the Project site, range in height from one level to three partial levels. The buildings were generally built in the late 1960s as an industrial and manufacturing facility. In addition, an electrical substation is located on the west side of Building 23.

Site History

Raychem (which was acquired by Tyco Thermal Controls, now known as TE Connectivity) purchased the Project site in the mid-1960s. A former pilot plant operated onsite and contained manufacturing facilities.[8] TE, which occupies some of the buildings at the site, used and continues to use the site primarily for industrial and manufacturing activities. Table 2-1 summarizes the existing buildings at the Project site.

Table 2-1. Existing Conditions at the Project Site

Building ID	Construction Date	Levels	Area (gsf)
Building 23 (300)	1969 (north)/circa 1975 (south)		180,100
301	1967	2	34,500
302	1967	2	30,200
303	1967	1	35,500
304	1990	1 to 3 (partial)	24,200
305 A, B, C	1966; addition in 1969	1 to 2 (partial)	289,700
306	1968	1 to 2 (partial)	95,400
307	1969	1	156,400
308[a]	1970	2	120,000
309[a]	1990	1 to 2 (partial)	47,700
CTF[b]	1989	1	2,200
Total			1,015,900

Source: Hibiscus Properties, LLC, 2015.

Notes:

a. Buildings 308 and 309 are considered one building, even though they have two distinct addresses. Therefore, the existing Project site includes 10 buildings.

b. CTF is the Chemical Transfer Facility.

[7] Although 10 buildings were located on the Project site at the time of the NOP release (the baseline), prior to the City's consideration of the Project, two buildings (307–309) were slated to be demolished. This will occur as a separate project; therefore, for purposes of this analysis, it is assumed that Buildings 307–309 are existing at the Project site.

[8] A pilot plant is a small industrial facility that is operated to generate information about the behavior of the facility for use in the design of larger facilities.

The Project site is currently accessible from one stop sign–controlled driveway on Chilco Street. There is also an emergency vehicle access point between the eastern end of the Project site and the adjacent Building 20. The Project site includes approximately 1,690 parking spaces and 770 trees. Of those trees, approximately 274 qualify as heritage trees under the City of Menlo Park's Heritage Tree Ordinance.[9,10] Approximately 35 tree species are located on the Project site, with the most represented species being London plane (*Platanus x hispanica*), myoporum (*Myoporum laetum*), olive (*Olea europea*), Monterey pine (*Pinus radiata*), and Aleppo pine (*Pinus halepensis*).

Building 23

The Project site includes Building 23 (formerly Building 300). In December 2014, the Planning Commission approved a use permit to convert Building 23, an approximately 184,438 gsf warehouse building in the southwestern portion of the Project site, to office uses without adding any net new square footage, subject to no increase in the number of trips to the overall site. Building 23 will contain approximately 180,100 gsf of floor area upon occupancy (exclusive of the mezzanine space, which is slated for removal). Renovation and occupancy of Building 23 is expected to be completed in the summer of 2016. Although Building 23 is located on the Project site, its renovation and occupancy are not included as part of the Project because it has received a separate permit from the City of Menlo Park. Nevertheless, Building 23 is relevant in that the Project includes a trip cap that addresses trips to the entire Project site, which includes Building 23.[11]

Hazardous Materials

As explained above, the Raychem Corporation (now part of TE Connectivity) purchased the Project site and adjacent property to the east in the mid-1960s to develop offices and manufacturing facilities. Most products manufactured on the Raychem site were based on a technology that involved radiation crosslinking, a process by which certain polymers are exposed to radiation and cross linked to produce characteristics such as toughness, abrasion resistance, cut-through resistance, solvent and chemical resistance, improved high-temperature performance, and elastic memory. Radiation crosslinking of polymer molecules used high-energy electron beam radiation. From 1968 to 1978, a pilot plant, located on the central portion of the Project site between Buildings 305 and 307, contained manufacturing facilities for polymers, antioxidants, paints, adhesives, epoxies, mastics, PCBs, coatings, and gels. The pilot plant was demolished in 1984.[12]

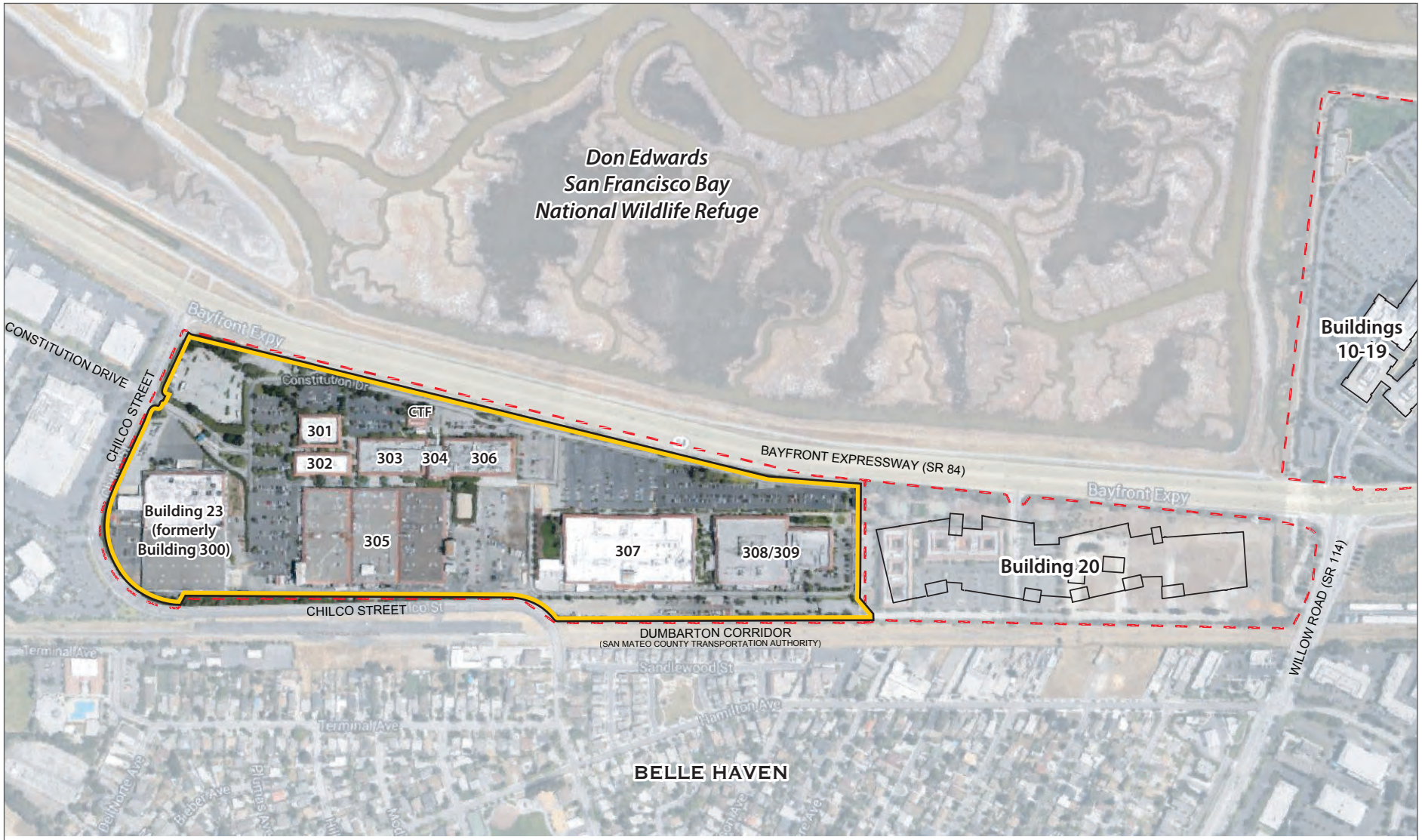
Over the years, a large variety of chemicals, many in large quantities, were used and stored at the Project site. Because residual chemicals remain in the soil and groundwater at the Project site, the California Department of Toxic Substances Control (DTSC) determined that a covenant and agreement to restrict uses at the Project site was necessary for the protection of human health and the environment. A Land Use Covenant (LUC), restricting use of the site, was made between TE and DTSC in January 2007. The LUC is binding upon all owners of the land, their heirs, successors, and assignees. DTSC determined that the LUC was necessary to protect present or future human health and safety or the environment from

[9] SCBA Tree Consulting. 2015. *Tree Survey at 301–309 Constitution Drive.* December 21, 2015.

[10] City of Menlo Park. 2010. *Menlo Park Municipal Code*. Section 16.46.030(7). December 14, 2010.

[11] Under the Project, the proposed trip cap would encompass existing Buildings 20 and 23 and proposed Buildings 21, 22, and the hotel.

[12] Cornerstone Earth Group. 2014. *Phase I Environmental Site Assessment and Preliminary Soil and Soil Vapor Quality Investigation, 300 to 309 Constitution Drive, Menlo Park, California*. July 31.



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Source: Gehry Partners, LLP, 2015

Legend

Facebook Campus

Project site

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Figure 2-2
Existing Site Overview
Facebook Campus Expansion Project Draft EIR

the presence of hazardous materials. The LUC restricts use of the former Raychem site (including the Project site) to commercial and industrial land uses and outlines several requirements that pertain to development and future operation and maintenance of the site. An Operation, Maintenance, and Monitoring Plan was also prepared in 2006 to provide general guidance in the event that odorous or discolored soils are encountered during future redevelopment activities.

2.2 Project Objectives

This draft environmental impact report (Draft EIR) addresses the physical impacts of the Project, as required by the California Environmental Quality Act (CEQA). The Project Sponsor has identified the following Project objectives, which are relevant to the physical impacts considered in this document:

- Responsibly expand the Facebook Campus within Menlo Park to create a diverse and economically resilient workspace for Facebook and its affiliated companies, such as Instagram, Oculus, and Internet.org, and allow for a long-term presence in Menlo Park.
- Provide high-quality, highly sustainable office space at a permitted development density of 0.45 FAR that incorporates a robust TDM program.
- Develop a highly connected Campus that provides flexible workspace.
- Minimize traffic and greenhouse gas emissions by providing multiple transportation options for employees.
- Use highly sustainable design techniques to promote energy and water efficiency.
- Connect the Campus to the community by including publicly accessible open space.
- Create a bicycle-/pedestrian-friendly environment that enhances connectivity between the Belle Haven neighborhood and Bayfront Park and the Bay Trail.
- Rehabilitate an existing industrial site, and remediate hazardous materials where appropriate.
- Provide new green spaces and additional habitat and landscaped areas with native drought-tolerant plant species.
- Create an accessible Campus that enhances connectivity and promotes a sense of transition between the Belle Haven neighborhood and the Bay.
- Generate new revenue for the City and other public entities, including potential transit occupancy tax revenue from a potential new limited-service hotel.

2.3 Project Characteristics

The Project includes the demolition of existing buildings and the construction of two new office buildings (Buildings 21 and 22), encompassing approximately 962,400 gsf, combined. The Project also proposes a new limited-service hotel that would be located in the northwest corner of the Project site.

As shown in Table 2-1, the 10 existing onsite buildings total approximately 1.02 million gsf. In total, seven of the 10 existing buildings (301–306 and the CTF), with a total floor area of approximately 511,700 gsf, would be demolished with implementation of the Project. Buildings 307–

309 (approximately 324,150 gsf) would be demolished regardless of Project implementation. Demolition of these buildings would occur prior to Project implementation under a separate ministerial permit.[13]

As shown in Table 2-2, Buildings 21 and 22 would total approximately 512,900 gsf and 449,500 gsf, respectively, and would include office space, support rooms, amenities, event space, and circulation areas. The approximately 174,800 gsf hotel would include 200 rooms, food and beverage areas, function space, a fitness room, a pool, and deck areas.

Table 2-2. Total Development at the Project Site

Building ID	Building Use	Height	Area (gsf)
Existing Building to Remain			
Total Building 23	*Office*	*34 feet*	*180,100*[a]
Proposed Buildings			
Building 21	Office		195,900
	Support Rooms		50,400
	Amenities		57,600
	Event Space		31,100
	Circulation, Walls, Structures, Stairs, etc.		177,900
Total Building 21		*75 feet*	*512,900*
Building 22	Office		168,800
	Support Rooms		42,000
	Amenities		56,400
	Event Space		1,200
	Circulation, Walls, Structures, Stairs, etc.		181,100
Total Building 22		*75 feet*	*449,500*
Total Office Buildings			*962,400*
Hotel	Office		1,800
	Support Rooms		11,500
	Amenities		13,700
	Hotel		61,700
	Circulation, Walls, Structures, Stairs, etc.		86,100
Total Hotel		*75 feet*	*174,800*
Total Proposed Buildings			***1,137,200***
Total Buildings at Project Site (including Building 23)			***1,317,300***

Source: Hibiscus Properties, LLC, 2015.

Notes:

a. Office use associated with Building 23, which is currently being renovated and is not part of the Project.

[13] Granting a demolition permit is a ministerial action that is exempt from CEQA under Public Resources Code Section 21080(b)(1). Buildings 307–309 were granted a permit and partially demolished prior to certification of this EIR and approval of the Project. Because these buildings were partially demolished prior to certification of the EIR and a separate project under a ministerial permit, their demolition is not included in the Project analysis. Rather, their demolition is analyzed throughout this document as a cumulative (i.e., reasonably foreseeable) project (see Chapter 3, *Environmental Impact Analysis*).

The Project buildings would be organized around a publicly accessible open space, approximately 2 acres in size, that would provide a connection through the Project site to the Bay Trail. A multi-use bicycle/pedestrian bridge would extend over Bayfront Expressway at a height of about 35 feet, allowing access to the Bay Trail and Bayfront Park from the Project site and the Belle Haven neighborhood. The bridge would touch down north of the Bay Trail, within the California Department of Transportation (Caltrans) right-of-way adjacent to the marsh/salt ponds. Approximately 3,533 parking spaces would be provided in podium parking areas under the proposed buildings and within surface parking lots. The office uses (including Building 23) would include 3,288 parking spaces, while approximately 245 spaces would be provided for the hotel.

Figure 2-3 depicts the conceptual site plan for the Project site. Figures 2-4 through 2-6 show the proposed building elevations.[14]

Proposed Office Buildings

Buildings 21 and 22, which would be constructed during Phases 1 and 2, respectively, would be oriented in an east/west direction, parallel to SR 84, and located on podiums over surface parking. The parking areas for both buildings would generally be open around the perimeter and screened with landscaping. The majority of parking spaces would be covered by the proposed structures or, potentially, canopies with solar photovoltaic roofs. The outside of the buildings would have exposed open stairways on the north and south façades. In addition, Building 21 would be connected to the existing Building 20 east of the Project site, with an elevated enclosure containing useable floor area. Buildings 21 and 22 would be connected with an open-air bridge. The proposed buildings would be similar in height to Building 20; however, architectural materials, textures, and colors could be different. Each building would offer a variety of design styles and building articulations. Maximum building heights would be 75 feet, not including mechanical structures and related screening.

The construction of Buildings 21 and 22 would result in a gross floor area of approximately 962,400 gsf. Including Building 23, the total gross floor area of office uses on the Project site would be approximately 1.143 million gsf, which is within the 0.45 FAR maximum for office uses. Development of Buildings 21 and 22 and the hotel would result in a net increase in floor area of approximately 121,300 gsf at the Project site. The total gross floor area at the Project site would be approximately 1.317 million gsf, which is within the 0.55 FAR maximum of the M-2 zoning district for other general industrial uses.[15]

Combined, construction of Buildings 21 and 22 would result in approximately 364,700 gsf of office uses and 359,000 gsf of circulation, wall, structure, and stair space. In addition, approximately 92,400 gsf would be provided for support rooms, such as electrical and machine rooms, shipping and receiving facilities, storage rooms, security areas, bicycle storage areas, restrooms, information technology rooms, showers, and lockers. The two buildings combined would also include 114,000 gsf of amenity uses, such as cafeterias, a private dining room, and other smaller food service areas. Event space would include approximately 32,300 gsf of performance space, lobbies, restrooms, and back-of-house support.

[14] Note that the design of Building 21 is more complete because it would be constructed during Phase 1 while the existing tenants operate in the other portion of the Project site. The designs for Building 22 and the hotel are essentially massing studies at this stage.

[15] Although Building 23 is not part of the Project, it is included in the FAR calculations because it is located on the Project site.

Building 21

Building 21 (Phase 1) would be located in the eastern portion of the Project site and contain approximately 512,900 gsf of office and event uses. Building 21 would be a multi-story building on a podium structure above an at-grade parking lot. The ground level would consist of parking for approximately 1,476 vehicles and four lobbies for employees and guests. Surface parking would include landscaping to provide visual screening and reduce noise and glare. Solar photovoltaic canopies could also be located above the parking level on the south side of the building. A loading dock would be provided at the northwestern portion of the ground level and accessible via the existing stop sign–controlled driveway on Chilco Street at Constitution Drive. Passenger vehicle access to Building 21 would be from the proposed exit/entry along SR 84.

The first floor of the building would include open office space and several amenity and support spaces, with a mezzanine level above. The event space on the first floor would be utilized primarily for internal Facebook events (e.g., all-hands meetings and internal corporate meetings). Several large annual Facebook events and three or four smaller employee events per week would be held in the 31,100 gsf event space, with capacity to accommodate seating for approximately 2,000 people. The roof level would include a deck with landscaped areas, paths, decks, and patios associated with the interior meeting rooms; a dining area for employees; and a café with outdoor gas-fired grilles and fire pits. The roof area would be landscaped and could provide enclosed conference rooms, sunken gardens, and workspaces. The roof would also include mechanical enclosures for the heating, ventilation, and air-conditioning (HVAC) equipment.

Building 22

The detailed layout and features of Building 22 (Phase 2) have yet to be designed but are anticipated to be similar to those of Building 21. This building would comprise approximately 449,500 gsf of office and event space and be located in the western portion of the Project site. The ground level would include multiple lobbies and parking spaces for approximately 1,294 vehicles. The first floor of the building would accommodate office and amenity space and could include a mezzanine level. As with Building 21, the interior would be designed to provide natural daylight from large window openings on the building's perimeter and skylight roof openings. Useable open space would be provided on the roof, which would include landscaped areas, walking paths, and HVAC equipment, similar to Building 21. An outdoor terraced area would be located adjacent to the food court/dining area on the south side of Building 22. The food court would be separated from the main level by the outdoor terraced area, which would allow for outdoor dining.

Proposed Hotel

The Project would include a 200-room, limited-service hotel with approximately 174,800 gsf of space in the northwestern portion of the Project site, near the corner of Chilco Street and SR 84. The hotel would provide approximately 73,200 gsf of hotel and support space, approximately 1,800 gsf of office space, approximately 13,700 gsf of amenities, and 86,100 gsf of circulation, wall, structure, and stair space. Included in the amenities would be food and beverage areas for the public, multi-function space, a fitness room, a pool, and deck areas. The hotel has yet to be designed, but for purposes of this EIR, it is assumed to be approximately 75 feet in height.

Source: Gehry Partners, LLP, 2016.

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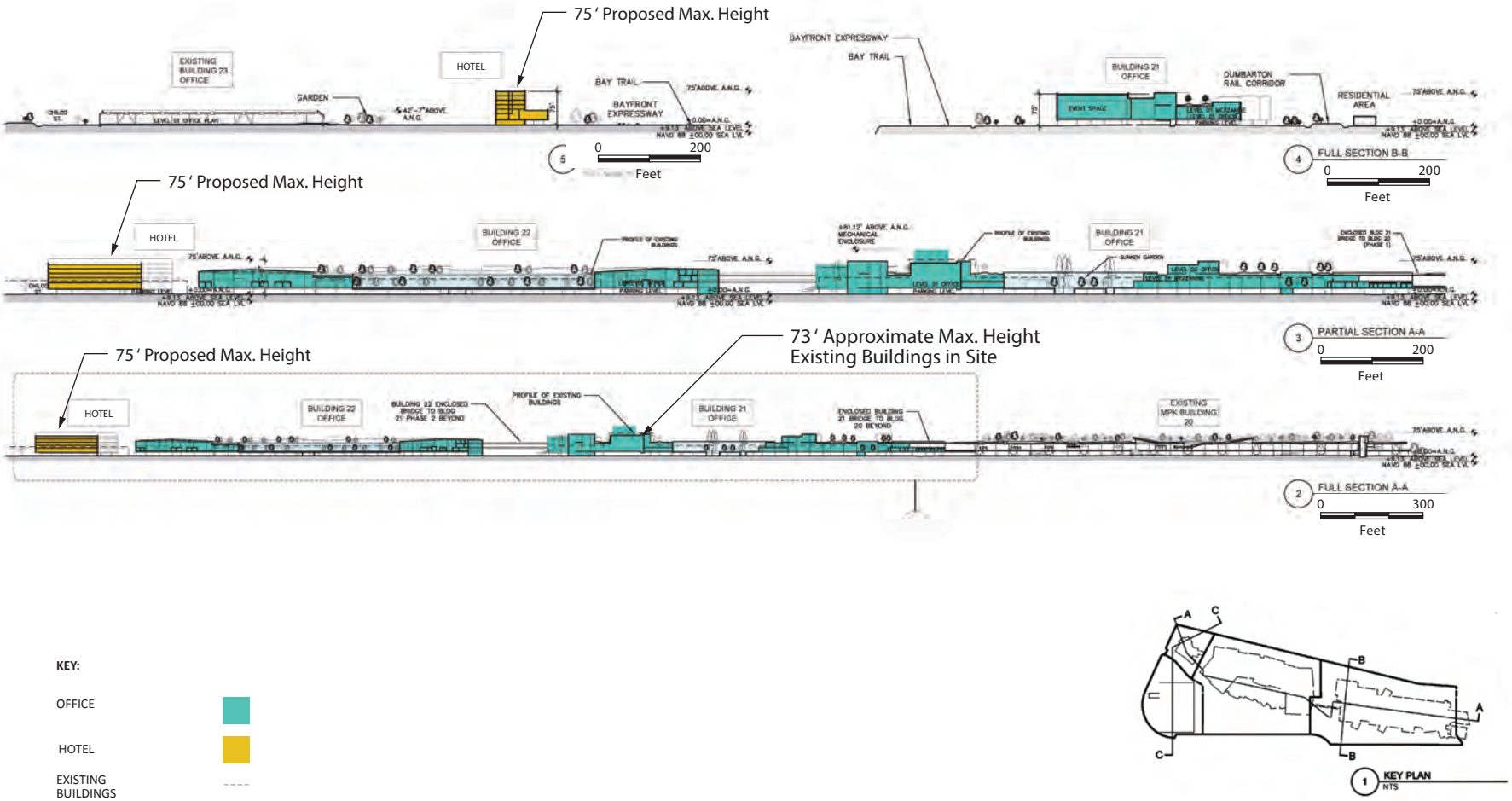
Figure 2-3
Conceptual Site Plan
Facebook Campus Expansion Project Draft EIR



KEY:

OFFICE

HOTEL

EXISTING BUILDINGS

BLDG. 23 IS NOT PART OF THE PROJECT

Source: Gehry Partners, LLP, 2016.

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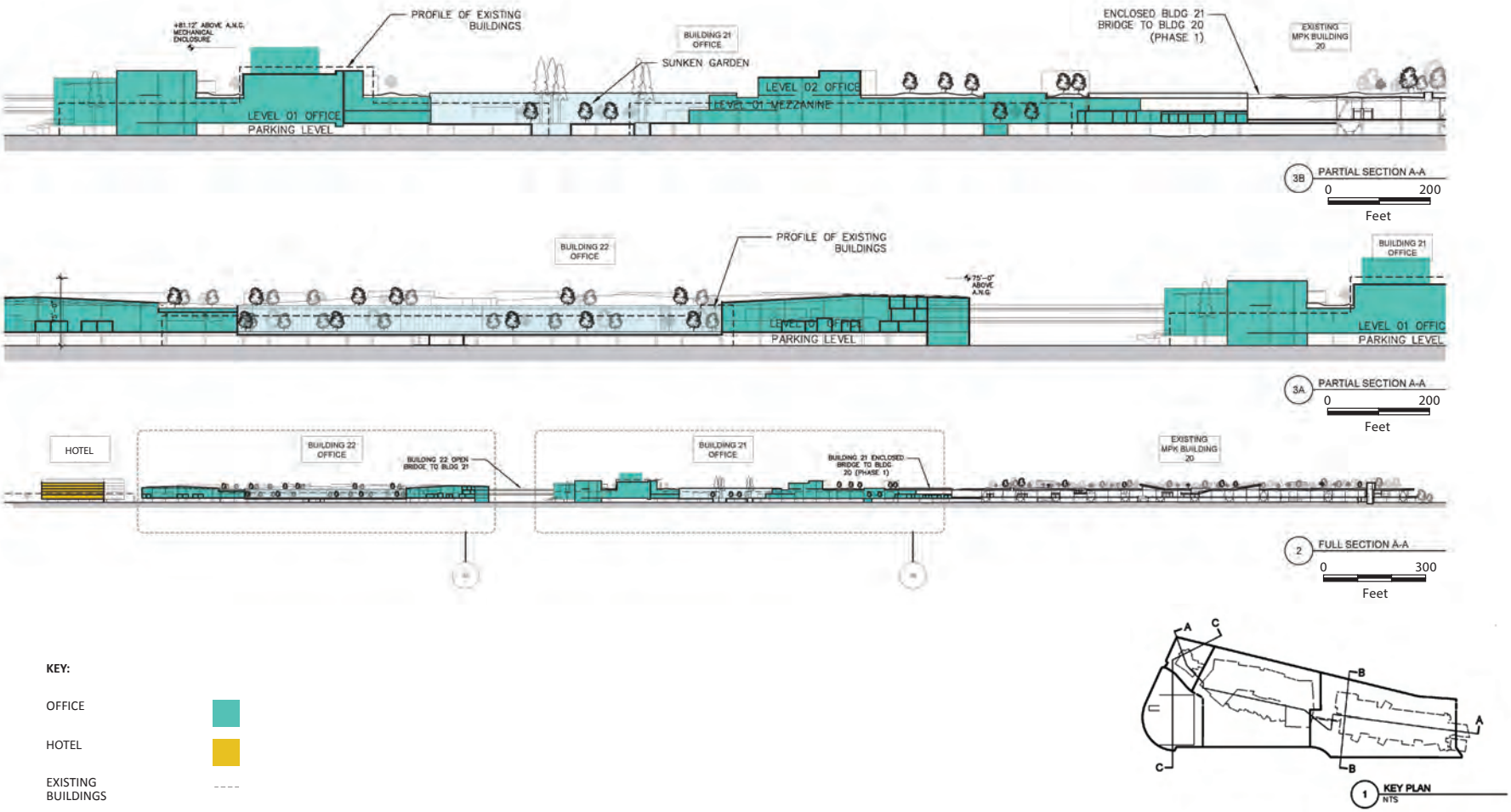
Figure 2-4
Site Sections
Facebook Campus Expansion Project Draft EIR



Source: Gehry Partners, LLP, 2016.

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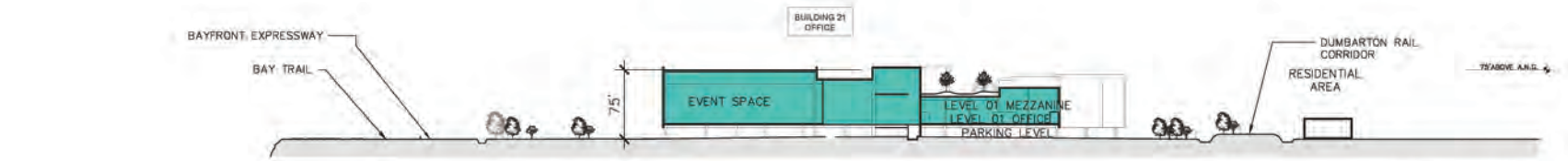
Figure 2-5
Site Sections
Facebook Campus Expansion Project Draft EIR



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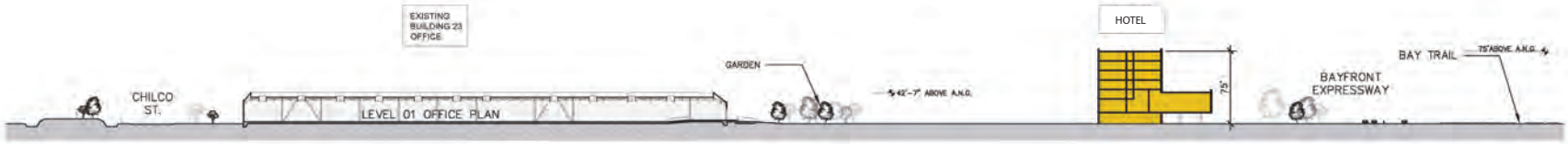

5 FULL SECTION C-C

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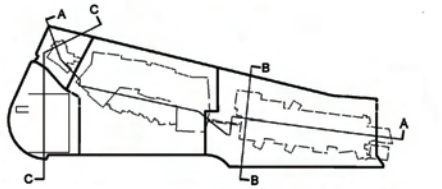

1 KEY PLAN

NTS

KEY:

OFFICE

HOTEL

EXISTING BUILDINGS

BLDG. 23 IS NOT PART OF THE PROJECT

Source: Gehry Partners, LLP, 2016.

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Figure 2-6
Site Sections
Facebook Campus Expansion Project Draft EIR

Activity/Employment

Building 21 would accommodate approximately 3,400 employees, and Building 22 would accommodate approximately 3,000 employees. Therefore, in total, the proposed office buildings would accommodate approximately 6,400 workers including office workers and employees for on-site food services, amenities, and building services. The hotel would employ approximately 150 workers. This Draft EIR assumes that no employees currently work at the Project site as a result of the use permit that transferred all vehicle trips and, therefore, employees to Building 23.

Site Access, Circulation, and Parking

Vehicular Access and Circulation

The Project site is currently accessible from one four-way stop sign–controlled intersection on Chilco Street at Constitution Drive. As part of the Project, one access point to the Project site would be constructed. A new signalized intersection would be located along SR 84 at approximately the midpoint of the site, east of the publicly accessible open space and the multi-use bicycle/pedestrian bridge. Because SR 84 is under Caltrans jurisdiction, the Project Sponsor is working with Caltrans regarding placement of the new signalized intersection and approval of an encroachment permit. The Project Sponsor has identified vehicular, bicycle, and pedestrian routes within the Project site, as well as emergency vehicle access routes, that would link with Building 20 and ultimately Buildings 10–19, allowing employees and vehicles to circulate within the overall Campus. A vehicular connection to the existing Building 20 on the east end of the site could also be constructed.

Shuttle Access. Facebook currently offers a shuttle service to its employees, including long-distance regional service and service to/from nearby Caltrain stations. Shuttle access to the Project site would be provided at the existing stop sign–controlled driveway on Chilco Street. Two shuttle stops would be located near the lobby on the west side of Building 22. In addition, a shuttle stop would be located near the lobby on the north side of Building 21, close to the outdoor terrace. Building 20 also has an existing shuttle stop on the west end of the building that would be shared with Building 21.

Tram Access. Facebook currently offers a tram for intra-campus travel. The existing tram system connects Buildings 10–19, north of SR 84, with Building 20 to the south via a grade-separated crossing under SR 84. Utilization of this tram system allows for the efficient movement of employees without adding vehicular traffic to SR 84 or Willow Road. With implementation of the Project, the tram system would be expanded onto the Project site. Tram access to the Project site would be provided from Building 20, along the perimeter roadway located south of Building 21. Tram stops would be located near the lobby on the south side of Building 22, near the lobby on the west side of Building 21 adjacent to the proposed park, near the outdoor terrace southeast of Building 21, and near the lobby on the northwest side of Building 21. The trams operate at maximum speeds of 25 miles per hour (mph) on the Campus, with highest speeds reached on the onsite private ring road near Buildings 10–19 where the trams share the roadway with personal vehicles and shuttle buses. At the Project site, the trams are expected to operate at 20 mph or less.

Truck Access. Truck access to the Project site would be provided from the existing stop sign–controlled driveway on Chilco Street at Constitution Drive. Truck access to the Project site would not be provided from any other portion of Chilco Street. The Project site would include a total of three loading docks. One dock would be located at Building 21, one dock would be located at Building 22, and one dock would be located near Chilco Street between Building 23 and the proposed surface parking lot to the east. At

Building 21, it is currently anticipated that 10 deliveries of food products would be made per day, while two deliveries of equipment would be made per week. At Building 22, approximately nine deliveries of food products would be made per day, and equipment would be delivered twice per week.

Emergency Vehicle Access. Emergency vehicle and fire truck access would be provided along the outside perimeter of the office buildings. Each proposed building would be accessible to emergency vehicles via the perimeter roadway or parking aisles. Along Chilco Street, emergency vehicles would access the site from the existing stop sign–controlled driveway. In addition, emergency vehicles would access the site from the new signalized intersection on SR 84, at the midpoint of the site, as well as two points on Chilco Street, immediately southeast of Building 23 and south of the proposed open space. The emergency routes for the Project would connect with the existing emergency vehicle access routes that serve Building 20. Staging areas for emergency vehicles would be located throughout the site. Two turnaround areas for fire trucks would be located northwest of Building 23, and one turnaround area would be located near Chilco Street between Building 23 and the proposed surface parking lot to the east.

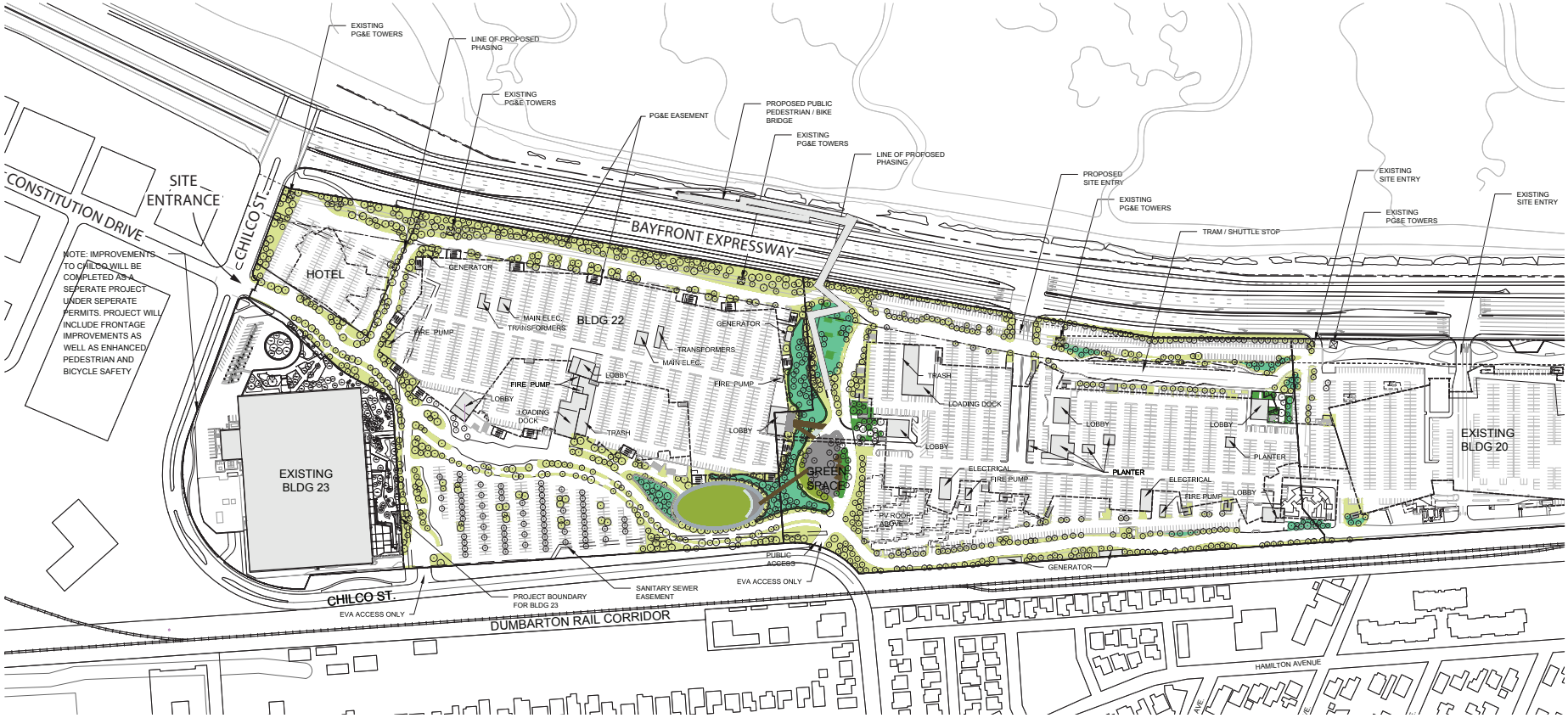
Bicycle/Pedestrian Circulation

The Project would be organized around a publicly accessible open space and a multi-use bicycle/pedestrian corridor that would run north–south through the middle of the site. The Project would also include construction of a new multi-use bicycle/pedestrian bridge over SR 84 to allow public access to the Bay Trail and Bayfront Park from the Project site and the Belle Haven neighborhood. In addition, residents of the Belle Haven neighborhood, as well as the general public, would have access to the publicly accessible open space and the multi-use bicycle/pedestrian bridge, thereby increasing public access to the Bay Trail. The foundation and vertical supports of the bridge touchdown north of SR 84 would be located within the Caltrans easement and the Bay Trail, but would not extend into the Refuge. A portion of the aerial walkway could cantilever beyond the Caltrans easement. The bridge would have a maximum height of approximately 35 feet and be designed to accommodate any future levee improvements, including those that correspond with the SAFER Bay project, which includes flood protection measures (e.g., bridges, channel widening, and levees/floodwalls).

The perimeter of the Project site would be a landscaped buffer that would provide screening for the parking areas. A new sidewalk and other frontage improvements would be constructed along Chilco Street; however, these would occur as part of a separate project. Such improvements are analyzed throughout this document in the cumulative discussion (see Chapter 3, *Environmental Impact Analysis*).

Parking

As shown in Table 2-3 and Figure 2-7, the Project site could include surface parking for up to 3,533 vehicles, including vehicles at Building 23, resulting in a net increase in the number of parking spaces (1,690 parking spaces currently serve existing tenants on the site and would serve future occupants of Building 23). As described above, parking for Buildings 21 and 22 would be provided in surface parking lots under the buildings, with approximately 1,476 and 1,294 parking spaces per building, respectively. As part of the Project, a surface parking lot would be constructed south of Building 22 and east of Building 23. This parking lot would provide approximately 518 spaces for Building 23. In total, parking spaces at the office uses (including Building 23) would accommodate 3,288 vehicles. In addition, approximately 245 spaces would be provided in the parking area under the hotel. Of the 3,533 parking spaces, approximately 106 parking spaces would be designated for energy-efficient vehicles, 65 spaces would be Americans with Disabilities Act– (ADA-) compliant for vehicles, and 11 spaces would be ADA-compliant for vans.



Source: Gehry Partners, LLP, 2016.

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Figure 2-7
Parking Level Plan
Facebook Campus Expansion Project Draft EIR

Table 2-3. Total Parking at the Project Site

Location	Number of Spaces
Building 21	1,476
Building 22	1,294
Building 23	518
Hotel	245
Total Parking Spaces	*3,533*

Source: Hibiscus Properties, LLC, 2016.

Landscaping, Site Design, and Publicly Accessible Open Space

The proposed landscaping improvements are intended to increase open space and landscape areas at the Project site significantly, provide public access and connectivity between the Belle Haven neighborhood and the Bay Trail, improve biking and pedestrian circulation, create new social spaces, and integrate with the adjacent Building 20. The new landscaping would be developed pursuant to the City of Menlo Park Water-Efficient Landscape Ordinance and composed of native plant communities that would be well adapted to the Project site and sensitive to adjacent bayland habitats. The Project would include multi-level landscaping, with spaces at the ground, office, and roof levels.

The existing site is primarily hardscape, with landscaping and other pervious materials covering approximately 14 percent, or 303,400 gsf, of the Project site (not including Building 23). At full development, the Project would increase the amount of pervious landscaped area to approximately 30 percent, or 662,200 gsf, of the site. The proposed landscape would include natural areas at the eastern and western ends of the Project site, including stormwater treatment areas that would be depressed several feet. These treatment areas would receive stormwater runoff that has been diverted from impervious surfaces associated with roof landscapes, terrace landscapes, and adjacent parking areas. The natural areas would be planted with a wide variety of native species, with a focus on habitat and stormwater treatment functions. In addition, a series of bioretention areas, known as bioswales, would be integrated within the parking lots to provide stormwater treatment for runoff from impervious surfaces outside of the building footprints.

Approximately 770 trees are currently located on the Project site. Of these, 274 are considered heritage trees per Section 13.24 of the City of Menlo Park's Municipal Code.[16] Under the existing site plans, all trees would be removed, and no heritage trees would remain. However, heritage trees that are in good health (as determined by a certified arborist) would be replaced at a ratio of 2:1; heritage trees with fair or poor health, or dead heritage trees, would be replaced at a ratio of 1:1. The Project Sponsor is proposing to replace the 274 heritage trees that would be removed following Project implementation by planting a minimum of 423 trees throughout the Project site, which meets the Project Sponsor's proposed heritage tree replacement ratio requirement.

Monument and wayfinding signage would be provided at each of the vehicular entry points, consistent with the City of Menlo Park Signage Ordinance. Additional pedestrian wayfinding and rules signage would be located throughout the Project site, including in the publicly accessible open space. The landscaped areas and outdoor amenities for Buildings 21 and 22, the hotel, and the publicly accessible open space are described in more detail below.

[16] SCBA Tree Consulting. 2015. *Tree Survey at 301–309 Constitution Drive.* December 21, 2015.

Buildings 21 and 22

The proposed perimeter landscape areas on the northern and southern boundaries of the Project site, along SR 84 and the Dumbarton Rail Corridor, would continue the landscape established as part of Building 20. Low landforms, up to 4 feet above existing grades, would be planted with native and adapted understory plants. The landforms and groupings of trees would provide a buffer along the northern and southern boundaries of the Project site. In addition, the perimeter of the Project site would be secured with an approximately 8-foot-high fence, comparable in design to the perimeter fencing at Building 20, with security stations at each entry to monitor and secure access to the Project site. The location and alignment of the fence would vary, depending on adjacent conditions along SR 84, Chilco Street, and the Dumbarton Rail Corridor. The parking areas that would extend beyond the building footprints would be shaded by trees that would be interspersed with landscaped areas. In some cases, these may be utilized for stormwater treatment functions but would generally consist of low-maintenance groundcover plantings.

A series of building entry courtyards would be combined with building lobbies at the eastern and western ends of Buildings 21 and 22 as well as within the parking area at the center of each building. Each entry would have a slightly different character and provide seating areas and bicycle parking spaces. An outdoor terrace, approximately 1 acre in size, would be located southeast of Building 21. This terrace would consist of outdoor seating, trees, and simple landscape features, including native and climate-adapted plantings. The terrace area would be shaded by a large open-air canopy structure.

The roof areas of Buildings 21 and 22 would include a combination of pedestrian paths, gathering areas, conference rooms, food service amenities, mechanical spaces, seating and outdoor dining areas, and larger planting areas that would include native and climate-adapted understory and tree plantings. The roof landscape would incorporate “green roof” systems that would provide adequate soil, drainage, and water-efficient irrigation.

Hotel

The western and northern boundaries of the Project site would be improved and landscaped consistent with the rest of the Project site and Building 20. A mixture of pedestrian paths, understory landscape plantings, and trees would be included. The design of the perimeter landscape would integrate with the potential bicycle and pedestrian improvements to Chilco Street. Landscape improvements within the potential hotel site would be developed in the future to support hotel functions while maintaining consistency with the overall Campus character and native climate-adapted plantings.

Publicly Accessible Open Space

An approximately 2-acre publicly accessible open space is proposed between Buildings 21 and 22. The space would include a mix of uses and provide a safe route for pedestrians and bicyclists between the Belle Haven neighborhood, SR 84, and the Bay Trail. As a privately owned publicly accessible open space, this area would be compatible with both the Campus environment and public access needs, providing a gathering place as well as new points of connection to the Bay. As with the perimeter of the Project site, the boundaries of the publicly accessible open space would be secured, with security stations to monitor and secure access to the office buildings.

A public plaza and event space would mark the entry to the park at the intersection of Chilco Street and the Dumbarton Railroad Corridor. The plaza would be a focal point for the open space, consisting of a flexible space with a mix of paving, seating, and shaded landscaped areas. The northern section of the

open space would include the southern portion of the multi-use bicycle/pedestrian bridge, as explained above, spanning over SR 84 and allowing access to the Bay Trail and Bayfront Park from the Project site and the Belle Haven neighborhood. Stormwater treatment features would also be incorporated as part of the landscaping and design.

Trip Cap and Transportation Demand Management Program

As part of the Project, the Project Sponsor is proposing to implement a trip cap and monitoring program for both the Project site (including Building 23) and Building 20 combined.[17] Buildings 10–19 and Building 20 are currently subject to a trip cap with a monitoring and enforcement policy that limits the number of morning and evening peak-period and daily trips to and from each of these respective sites. The City of Menlo Park continuously monitors compliance with the existing trip caps to ensure conformance, as outlined in the respective approvals for Buildings 10–19 and Building 20. In developing the proposed trip cap for the Project, the Project Sponsor utilized the same trip generation rates and assumptions that were used in the previous entitlement processes for Buildings 10–20. The trip generation rates for Facebook workers account not only for trips generated by the workers but also trips generated by typical numbers of contractors, interns, visitors, and other non-Facebook workers. Trips associated with Buildings 21 and 22 would be capped at 14,545 total daily weekday trips, with 1,765 trips in the AM and PM Peak Periods. Trips associated with the hotel would be capped at 1,784 total weekday trips, with 134 trips in the AM Peak Period and 140 trips in the PM Peak Period.[18]

To meet the trip cap, an enhanced TDM program would be implemented as part of the Project. The TDM program would be designed to provide alternatives to single-occupancy automobile travel to and from the Project site as well as between the Project site and the existing Facebook Campus. Facebook currently implements a TDM program, which has evolved over time, at its existing facilities. The Project would be required to implement a TDM program, which would be similar to the program for the rest of the Campus.[19]

Key ongoing elements that are likely to be included in the TDM program are listed below.

- Subsidized Caltrain Go-Passes and Caltrain station shuttles.
- Employee commuter shuttle bus services/intern shuttles.
- Campus bike share program for employee use on Campus.
- Bicycle amenities, such as bike shops, lockers, a towel service, bicycle pumps, self-repair stations, and loaner bikes.
- Vanpool program for groups of employees to share rides to and from work.
- Educational and promotional events to encourage employees to use alternative modes of travel.
- Rideshare program that allows users to find other drivers or passengers who are traveling along the same route.

[17] During entitlement of Building 20, trip caps were established for the AM and PM Peak Periods and daily trips. These trip caps are continually monitored by the City of Menlo Park, as required by the EIR's Mitigation Monitoring and Reporting Plan (MMRP). Currently, there is no formal or ongoing trip cap associated with the renovation of Building 23, apart from a one-time monitoring obligation 1 year after the renovation is complete.

[18] Fehr & Peers. 2015. *TE Campus Expansion Project Trip Generation/Trip Cap*. Memorandum. September 16.

[19] Fehr & Peers. 2015. *Facebook Menlo Park TDM Program*. Memorandum. August 7.

- Emergency ride home for employees in case of emergency.
- Car-share service on Campus.
- Electric vehicle parking.

Utilities

Onsite utility usage involves energy, domestic water, wastewater, and storm drainage facilities. All onsite utilities would be designed in accordance with applicable codes, including the Green Buildings Standards Code[20] and the California Building Energy Efficiency Standards,[21] and current engineering practices.

Energy. It is anticipated that Pacific Gas & Electric (PG&E) would provide gas and electrical power for the proposed facilities, although the Project Sponsor also has the right to purchase power from other providers. Existing electricity and gas lines in the vicinity of the site would continue to serve the Project.

Water. Onsite water lines connect to the Menlo Park Municipal Water District (MPMWD). For domestic water, the Project site would connect to an existing 12-inch domestic water main that connects to the City of Menlo Park's distribution system near Chilco Street in the southwestern portion of the Project site. For water used for firefighting, the Project site would connect to an existing 12-inch fire water main that connects to the City of Menlo Park's distribution system near Chilco Street, also in the southwestern portion of the Project site.

Wastewater. The sanitary sewer system in this area of the city is owned and operated by the West Bay Sanitary District (WBSD). The sanitary sewage collection system at the site consists primarily of four lift stations and an associated sump, along with associated gravity and force mains. The wastewater collected at the Project site would drain to an existing 30-inch WBSD sanitary sewer line that runs through the western portion of the Project site. The wastewater would be pumped to the Menlo Park Pump Station. In addition, the Project Sponsor is proposing a potential onsite wastewater system as part of the Project that could process up to approximately 88,300 gallons per day (gpd) during normal business days, which equates to approximately 23 million gallons of water annually (not including weekends). The plumbing fixtures at the Project site, including, but not limited to, toilets/urinals, lavatories, kitchen sinks, and drinking fountains, would feed into the wastewater system from Buildings 21 and 22. Wastewater from the kitchen, including wastewater that could be high in fats, oils, and grease, would be routed through a grease trap prior to reaching the wastewater treatment system. The system would serve toilets/urinals and possibly irrigation for site landscaping.

Raw wastewater from each building would be captured by gravity conveyance pipes and routed through a grinder pump (Muffin Monster) to a lift station outside of the building footprint. Raw wastewater from kitchen facilities would be routed through a grease trap before entering the lift station to remove excess fats, oils, and grease. Wastewater from Buildings 21 and 22 would be screened, pretreated, and equalized in large primary tanks and then pumped to the drain and fill-constructed wetlands for treatment prior to polishing, disinfection, and reuse. Odor controls would be designed for the headworks building, which would contain the screen, with slight negative pressure venting from the primary tanks. Odors would not be associated with wastewater treatment at the drain and fill-constructed wetlands. If approved by the California State Water Board, the San Mateo County

[20] California Building Standards Commission. 2014. *California Green Building Standards Code*. January 1.
[21] California Energy Commission. 2012. *2013 Building Energy Efficiency Standards*. May.

Environmental Health Division, and the City Building Official and implemented by the Project Sponsor, the reused water would be treated to the highest standard of Title 22 for use as tertiary disinfected recycled water.

Storm Drain. Stormwater collected in the eastern portion of the Project site would drain to existing private storm drains on the adjacent Building 20 site. Stormwater collected in the center of the Project site would drain from a proposed 24-inch private storm drain to an existing 27-inch City-owned storm drain that runs along SR 84. The 27-inch City-owned storm drain flows to a 33-inch City-owned storm drain, which collects stormwater from an existing 25- by 16-inch City-owned storm drain in the western portion of the Project site. The City-owned storm drain would be relocated to Chilco Street as part of the improvements that are analyzed throughout this document as a cumulative project (see Chapter 3, *Environmental Impact Analysis*). As a result, the onsite storm drain would not be connected to the public storm drain in Chilco Street and would drain only onsite stormwater. Therefore, the storm drain would be considered private. The stormwater would be pumped to the Chrysler Drive Pump Station.

Sustainability Features

The Project Sponsor intends to design Building 21 to Leadership in Energy and Environmental Design (LEED) Gold 2009 standards. The Project would include strategies that would optimize energy performance and environmental and health benefits for the buildings and their inhabitants. The sustainability measures include, but are not limited to, the items listed below.

- TDM program
- Redevelopment of industrial land
- Bike parking and shower facilities
- Parking and charging access for electric vehicles
- Vegetated green space onsite
- Best management practices for stormwater management
- Water-efficient plumbing fixtures to reduce water consumption by 40 percent compared with the LEED baseline
- Water-efficient landscaping design to reduce irrigation water consumption by 50 percent compared with the LEED baseline
- Onsite amenities to reduce off-site vehicular transportation
- Heat island mitigation through covered parking, shade trees, and reflective envelope materials
- Optimized building envelope
- Building form and space layout that promotes daylight use
- Possible natural ventilation strategies
- Energy-efficient lighting and HVAC equipment
- Energy-efficient site lighting to minimize light pollution
- Energy modeling to improve building performance by at least 15 percent beyond the minimum requirements of California's Title 24-2013, Part 6, Energy Code Standards
- Building management systems to optimize energy performance on an ongoing basis

- Building systems that avoid the use of heating, refrigeration, and fire suppression systems that use chlorofluorocarbons or halon compounds
- Commissioning of building energy and water systems
- Advanced energy sub-metering
- Onsite renewable energy generation (e.g., photovoltaic panels)
- Enhanced indoor air quality strategies, including low-emitting materials, a construction air quality plan, and interior contaminant management
- Diversion of at least 60 percent of construction waste from landfills
- Reuse of existing paving; concrete buildings re-used as base material
- Prioritization of resource-conserving materials, including materials with recycled content, rapidly renewable materials, and materials that were sourced within a 500-mile radius
- Water-efficient equipment (i.e., boilerless steamers, ice-making machine, dishwashers)
- Behavioral management (e.g., educating employees about using actual dishes rather than disposable dishes, turning off electronics)
- Bioswales
- Water consumption monitoring

2.4 Project Construction

Construction Schedule and Phasing

Demolition and construction of the buildings would be phased to allow existing tenants to continue operating. The Project would consist of two phases. Each phase would consist of the following: demolition (Phase 1 would not include building demolition), grading and utility work, foundation, core and shell, and tenant improvements. Phase 1 is expected to be complete by mid-2018; it is anticipated by the Project Sponsor that Phase 2 would be built out by late 2019.

Phase 1

Construction of Building 21 and the publicly accessible open space would occur during Phase 1. It is anticipated that Phase 1 would start in fall 2016 with grading and utility work. Foundations would start in late 2016, construction of the core and shell would start in early 2017, and tenant improvements would start in mid-2017. Phase 1 would continue over approximately 18 months, with completion by early 2018. Construction of the multi-use bridge over Bayfront Expressway would be subject to Caltrans approval but is anticipated to be completed in 2018 as well.

Phase 2

Demolition of Buildings 301–306 and the CTF, as well as construction of Building 22 and the hotel, would occur during Phase 2. It is anticipated that construction of Building 22 would start in early 2018 with demolition of Buildings 301–306 and the CTF. Specifically, demolition would start in early 2018, grading and utility work would start in mid-2018, foundations would start in mid-2018, construction of the core and shell would start in late 2018, and tenant improvements would start in mid-2019. Construction of Building 22 would continue over approximately 23 months, with full buildout by late 2019.

It is anticipated that construction of the hotel, which would occur during Phase 2, would start in early 2019 with demolition of the surface parking. Grading and utility work would start in early 2019, foundations would start in mid-2019, construction of the core and shell would start in late 2019, and tenant improvements would start in late 2019. Construction of the hotel would continue over approximately 18 months, with full buildout by mid-2020.

The timing for construction of the multi-use bicycle/pedestrian bridge over SR 84 would be determined by the Development Agreement and subject to approval by Caltrans and potentially other agencies.

Construction Equipment and Staging

Typical equipment that would be used during construction would include, but not be limited to, excavators, semi trucks, generators, tire washers, concrete crushers, work trucks, bobcats, blades, semi dump trucks, scrapers, backhoes, gradalls, pile rigs, dump trucks, and cranes. All off-road diesel engines used during construction would meet Tier 4 emission standards. The number of truck deliveries would range from two to eight trips per day during each phase of development, with most trips occurring during the foundation stage.

All import material would be staged onsite, as would all construction equipment and construction workers' vehicles. For construction of Building 21, staging would occur in the southern portion of the Project site, between what is currently Buildings 307–309 and the Dumbarton Rail Corridor. For construction of Building 22, staging would occur in the western portion of the Project site, between Building 23 and Building 305. For construction of the hotel, staging would occur near the northernmost portion of the Project site. In addition, between 20 and 25 temporary trailers would be used onsite during construction. These would be located immediately east of Building 305.

Construction Employment

The number of construction workers per day would range between 75 and 250 workers. The minimum number of construction workers would be at the Project site during construction of the hotel, should that occur after Buildings 21 and 22 are constructed. The maximum number of construction workers would be at the Project site during construction of Buildings 21 and 22, to the extent any construction activities occur concurrently. The construction staff would most likely be obtained from Bay Area sources. Parking for construction workers' vehicles would be provided onsite.

Construction Hours

Standard construction work hours would be 7:00 a.m. to 7:00 p.m. Monday through Friday. However, because of the size of the Project, construction of the Project would result in extended work hours. Therefore, Saturday construction work hours would be from 8:00 a.m. to 5:00 p.m. No noise-generating exterior building work or site work would occur on Sundays or holidays. In addition, construction activities could occur between the hours of 7:00 p.m. and 10:00 p.m. Monday through Friday. The additional work hours would require, in some cases, construction site lighting for safety reasons.

Construction Spoils, Debris, and Materials

For both phases of development, crushed concrete would be used onsite as road base or engineered fill. If hauled offsite, it would be used at a nearby construction project. Other recycled materials would be taken to local recyclers (Ox Mountain Landfill in Half Moon Bay would be used). Ox Mountain Landfill,

which is anticipated to close in 2034, is permitted to accept 3,598 tons per day and has a remaining capacity of approximately 27 million cubic yards (cy).[22,23] Construction of the Project would result in a total of approximately 25,550 cy of recycled material and 1,020 cy of material that would be disposed of at a landfill.

Phase 1

Demolition. As explained above, it is anticipated that Buildings 307–309 would be granted a permit and demolished as a separate and independent project prior to certification of this EIR and approval of the Project. Therefore, these buildings, which would be demolished prior to Phase 1, are analyzed throughout this document as a cumulative (i.e., reasonably foreseeable) project (see Chapter 3, *Environmental Impact Analysis*). As part of the Project, Phase 1 would require demolition and removal of a paved parking lot, other impervious surfaces, and vegetation. The demolition work would generate approximately 1,220 tons of concrete debris.

Grading, Utilities, and Foundation. Grading may require the import of 5,000 cy of material to the site and the export of 15,000 cy from the site. General excavation during Phase 1 would occur at a depth of 5 to 10 feet.

Phase 2

Demolition. Phase 2 would require the demolition and removal of Buildings 301–306, a paved parking lot, other impervious surfaces, and vegetation. The demolition work would generate approximately 11,325 tons of concrete debris and 3,510 tons demolition debris. In addition, construction of the hotel would require demolition and removal of a paved parking lot.

Grading, Utilities, and Foundation. Grading for Building 22 may require the import of 7,000 cy of material to the site and the export of 15,000 cy from the site. General excavation during Phase 2 would occur at a depth of 5 to 10 feet. Grading for the hotel may require the import of 5,000 cy of material to the site and the export of 3,000 cy from the site.

2.5 Project Approvals

City Approvals

The following discretionary approvals by the City of Menlo Park would be required prior to development at the Project site:

- **Rezoning from M-2 and M-2-X Zoning District to M-2-X Zoning District.** The Project Sponsor proposes to rezone the entire site to exceed the maximum 35-foot height limit and identify Project-specific development standards.

[22] Devincenzi, Monica. Municipal Relationship Manager, Republic Services. March 30, 2016—email communication.

[23] California Department of Resources Recycling and Recovery. 2016. *Facility/Site Summary Details: Corinda Los Trancos Landfill (Ox Mtn)* (41-AA-0002). Available: <http://www.calrecycle.ca.gov/SWFacilities/Directory/41-AA-0002/Detail/>. Accessed: March 28, 2016.

- **Conditional Development Permit (CDP).** A CDP would be required for the Project. The CDP would be incorporated as part of the Project to define the development standards and create mechanisms for the City of Menlo Park to process any revisions to the Project that might arise over the buildout period.
- **Zoning Ordinance Text Amendment.** The Project site is currently within M-2 (General Industrial) and M-2-X (General Industrial, Conditional Development) zoning districts. The M-2 (General Industrial) zone, which applies to the portion of the Project site where the hotel is proposed, allows general industrial uses and offices. The Project Sponsor proposes to amend the zoning ordinance text to accommodate the proposed hotel.
- **Development Agreement.** The Project Sponsor proposes to enter into a development agreement with the City of Menlo Park to create vested rights in Project approvals and specify benefits to the City of Menlo Park.
- **Heritage Tree Removal Permit.** A tree removal permit would be required for each heritage tree proposed for removal, per City of Menlo Park Municipal Code Section 13.24.040.
- **Below-Market-Rate Housing Agreement.** A Below-Market-Rate Housing Agreement would be required, including the payment of in-lieu fees or delivering offsite below-market-rate units, as associated with the City of Menlo Park's Below-Market-Rate Housing Program.
- **Lot Reconfiguration.** A lot line adjustment or lot merger would be required to modify the location of the lot line between the Project site and the adjacent Building 20 and ensure that the proposed structures would not cross parcel boundaries.
- **Environmental Review.** Certification of the EIR and approval of a Mitigation Monitoring and Reporting Program (MMRP) and a Statement of Overriding Considerations would be required, to the extent the EIR discloses any potentially significant impacts that cannot be mitigated to less-than-significant levels.
- **Fiscal Impact Analysis.** A fiscal impact analysis would be required to evaluate the revenue and cost items considered; this would include police, fire, public works, recreation, and library programs and services provided to the public and general government services for both the city and special districts (e.g., fire and school districts).

Because of the proposed site-wide trip cap as well as the proposed connections between Buildings 20, 21, and 22, it is also anticipated that the existing CDP and the Development Agreement for Building 20 would need to be amended and restated.

Approvals by Responsible Agencies

Approvals and consultation by other agencies that may be needed for the Project to proceed are also identified. Some of these agencies will need to approve certain parts of the Project prior to full implementation, but their approval is not required for EIR certification.

- Bay Area Air Quality Management District (BAAQMD) – Permitting of asbestos abatement activities, if any, and permits for additional onsite generators. Permits may also be required for boilers and other utility equipment.

- Caltrans – Review of traffic circulation effects and consultation on potential traffic improvements that may affect state highway facilities, ramps, and intersections. Review of encroachment permits for improvements within SR 84, as necessary, and for the multi-use bicycle/pedestrian bridge. In addition, issuance of the permit to construct the bridge.
- California Regional Water Quality Control Board (RWQCB)/San Mateo Countywide Water Pollution Prevention Program – Approval of National Pollutant Discharge Elimination System (NPDES) permit for stormwater discharge.
- City/County Association of Governments (C/CAG) – Review of potential effects on Routes of Regional Significance and the proposed TDM program.
- San Mateo County Transportation Authority – Review of potential effects on public transit.
- Menlo Park Fire Protection District – Approval of proposed fire prevention systems, additional onsite generators, and emergency vehicle access.
- San Mateo County Environmental Health Division – Review of food service functions and additional onsite generators.
- West Bay Sanitary District – Approval of wastewater hookups.
- U.S. Fish and Wildlife Service – Approval of encroachment permits for the multi-use bicycle/pedestrian bridge, if necessary.
- PG&E – Issuance of permit to use PG&E property; transmission tower easement for the multi-use bicycle/pedestrian bridge.

Chapter 3
Environmental Impact Analysis

Chapter 3 of the Draft Environmental Impact Report (Draft EIR) presents an analysis of the potential impacts that the Facebook Campus Expansion Project (Project) could have on existing environmental conditions. The environmental analysis has been prepared in accordance with the California Environmental Quality Act (CEQA), as amended (Public Resources Code Section 21000, et seq.), and the State CEQA Guidelines.

Organization of This Chapter

Each CEQA topic or environmental issue in this chapter is given its own section, each containing the subsections listed below.

- **Regulatory Setting**—describes the federal, state, and local regulations regarding the impact topic that would be applicable to the construction and operation of the Project.
- **Environmental Setting**—describes existing baseline conditions, including the environmental context and background. The environmental baseline for purposes of the analysis is discussed in detail below. As discussed in Chapter 2, *Project Description*, the Project site includes the TE Connectivity (TE) Campus at 300–309 Constitution Drive in the city of Menlo Park.
- **Environmental Impacts**—identifies standards of significance and evaluates how the Project would affect the baseline conditions. If the change to the baseline conditions would exceed the significance thresholds, this would constitute a significant impact, and mitigation measures to reduce, eliminate, or avoid the significant impacts would be suggested. This section also analyzes cumulative impacts, as described in detail below.

CEQA Methodology

State CEQA Guidelines Section 15151 provides guidance for the preparation of an adequate EIR.

- An EIR should be prepared with a sufficient degree of analysis to provide decision-makers with information that enables them to make a decision that intelligently takes account of the environmental consequences.
- An evaluation of the environmental impacts of a project need not be exhaustive, but the sufficiency of an EIR is to be reviewed in light of what is reasonably feasible.
- Disagreement among experts does not make an EIR inadequate, but the EIR should summarize the main points of disagreement among the experts.
- The courts have looked not for perfection but for adequacy, completeness, and a good-faith effort at full disclosure.

In practice, this guidance suggests that EIR preparers should adopt a reasonable methodology upon which to estimate impacts and make reasonable assumptions using the best information reasonably available.

Classification of Impacts

In accordance with Section 15022(a) of the State CEQA Guidelines, the City of Menlo Park (City) uses the impact significance criteria designated by CEQA and the State CEQA Guidelines (Appendix G). These criteria, as well as City-adopted significance criteria for traffic impacts, are used to evaluate Project impacts throughout this document. These criteria are listed at the beginning of the *Environmental Impacts* subsection under "Thresholds of Significance" throughout this chapter.

For each impact identified, a level of significance is determined using the classifications listed below.

- *Potentially significant (PS)* impacts occur in cases in which it is not precisely clear whether a significant effect would occur. The analysis in these instances conservatively assesses the credible worst-case conditions, but the discussion acknowledges that there is some uncertainty regarding the credible extent of the impact.
- *Less-than-significant (LTS)* impacts are effects that are noticeable but do not exceed established or defined thresholds or are mitigated below such thresholds.
- *No impact (NI)* denotes situations in which there is no adverse effect on the environment.

For each impact identified as being potentially significant (PS), the Draft EIR provides mitigation measures to reduce, eliminate, or avoid the adverse effect. If the mitigation measures would reduce the impact to a less-than-significant level successfully, this is stated in the Draft EIR. However, if the mitigation measures would not diminish the effects to less-than-significant levels, then the Draft EIR classifies the impacts as "significant and unavoidable (SU)."

In Chapter 3, impacts are defined using an alphanumeric system that identifies the environmental topic of the impact. For example, NOI-1 denotes the presentation of the first impact in the Noise section. The abbreviated codes used to identify the environmental issues discussed in this chapter are listed below.

- AES—Aesthetics
- AQ—Air Quality
- BIO—Biological Resources
- CUL—Cultural Resources
- GEO—Geology and Soils
- GHG—Greenhouse Gas Emissions
- HAZ—Hazardous Materials
- LU—Land Use
- NOI—Noise
- POP—Population and Housing
- PS—Public Services
- TRA—Transportation
- UT—Utilities and Service Systems
- WQ—Hydrology and Water Quality

Mitigation Measures

Mitigation measures identified in this Draft EIR were developed during the analysis and are designed to reduce, minimize, or avoid potential environmental impacts associated with the Project. According to State CEQA Guidelines Section 15126.4:

> The discussion of mitigation measures shall distinguish between measures that are proposed by the project proponents to be included in the project and other measures proposed by the lead, responsible, or trustee agency or other persons who are not included but the agency determines could reasonably be expected to reduce adverse impacts if required as conditions of approving the project. This discussion shall identify mitigation measures for each significant environmental effect identified in the EIR.

In this Draft EIR, mitigation measures are provided immediately following each potentially significant impact. The mitigation measures are numbered to correspond to the impacts they address. For example, Mitigation Measure CUL-2.1 refers to the first mitigation measure for Impact CUL-2 in the Cultural Resources section.

If the Project is approved by City Council, then a Mitigation Monitoring and Reporting Program (MMRP) must be adopted. Pursuant to State CEQA Guidelines Section 15097, an MMRP is a mechanism used for the monitoring and reporting of revisions to the Project or conditions of approval that the public agency has required as mitigation measures to lessen or avoid a significant environmental effect. The City can conduct the reporting or monitoring, or it can delegate the responsibilities to another public agency or private entity that accepts the delegation. The MMRP for the Project will identify the specific monitoring actions that shall be done, the various City departments or other entities that shall oversee the completion of the mitigation, and a timeline for implementation of the measures. The responsible departments shall ensure that due diligence is carried out during implementation of the measures. Execution of the MMRP would reduce the severity of or eliminate the significant impacts identified in this EIR.

Environmental Baseline

In determining whether impacts are significant, an EIR compares the potential impacts of a project with pre-project environmental conditions. Sections 15125(a) and 15126.2(a) of the State CEQA Guidelines specify that the baseline generally consists of the physical conditions that exist at the time the Notice of Publication (NOP) is published or the time the environmental analysis begins. However, under certain circumstances, it is appropriate to deviate from this definition if doing so is supported by substantial evidence. A court decision, *Save Our Peninsula Committee v. Monterey County Board of Supervisors* (2001), 87 Cal. App. 4th 99, held that the physical conditions existing exactly at the time of the NOP or start of environmental analysis may not be representative of the generally existing conditions. From year to year, environmental conditions may vary, and in some cases, it is necessary to consider conditions over a range of time periods. The approach to the analysis that uses an adjusted baseline is consistent with the State CEQA Guidelines.

With the Project, there are three circumstances that support a baseline that has been adjusted from the physical conditions that existed on the ground at the time the NOP was released (June 18, 2015):

- The permit issued by the City in December 2014 for the conversion of Building 23 (formerly Building 300) from warehouse to office uses, which allocated the trips and associated population in 2011 from the entire TE Campus to Building 23.
- Historical usage for water, electricity, and natural gas does not reflect the anticipated usage of Building 23 once it is completed; therefore, the future estimates of water, electricity, and natural gas usage for Building 23 should be removed from the baseline to be consistent with previous approvals.
- The anticipated demolition of Buildings 307–309, which will take place regardless of the City's decision on the Project.

Therefore, as discussed below, a modified baseline, and the point from which all impacts are measured for the Project site, is utilized in certain chapters, as appropriate.

Building 23 Vehicular Trips and Population

The use permit and architectural control approval that allowed the Project Sponsor to convert Building 23 from a warehouse and distribution center to office uses with ancillary employee amenities included a condition of approval, requiring that vehicular trips generated by Building 23 not exceed the historical vehicular trips from the TE Campus (Buildings 300–309) for the AM Peak Period, PM Peak Period, and maximum daily trips. A trip generation analysis quantified existing trips from the entire site, based on 2011 conditions, the time when TE Connectivity was most recently operating at its typical capacity, along with Pentair and other users of the site. According to the trip generation analysis, the entire site generated 525 trips in the AM Peak Hour, 840 trips in the PM Peak Hour, and 3,745 total daily weekday trips.[1] As part of the trip generation analysis for the use permit and architectural control approval for Building 23, the Project Sponsor committed to future compliance with 2011 AM Peak-Hour, PM Peak-Hour, and maximum daily trips. The conditions of approval require the Project Sponsor to retain a qualified transportation consultant to monitor trips at the site 1 year from commencement of operations and submit a report to the City to document compliance. If compliance is not met, the Project Sponsor shall submit a detailed mitigation and monitoring plan, identifying the steps to be taken to bring the Project site into compliance.

As discussed in Chapter 2, *Project Description*, the Project Sponsor is proposing a voluntary trip cap to reduce congestion resulting from vehicular trips. The trip cap would limit the total number of daily and peak-period trips to and from the Project site and Building 20. The Project Sponsor's trip cap proposes fewer trips for Building 23 than the number allocated by the use permit granted by the City. Rather than the 525 AM Peak-Period trips and 840 PM Peak-Period trips, the Project Sponsor proposes that only 425 vehicular trips be allocated to Building 23 during each of the peak periods, AM and PM. Therefore, as shown in Table 3.0-1, the 100 AM Peak-Period trips and 415 PM Peak-Period trips, although assigned to Building 23 by the previous entitlement, could be allocated to the remainder of the Project site and should be included in the baseline for purposes of the transportation analysis in this Draft EIR. Total daily trips to Building 23 would remain at 3,745 with the proposed trip cap. Therefore, there is no adjustment to the baseline for purposes of daily trips; it is assumed the baseline is zero.

Table 3.0-1. Adjusted Baseline for AM Peak Hour, PM Peak Hour, and Daily Trips

	AM Peak Hour	PM Peak Hour	Daily Trips
2011 Conditions	525	840	3,745
Building 23 Trips	425	425	3,745
Adjusted Baseline (Project site)	100	415	0

Source: Fehr & Peers, 2015.

Project site population in 2011 (the most recent data available) included 796 TE Connectivity employees, 131 Pentair Thermal Controls employees, and 171 employees at the Building 23 warehouse. Therefore, the employee count for the Project site is estimated at 1,098. Facebook's occupancy of Building 23 assumes 1,540 employees. Because of Facebook's unique trip generation rate, Building 23 can accommodate an increase in population without exceeding the historic 2011 trips for the site or the proposed trip cap. Because all employees at the Project site would be accounted for with the Building 23 land use entitlements, the CEQA baseline for the Facebook Campus Expansion Project assumes a population of zero for the remainder of the Project site (not including Building 23).

[1] Fehr & Peers. 2015. *TE Campus Expansion Project Trip Generation/Trip Cap*. Memorandum. September 16.

Existing Water, Electricity, and Natural Gas Usage

The Project site was historically used for industrial activities (e.g., manufacturing, distribution, and warehousing, with ancillary office uses). Therefore, existing water, electricity, and natural gas usage at the site is more closely related to the existing manufacturing and industrial land uses, which are water and energy intensive, rather than the site population. Primary water and natural gas usage is typically based on landscaping, bathroom, and kitchen use. Primary electricity usage is based on lighting, ventilation, and appliance use. All buildings at the TE Campus are associated with a single water meter and a single natural gas meter. Allocating all existing site water, electricity, and natural gas usage to Building 23 would significantly overstate the projected water, electricity, and natural gas usage at that location because of the history of water- and energy-intensive uses at the TE Campus. Instead, as shown in Table 3.0-2, projected water, electricity, and natural gas demand for Building 23, based on employee density and usage typical of office uses, has been subtracted from the total existing water, electricity, and natural gas usage for the TE Campus. The delta between the historic metered water, electricity, and natural gas usage and the projected water, electricity, and natural gas usage for Building 23 provides a baseline that accounts for the estimated usage of the approved buildout of Building 23. This is appropriate because Building 23 had received its entitlements before the NOP and will begin operations in the near future. The remaining water, electricity, and natural gas demand at the TE Campus will serve as the adjusted baseline for the Project, as discussed in Section 3.14, *Utilities and Service Systems*.

Table 3.0-2. Adjusted Baseline for Water, Electricity, and Natural Gas Annual Demand

	Annual Water Demand[a]	Annual Electricity Demand[b]	Annual Natural Gas Demand[b]
TE Campus	77 mg	35,452,710 kWh	830,750 therms
Projected Building 23 Usage	19 mg	2,922,032 kWh	30,201 therms
Adjusted Baseline	58 mg	32,530,678 kWh	800,549 therms

Source:

a. Erler & Kalinowski, Inc. 2016. *Water Supply Assessment Study, Facebook Campus Expansion, Menlo Park, California.* January 12, 2016.

b. PAE Engineers. 2015. *Facebook TE Campus: Energy & Water Analysis.* September 24, 2015.

Note:

mg = million gallons (in this case, million gallons per year)

kWh = kilowatt hours (in this case, kilowatt hours per year)

Demolition of Buildings 307–309

The Project site currently includes 10 buildings. Of these buildings, nine would need to be demolished in order for the proposed buildings to be constructed (Building 23 would remain). Two of the existing buildings, Buildings 307–309,[2] were located on the Project site at the time of the NOP and, thus, are considered as part of the modified baseline but will be demolished separate from the Facebook Campus Expansion Project. The demolition of these buildings is anticipated to begin prior to approval of the Project considered in this Draft EIR.

[2] Buildings 308 and 309 are considered one building, even though they have two distinct addresses.

Demolition is a ministerial action, and no independent environmental analysis is required for the demolition of Buildings 307–309. However, impacts related to demolition of these buildings are considered in the cumulative analysis because this is a reasonably foreseeable project that was known at the time the NOP was released. Conducting this analysis allows the Draft EIR to disclose the combined impacts of the Project and demolition activities for these buildings, which provides a comprehensive disclosure of environmental impacts for the public and decision-makers. Therefore, for the analysis of Project construction, the Draft EIR will analyze only the demolition of Buildings 301–306 and the CTF Building and construction of proposed Buildings 21, 22, and the hotel.

Approach to Cumulative Impacts

In addition to the evaluation of project-specific impacts, CEQA also requires an evaluation of cumulative impacts. In accordance with CEQA, the discussion of cumulative impacts must reflect the severity of the impacts and the likelihood of their occurrence; however, the discussion need not be as detailed as the discussion of environmental impacts attributable to a project alone.

According to Section 15355 of the State CEQA Guidelines:

> "Cumulative impacts" refer to two or more individual effects that, when considered together, are considerable or compound or increase other environmental impacts.
>
> (a) The individual effects may be changes resulting from a single project or a number of separate projects.
>
> (b) The cumulative impact from several projects is the change in the environment that results from the incremental impact of the project when added to other closely related past, present, and reasonably foreseeable probable future projects. Cumulative impacts can result from individually minor but collectively significant projects taking place over a period of time.

Throughout this Draft EIR, cumulative impacts are denoted by a "C" (e.g., Impact C-NOI-1). An analysis of cumulative impacts follows the Project-specific impact evaluation and recommendation of mitigation measures in each section. An introductory statement that defines the cumulative context that is being analyzed for respective sections (e.g., the city, the San Francisco Bay Area Air Basin) is included at the beginning of each cumulative impacts section. In some instances, a Project-related impact may be considered less than significant but would be considered potentially significant in combination with development in the surrounding area. Similarly, a Project-specific potentially significant impact may not result in a cumulatively considerable impact.

The closely related past, present, and reasonably foreseeable probable future projects considered in this Draft EIR are listed in Table 3.0-3 and depicted in Figure 3.0-1 at the end of this section.

Impacts Requiring No Further Analysis

Section 15128 of the State CEQA Guidelines states that "An EIR shall contain a statement briefly indicating the reasons that various possible significant effects of a project were determined not to be significant and were therefore not discussed in detail in the EIR." Implementation of the Project would not result in significant environmental impacts on agricultural and forestry resources or mineral resources. Therefore, these issues are not discussed further in Chapter 3 of this Draft EIR but are briefly summarized below.

Agricultural and Forestry Resources

There are approximately 5,121 acres of farmland in San Mateo County.[3] However, the Project site is not on or adjacent to any farmland and is considered "Urban and Built-Up Land."[4] Therefore, the Project would not convert or have the potential to convert existing farmland to a nonagricultural use. In addition, the Project site is not currently protected under the Williamson Act or zoned for agricultural uses.[5] All properties to be directly or indirectly affected by the Project are currently zoned for industrial, office, and residential uses. Therefore, the Project would have ***no impact*** on agricultural resources.

As discussed in Section 3.8, *Biological Resources*, there are currently 770 trees at the Project site, including 274 trees that qualify as heritage trees under the City's Heritage Tree Ordinance.[6,7,8] However, these are not considered to be forestry resources per the definitions of Public Resources Code Section 12220(g), timberland as defined by Public Resources Code Section 4526, or timberland zoned Timberland Production per Government Code Section 51104(g). A review of maps and aerial photographs of the Project site, as well as site visits, the Project site is not on or in the immediate vicinity of forestlands. The surrounding area is characterized by light industrial and office uses; therefore, implementation of the Project would have ***no impact*** on forest resources.

Mineral Resources

The Surface Mining and Reclamation Act of 1975 is the state legislation that protects Mineral Resource Zones (MRZs). Part of the purpose of the act is to classify mineral resources in the state and transmit the information to local governments that regulate land use in each region of the state. Local governments are responsible for designating lands that contain regionally significant mineral resources in local general plans to ensure resource conservation in areas with intensive competing land uses. The law has resulted in the preparation of Mineral Land Classification Maps, which delineate MRZs 1 through 4 for aggregate resources (sand, gravel, and stone).

The Project site is not delineated as a locally important mineral resource by the California Geological Survey (CGS) or on any San Mateo County or City of Menlo Park land use plan. The *San Mateo County General Plan* Mineral Resources Map does not specify that the Project site contains any significant mineral resources. However, according to this map, the Project site is approximately 0.03 mile south of an area that is delineated as "salt evaporating ponds."[9] Nonetheless, construction and operational activities associated with the Project would have ***no impact*** on mineral resources.

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[3] State Department of Conservation, Farmland Mapping and Monitoring Program. 2010–2012. *Land Use Conversion Table.* Available: <http://www.conservation.ca.gov/dlrp/fmmp/Pages/SanMateo.aspx>. Accessed: November 5, 2015.

[4] State Department of Conservation, Farmland Mapping and Monitoring Program. 2014. *San Mateo County Important Farmland, 2012*. August. Available: <ftp://ftp.consrv.ca.gov/pub/dlrp/FMMP/pdf/2012/smt12.pdf>. Accessed: September 2, 2015.

[5] State Department of Conservation, Division of Land Resource Protection. 2012. *San Mateo County Williamson Act, FY 2006/2007.* Available: <ftp://ftp.consrv.ca.gov/pub/dlrp/wa/sanmateo_06_07_WA.pdf>. Accessed: September 2, 2015.

[6] SCBA Tree Consulting. 2015. Arborist Survey. Buildings 301–306. August 12, 2015.

[7] SCBA Tree Consulting. 2015. Arborist Survey. Buildings 307–309. August 12, 2015.

[8] City of Menlo Park. 2010. *Menlo Park Municipal Code.* Section 16.46.030(7). December 14, 2010.

[9] San Mateo County Department of Environmental Management, Planning and Development Division. 1986. *San Mateo County General Plan*. Mineral Resources Map. Available: <https://planning.smcgov.org/sites/planning.smcgov.org/files/SMC-GP%201986.pdf>. Accessed: September 2, 2015.

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Table 3.0-3. Cumulative Projects[10]

ID	Address	Type of Use	Size (net)	Unit	Status
	Office/Retail/Commercial/Etc.				
1	333 Ravenswood Avenue (SRI International)	R&D Campus	3,000	employees	Proposed Construction
2	555 Glenwood Avenue	Hotel	138	rooms	Under Construction
3	1283 Willow Road (Police/City Service Center)	Office Retail	3,800 5,096	sf sf	Under Construction (Expired building permit)
4	100–155 Constitution Drive and 100–190 Independence Drive (Menlo Gateway)	Office Health Club Restaurant Hotel Hotel	694,664 41,000 6,947 250 197,050	sf sf sf rooms sf	Approved New Construction (hotel sf for reference only)
5	Facebook Building 23	Office	180,108	sf	Under Construction
6	Demolition of Facebook Buildings 307–309	Office	324,100	sf	Proposed Demolition
7	151 Commonwealth Drive and 162 and 164 Jefferson Drive (Commonwealth Corporate Center)	Office	259,920	sf	Approved New Construction
8	1020 Alma Street	Office Retail	25,004 172	sf sf	Proposed Construction
9	275 Elliot Drive (Laurel Upper School)	School	360	students	Under Construction
10	475 Pope Street (German American School)	School	400	students	Under Construction
11	150 Jefferson Drive (New Magnate High School)	School	400	students	Proposed Construction
12	1315 O'Brien Drive	R&D Warehouse Manufacturing	113,382 61,338 45,796	sf sf sf	Proposed Construction
13	1400 El Camino Real	Hotel Hotel	63 33,713	rooms sf	Proposed Construction (hotel sf for reference only)

[10] Facebook Building 20 is not included in this list as a cumulative project. However, it is included in the cumulative analysis for other topics (e.g., traffic) because of the timing of the traffic counts and the timing of building occupation for Facebook Building 20.

ID	Address	Type of Use	Size (net)	Unit	Status
14	Chilco Street Improvements[a]	Pedestrian and Bicyclist Improvements Storm Drain Installation Water Line Installation	0.4 1,400 600	mi lf	Under Construction Proposed Construction
15	Dumbarton Trail[b]	Recreational	4.5	mi	Proposed Construction
16	South Bay Salt Pond Restoration Project, Phase 2 (Ravenswood Ponds)[c]	Restoration	1,600	ac	Proposed Construction
17	SAFER Bay Project[d]	Flood Protection	9	miles	Proposed Construction
		Subtotal Non-Residential (sf)	1,992,090	*sf*	
		Subtotal Non-Residential (mi)	4.9	*mi*	
		Subtotal Non-Residential(ac)	*1,600*	*ac*	
		Subtotal Rooms	*451*	*rooms*	
		Subtotal Employees	*3,000*	*employees*	
		Subtotal Students	*1,160*	*students*	
		Subtotal Flood Protection	*9*	*mi*	
		Subtotal Water Infrastructure	*2,000*	*lf*	
Mixed-Use					
18	1460 El Camino Real	Residential Office	16 26,800	du sf	Completed Spring 2015
19	500 El Camino Real (Stanford)	Residential Office Retail	170 199,500 10,000	du sf du	Proposed Construction
20	840 Menlo Avenue	Residential Office	3 6,936	du sf	Proposed Construction
21	702 Oak Grove Avenue	Residential Office	4 3,469	du sf	Under Construction
22	1295 El Camino Real	Residential Office/Retail/Service	15 1,906	du sf	Proposed Construction

ID	Address	Type of Use	Size (net)	Unit	Status
23	1300 El Camino Real	Residential Office Retail	202 210,000 7,000	du sf sf	Proposed Construction
24	650–660 Live Oak Avenue	Office Residential	16,811 17	sf du	Proposed Construction
25	El Camino Real/Downtown Specific Plan[e]	Commercial (*Remaining Potential)* Residential (*Remaining Potential)*	67,114 248	sf du	—
26	Menlo Park General Plan (Land Use and Circulation Elements and M-2 Area Zoning Update [ConnectMenlo])[f]	Residential Office R&D Campus Commercial Hotel	4,500 700,000 1,400,000 200,000 400	du sf sf sf rooms	Proposed Construction
		Subtotal Mixed-Use (sf)	2,839,536	*sf*	
		Subtotal Mixed-Use (du)	5,175	*du*	
		Subtotal Mixed-Use (rooms)	*400*	*rooms*	
Residential					
27	133 Encinal Avenue	Residential	24	du	Proposed Construction
28	605 Willow Road	Residential	60	du	Under Construction
29	3639 Haven Avenue	Residential	394	du	Under Construction
30	777 Hamilton Avenue	Residential	195	du	Under Construction
31	3645 Haven Avenue	Residential	146	du	Under Construction

ID	Address	Type of Use	Size (net)	Unit	Status
32	1221 Willow Road	Residential	90	du	Proposed Construction
		Subtotal Residential Units	*909*	*du*	
		Total Residential	**6,084**	**du**	
		Total Non-Residential	**4,831,626**	**sf**	
		Total Miles	**4.9**	**mi**	
		Total Acres	**1,600**	**ac**	
		Total Rooms	**851**	**rooms**	
		Total Employees	**3,000**	**employees**	
		Total Students	**1,160**	**students**	
		Total Flood Protection	**9**	**mi**	
		Total Water Infrastructure	**2,000**	**lf**	

Source: City of Menlo Park, 2015.

Notes: sf = square feet, mi = mile, du = dwelling unit, ac = acre, lf = linear feet.

a. The Chilco Street improvements would include bicyclist and pedestrian improvements between the east end of Chilco Street and the north end of the street's bend toward Bayfront Expressway/State Route (SR) 84. Improvements would include Class I and Class II bicycle lanes, pedestrian paths, and striped buffers. Fencing would be installed along the edge of the right-of-way that fronts the Project site. Approximately 1,400 linear feet of a 30-inch storm drain line would be installed from the south side of Building 23 to the existing 33-inch line crossing just south of SR 84. Approximately 600 linear feet of a 12-inch water line would be installed from the existing City 12-inch pipe in Chilco Street west of Building 23 to Constitution Drive.

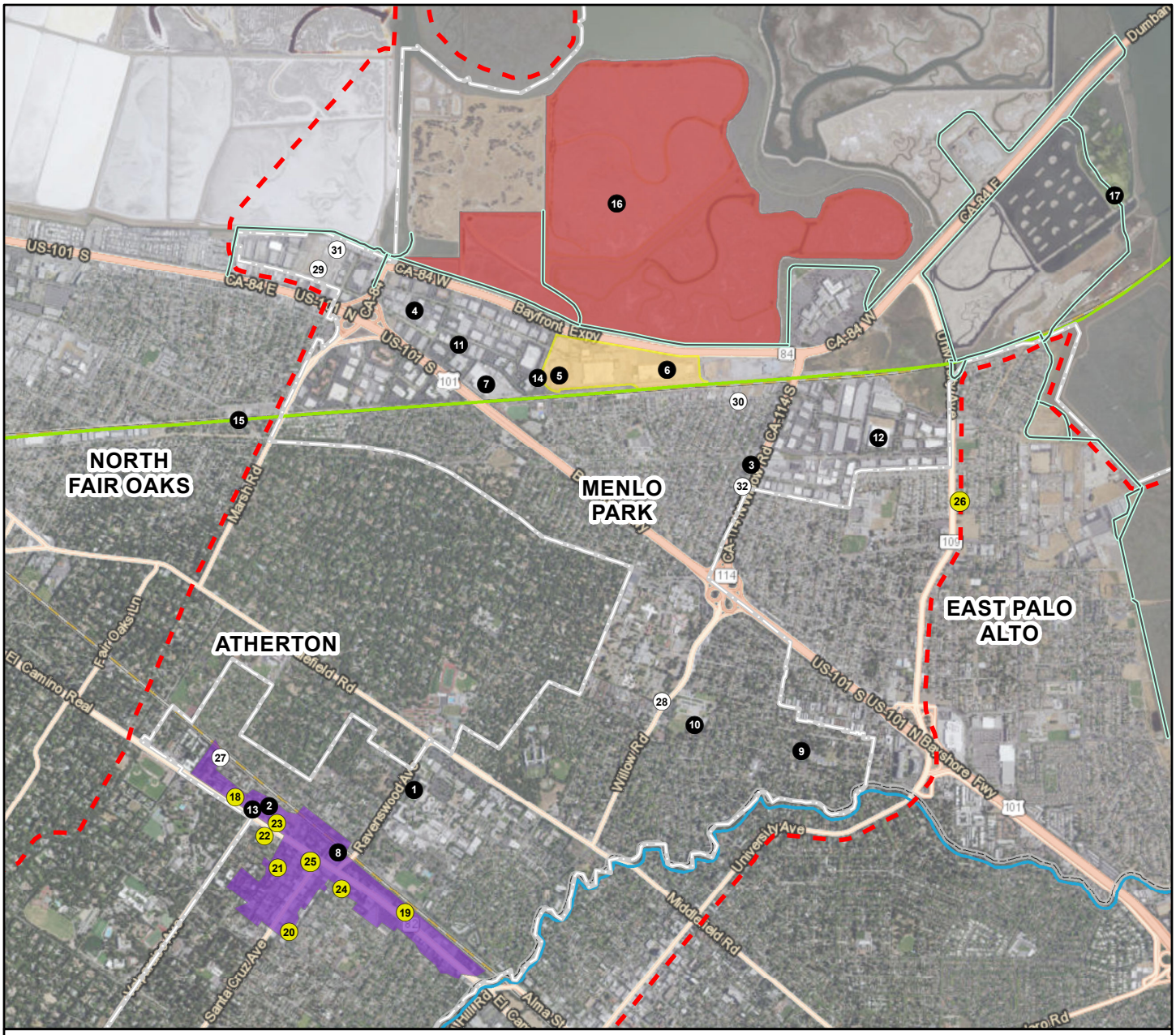
b. The proposed Dumbarton Trail, which is still in the planning stages, would be constructed for bicyclists and pedestrians. It would run adjacent to the current Dumbarton Rail Corridor, which is owned by the San Mateo County Transit District (SamTrans). The concept for this project was developed by the Project Sponsor and is being proposed as a discrete project, separate from the Project; it is currently undergoing environmental review. The Dumbarton Trail would be designed to be compatible with future rail service in the Dumbarton Rail Corridor and would connect users to the San Francisco Bay (Bay) and the transit center in Redwood City.

c. The Ravenswood Ponds include seven ponds located on the Bay side of the San Francisco Peninsula, both north and south of SR 84, west of the Dumbarton Bridge, and on the Bay side of the developed areas of the city in San Mateo County. The South Bay Salt Pond Restoration Project, Phase 2, would include tidal marsh habitat restoration, reconfiguration of managed pond habitat, maintenance or improvement of flood protection, and provision of recreational opportunities and public access.

d. The SAFER Bay Project includes improvements to existing or construction of new flood protection facilities to account for projected sea level rise in the city, East Palo Alto, and Palo Alto.

e. Continued buildout of the Specific Plan and remaining buildout potential in West Menlo Park, downtown, and along El Camino Real.

f. A program EIR is currently being prepared for ConnectMenlo.



Legend

- City Boundary
- County Boundary
- San Francisquito Creek
- Project Site

Cumulative Projects

 # Non-Residential

1. SRI International
2. 555 Glenwood Avenue
3. 1283 Willow Road
4. Menlo Gateway
5. Facebook Building 23
6. Demolition of Facebook Buildings 307-309
7. Commonwealth Corporate Center
8. 1020 Alma Street
9. Laurel Upper School
10. German American School
11. New Magnate High School
12. 1315 O'Brien Drive
13. 1400 El Camino Real
14. Chilco Street Improvements
15. Dumbarton Trail
16. South Bay Salt Pond Restoration Project Phase 2 (Ravenswood Ponds)
17. SAFER Bay Project

 # Mixed-Use

18. 1460 El Camino Real
19. 500 El Camino Real (Stanford)
20. 840 Menlo Avenue
21. 702 Oak Grove Avenue
22. 1295 El Camino Real
23. 1300 El Camino Real
24. 650-660 Live Oak Avenue
25. El Camino Real/ Downtown Specific Plan
26. ConnectMenlo

 # Residential

27. 133 Encinal Avenue
28. 605 Willow Road
29. 3639 Haven Avenue
30. 777 Hamilton Avenue
31. 3645 Haven Avenue
32. 1221 Willow Road

N

0 0.5 1

Miles

Source: Imagery, ESRI 2013; City of Menlo Park, ICF 2015.

Path: K:\Projects_1\City_of_Menlo_Park\00296_15_FacebookConstitution\mapdoc\Fig_3_0_1_Cumulative_Projects_20160209.mxd

Figure 3.0-1
Cumulative Projects
Facebook Campus Expansion Project Draft EIR

3.1 Land Use and Planning

This section describes the existing and proposed land uses within and around the Facebook Campus Expansion Project (Project) site and evaluates the potential for land use incompatibilities to occur as a result of development of the Project. New development adjacent to existing land uses, particularly if it is much more intensive or involves operations or activities that have effects that extend beyond the property, may create land use incompatibilities. This section also addresses the consistency of the Project with applicable land use goals and policies from the City of Menlo Park (City) General Plan (General Plan) (adopted in 1994 and amended through 2013),[1] the Municipal Code, and Title 16 Zoning Ordinance (current through Ordinance No. 1005, effective June 13, 2014). In addition, because the Land Use Element and the Circulation Element of the City General Plan are presently being updated, this section considers the Project's consistency with the relevant proposed goals and policies of the pending update, known as ConnectMenlo. The City General Plan and Municipal Code consistency analysis is provided for environmental review purposes only. The City Council will ultimately determine the Project's consistency with the goals and policies contained in the City General Plan and other City requirements and planning documents.

Under the California Environmental Quality Act (CEQA), land use and planning analyses generally consider the compatibility of a project with neighboring areas, changes to or displacement of existing uses, and the consistency of a project with the relevant local land use policies that have been adopted to mitigate or avoid an environmental effect. With respect to land use conflicts or compatibility issues, the magnitude of the impacts depends on how a project affects the existing development pattern, development intensity, and air quality, noise, and the visual setting in the immediate area. Specific environmental issues (e.g., visual, transportation, air quality, noise) and their potential significance are discussed in detail in the associated topical resource sections of this Draft Environmental Impact Report (EIR) (e.g., Section 3.3, *Transportation/Traffic*, and Section 3.6, *Noise*).

Issues identified in response to the Notice of Preparation (NOP) (Appendix 1) were considered in preparing this analysis. The City received one comment in response to the NOP related to land use. This comment indicated that Menlo Park has a high jobs/housing ratio and expressed concern over the Project's potential effect on the jobs/housing balance in adjacent jurisdictions, particularly East Palo Alto, by increasing employment in Menlo Park.

Existing Conditions

Regulatory Setting

City of Menlo Park General Plan

California planning law requires each city and county in the state to adopt a general plan for its future development. A general plan identifies the allowable land uses within its boundaries and establishes policies for both development and the protection of resources. It forms the foundation for a zoning ordinance, which establishes regulatory standards for development and resource protection. The City of

[1] City of Menlo Park. 2013. *City of Menlo Park General Plan.* Last revised and adopted on May 21, 2013. Available: <http://www.menlopark.org/departments/pln/gp/>. Accessed: February 4, 2016.

Menlo Park General Plan, adopted in 1994 and amended through 2013, is a long-term plan that guides the physical development and character of the city. The General Plan discusses the City's goals, policies, and implementation programs regarding future growth and development in the city. It also provides a framework for implementation of the City's zoning, subdivision, and building regulations, as codified in the Municipal Code. As such, the General Plan is used by the City Council and Planning Commission in considering planning and land use decisions. The central purpose of the General Plan, as stated in the document, "is to maintain Menlo Park's special character as a residential community that includes a broad range of residential, business, and employment opportunities and to provide for the change necessary to maintain a vital community."

General Plan—Land Use Designations. The Land Use Diagram in the General Plan depicts the land use pattern for future development in the city. The boundaries of the land use designations in the Land Use Diagram are depicted generally. The land use designations are meant to outline building intensity and population density for various land uses.

The City of Menlo Park General Plan designates the Project site as Limited Industry. The Limited Industry land use designation allows for light manufacturing and assembly, the distribution of manufactured products, research and development facilities, industrial supply facilities, incidental warehousing, offices, limited retail sales (e.g., to serve businesses in the area), public and quasi-public uses, and similar compatible uses. The maximum floor area ratio (FAR) allowed is 0.45 for office uses to 0.55 for general industrial uses. Under the Limited Industry designation, hotel and other commercial uses are not allowed. However, Policy I-E-2 of the General Plan allows hotel uses to be considered at suitable locations within the commercial and industrial zoning districts of the city.

General Plan—Goals and Policies. The City adopted amendments to the General Plan in April 2014 when it updated the Housing Element. Other recent revisions to the General Plan took place in 2013, including amendments to the Land Use and Circulation Elements as well as updated Open Space and Conservation, Noise, and Safety Elements. Applicable goals and policies from the General Plan are discussed under Impact LU-1, below. In addition, applicable policies are outlined in the relevant sections of this Draft EIR.

ConnectMenlo General Plan Update—Goals and Policies. Just as it did with the Housing, Open Space and Conservation, Noise, and Safety Elements, the City is presently updating the General Plan's Land Use and Circulation Elements, a process known as ConnectMenlo. The General Plan update is expected to undergo council review in the fall of 2016.

The General Plan update effort considers the city's existing conditions and suggests a mix of land uses and potential circulation improvements to help create a live/work/play environment in the M-2 area. The updated Land Use Element will guide the type and scale of potential development that may occur, particularly in the M-2 area, the area where the Project site is located and where most land use change in Menlo Park is expected to occur over the next two decades. The M-2 area is one of the zoning districts in the city that allows for primarily industrial land uses (see Figure 3.1-1). The M-2 area is generally bounded by Bayfront Expressway/State Route 84 (Bayfront Expressway) to the north, the Dumbarton railroad right-of-way to the south, Marsh Road to the west, and East Palo Alto to the east. The updated Circulation Element will address citywide transportation and circulation issues and include goals, policies, and programs to improve bicycle/pedestrian facilities, transit service, parking programs, and roadway congestion. Applicable goals and policies proposed for inclusion in these updated elements are discussed under Impact LU-1, below.

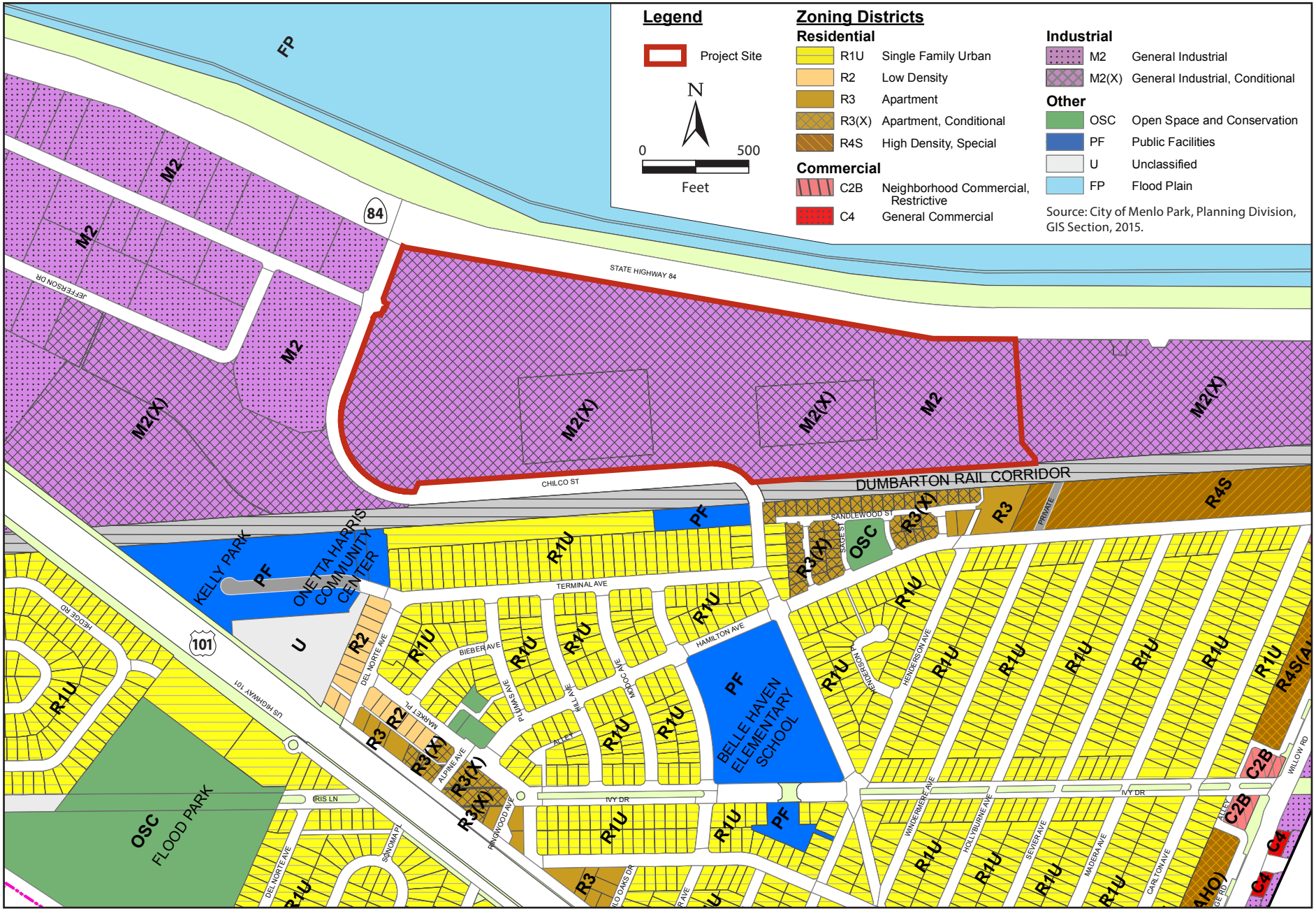


Figure 3.1-1
Existing Zoning
Facebook Campus Expansion Project Draft EIR

City of Menlo Park Municipal Code (Title 16, Zoning Ordinance)

The Zoning Ordinance implements the land uses designated in the General Plan. Title 16 of the Municipal Code was adopted as a precise zoning plan for the City. It is designed to

> …preserve and extend the charm and beauty inherent to the residential character of the city; to regulate and limit the density of population; encourage the most appropriate use of land; to conserve land and stabilize the value of property; to provide adequate open space for light, air and fire protection; to lessen traffic congestion; to facilitate the provision of community facilities; to encourage tree and shrub planting; to encourage building construction of pleasing design; to provide the economic and social advantages of a planned community.

The Zoning Ordinance defines the City's zoning districts and identifies the land uses permitted and conditionally permitted in each. The ordinance also establishes development regulations regarding building heights, setbacks, parking ratios, building land cover, and floor area.

The Project site is currently zoned M-2 (General Industrial) and M-2(X) Combining District (General Industrial, Conditional Development). The M-2 zoning district permits warehousing, manufacturing, printing, assembling, and office uses. Conditional uses allowed in the M-2 district include cafés, convenience stores, personal services (e.g., barber shops, beauty shops, launderettes, dry cleaners, shoe repair facilities), and daycare facilities, all of which are intended to serve employees in the immediate area. Development regulations for the M-2 district specify a maximum land cover of 50 percent for structures on the site, minimum building setbacks of 20 feet at the front, 10 feet at the sides, and 0 feet at the rear (20 feet when abutting residential districts), and a maximum FAR for office buildings of 0.45 and 0.55 for general industrial uses. In addition, the maximum building height should not exceed 35 feet. Buildings in the M-2 district are required to provide one parking space for every 300 square feet of gross floor area not in the front one-quarter of any required front yard. However, as described in Zoning Ordinance Chapter 16.56, all development standards, with the exception of density and intensity, may be modified with a conditional development permit (CDP). Within the M-2 district, the X Conditional Development Combining District allows construction of buildings to heights that exceed 35 feet, provided a conditional development permit is obtained. The current CDP requirements are specific to height for certain buildings rather than a broader set of requirements. In addition, the X Conditional Development Combining District requires a building site to be a minimum of 1 acre and off-street parking to be provided on or adjacent to the building site.

Plan Bay Area

Senate Bill (SB) 375, adopted in 2008, requires preparation of a Sustainable Communities Strategy (SCS) as part of the Regional Transportation Plan (RTP) for the Bay Area. Plan Bay Area, the SCS for the region, and the 2040 RTP were jointly approved in July 2013 by the Association of Bay Area Governments (ABAG) and the Metropolitan Transportation Commission (MTC).[2] The RTP/SCS represents a transportation and land use/housing strategy for addressing issues related to transportation mobility and accessibility needs, land development, and greenhouse gas (GHG) emissions reduction requirements in the Bay Area through 2040.[3] It integrates transportation and land use strategies to manage GHG

[2] The MTC is the government agency with responsibility for regional transportation planning and financing as well as coordinating transportation services in the nine-county San Francisco Bay Area.

[3] The RTP/SCS was also accepted by the California Air Resources Board in terms of meeting the SB 375 targets for per capita GHG emissions reductions from vehicles.

emissions and plan for future population growth. The RTP/SCS includes policies that call for shifting more travel demand to transit and accommodating growth along transit corridors in Priority Development Areas (PDAs).

Table 3.1-1 illustrates the anticipated jobs and housing for the city, as projected by ABAG and considered in Plan Bay Area as of 2013, the most recent projection available. As shown, the number of housing units is projected to increase by 380 between 2015 and 2020, while the number of jobs in the city is expected to grow by 2,210 (more than five times housing growth) during that same period. According to ABAG's projections, which do not include Facebook's expected growth, the jobs/housing ratio is anticipated to worsen in 2020.

Table 3.1-1. Comparison of Projected Number of Jobs to Housing in Menlo Park (Plan Bay Area)

	2015	2020
Jobs[a]	31,920	34,130
Housing[a]	14,490	14,870
Jobs/Housing Ratio	2.20	2.30

Source: Association of Bay Area Governments. 2013. *Projections 2013*. December.
Note:
[a.] Jobs and housing are based on the city's sphere of influence, which also includes unincorporated areas of San Mateo County.

Plan Bay Area calls for focused housing and job growth around high-quality transit corridors, particularly within areas that have been identified by local jurisdictions as PDAs, which are existing neighborhoods that are served by transit and supported by local plans (both existing and to be completed), to provide a wider range of housing options, along with amenities and services to meet the day-to-day needs of residents in a pedestrian-friendly environment. Many PDAs are also Transit Priority Project– (TPP-) eligible areas,[4] and most of the TPP-eligible land in the Bay Area is within PDAs. However, the Project site is not located within a TPP-eligible area.

ABAG Bay Trail Plan and Design Guidelines

The ABAG Bay Trail Plan proposes development of a regional hiking and bicycling trail around the perimeter of San Francisco and San Pablo Bays. The Bay Trail Plan mandates that the Bay Trail provide connections to existing park and recreational facilities, create links to existing and proposed transportation facilities, and be planned in a way that avoids adverse effects on environmentally sensitive areas. The Bay Trail Plan policies and design guidelines are intended to complement, rather than supplant, the adopted regulations and guidelines of local managing agencies. Implementation of the Bay Trail Plan relies on continued cooperation among shoreline property owners as well as federal, state, and local agencies with jurisdictions over the trail alignment.[5]

[4] Per Public Resources Code 21155 et seq., to quality as a Transit Priority Project, a project must meet the following criteria: be consistent with the general use designation, density, building intensity, and applicable policies of the adopted RTP/SCS; have at least 50 percent residential use; have a FAR of 0.75 or more if the project has between 6 and 50 percent nonresidential uses; have a minimum net density of at least 20 dwelling units per acre; and be located within 0.5 mile of a major transit stop or high-quality transit corridor included in the RTP/SCS.

[5] Association of Bay Area Governments. 2015. *Bay Trail Plan Summary*. Available: <http://baytrail.org/wp-content/uploads/2015/12/San-Francisco-Bay-Trail_-Bay-Trail-Plan-Summary.pdf>. Accessed: January 6, 2016.

The Bay Trail Plan and Design Guidelines would be applicable to the Project because the proposed multi-use bicycle/pedestrian bridge would connect the Project site and the Belle Haven neighborhood, to the south, to the Bay Trail. The bridge would be within the California Department of Transportation (Caltrans) right-of-way and would touch down along the north side of the Bay Trail.

City/County Association of Governments Congestion Management Program

The City/County Association of Governments (C/CAG) has prepared and adopted a Congestion Management Plan (CMP) to identify strategies that respond to future transportation needs, develop procedures to alleviate and control congestion, and promote countywide solutions. C/CAG adopted the current CMP in 2015.[6]

Six roadway segments that were considered in the transportation analysis for this Project are CMP-designated Routes of Regional Significance:

- Bayfront Expressway from US 101 to Willow Road, from Willow Road to University Avenue, and from University Avenue to the Alameda county line
- State Route (SR) 109 (University Avenue) from Bayfront Expressway to Kavanaugh Drive
- SR 114 (Willow Road) from US 101 to SR 84
- US 101 from Whipple Avenue to the Santa Clara county line

In addition, three of the intersections included in the transportation analysis for this Project are CMP-designated intersections and monitored by C/CAG:

- Bayfront Expressway and University Avenue (SR 109)
- Bayfront Expressway and Willow Road (SR 114)
- Bayfront Expressway and Marsh Road

Project consistency with the CMP is discussed further in Section 3.3, *Transportation/Traffic*.

Environmental Setting

Adjacent Uses

The Project site is located in the city of Menlo Park. The city encompasses an area of about 19 square miles, including nearly 12 square miles of the San Francisco Bay (Bay) and wetlands. The approximately 7-square-mile urbanized portion of the city is virtually built out. The Project site is north of US 101, within an office park and industrial area, and bounded by Bayfront Expressway (SR 84) to the north, Chilco Street to the west and south, and Facebook Building 20 to the east. Figure 2-1 in Chapter 2, *Project Description*, depicts the Project site location and adjacent uses. Tidal mudflats and marshes in the Bay, the Don Edwards San Francisco Bay National Wildlife Refuge (Refuge), the Bay Trail, Ravenswood Slough, and the former salt ponds are located north of the Project site, across SR 84.

[6] City/County Association of Governments of San Mateo County. 2015. *Final San Mateo County Congestion Management Program 2015*. November. Available: <http://ccag.ca.gov/wp-content/uploads/2016/02/2015-CMP_Final_rev.pdf>. Accessed: February 8, 2016.

The existing Facebook Campus is located east and northeast of the Project site. Buildings 10–19 include approximately 1 million gross square feet (gsf) of space, consisting primarily of office uses, except for Buildings 11, 18, and 19, which include cafés and a fitness center, respectively. The existing Facebook Campus buildings range in height from 31.5 feet to 47 feet to the top of the parapet. Building 20, immediately east of the Project site, is an approximately 433,555 gsf office building, with approximately 1,500 parking spaces located at grade beneath the building podium. Inclusive of all rooftop mechanical screening and the East Lobby roof, Building 20 is approximately 73 feet in height. Building 20 became operational in 2015 and accommodates approximately 2,800 employees.

The Dumbarton Rail Corridor, immediately south of Chilco Street and the Project site and north of the Belle Haven neighborhood, is a rail line that crosses the northernmost part of the city from east to west. The Dumbarton Rail Corridor separates the Belle Haven neighborhood from the Project site. This segment is part of a former Union Pacific line that once crossed the Bay. This railway currently consists of a single track; however, the rail bridge that served as the connection for this line is no longer functional. At this time, the railroad line is no longer in use, but a bicycle/pedestrian trail adjacent to the existing railroad line is currently being studied, along with other transportation alternatives, as part of the Dumbarton Corridor Study.

To the south of the Project site, across Chilco Street and the Dumbarton Rail Corridor, is the Belle Haven neighborhood, which includes a mix of uses, including churches, Menlo Park Fire Station No. 77, single-family residences, and multi-family residential units. The Belle Haven neighborhood also includes institutional and park uses, such as Beechwood School, Belle Haven Elementary School, the Belle Haven Pool, Belle Haven Youth Center, Onetta Harris Community Center, Menlo Park Senior Center, Boys and Girls Club, Hamilton Park, and Kelly Park. The majority of the Belle Haven neighborhood is zoned as R-1-U, (Single-Family Urban Residential District), with a General Plan land use designation of Low-Density Residential. However, along the north side of US 101, are areas that are zoned R-2 (Low-Density Apartment District) and R-3 (Apartment District). Along the southern border of the Dumbarton Rail Corridor and along US 101, zoning includes R-3, R-4-S, and C-2-S (Neighborhood Commercial District, Special). Similarly, along Willow Road, zoning includes C-2-S, R-3, R-4-S (High Density, Special), and C-2-B (Neighborhood Commercial District, Restrictive). Other zoning in the Belle Haven neighborhood includes P-F (Public Facilities) for Belle Haven Elementary School and Joseph B. Kelly Park (Kelly Park) and OSC (Open Space and Conservation) for Hamilton Park.

The area west of the Project site and north of the Dumbarton Rail Corridor includes a mix of warehouses and office buildings, including businesses that are involved in the science and technology sector (e.g., biotech, research and development [R&D], high-tech firms), law firms, business services, fitness centers, and wholesale retail. This area is in the process of transitioning from 1960s and 1970s industrial and warehousing uses to corporate campuses and office uses. Many of the older buildings in the area consist of large industrial warehouses, approximately one to two stories in height, with surface parking lots and street trees. Several newer office buildings, up to three stories in height, are located west of the Project site along Commonwealth Drive. This area is designated primarily as Limited Industry under the General Plan and zoned M-2 (General Industrial) District, and M-2(X), (General Industrial, Conditional Development) District. The M-2(X) District allows construction of buildings greater than 35 feet in height, subject to certain conditions, as described above.

Project Site

As described in Chapter 2, *Project Description*, the approximately 58-acre Project site consists of one parcel (assessor's parcel number 055-260-250) that encompasses the existing TE Connectivity (TE) Campus at 300–309 Constitution Drive in the city of Menlo Park. The Project site is zoned M-2 (General Industrial) and M-2(X) (General Industrial, Conditional Development). It is designated as Limited Industry under the General Plan and can be built out to approximately 1.142 million gsf for allowable office uses under the 0.45 FAR and up to approximately 1.396 million gsf (0.55 FAR) for other general industrial uses, including, but not limited to, warehousing, manufacturing, printing, assembling, related office and laboratory uses, and shipping and receiving.

Ten buildings are presently located on the Project site,[7] with former industrial, warehouse, office, and R&D uses totaling approximately 1.02 million gsf (including Building 23). The existing buildings, which cover approximately 46 percent of the Project site, range in height from a single story to three partial stories. The buildings were generally built in the late 1960s as part of an industrial and manufacturing campus. In addition, a privately owned substation is located along the west side of Building 23.

The Project site is currently accessible from one stop sign–controlled driveway on Chilco Street. There is also an emergency vehicle access point between the eastern end of the Project site and the adjacent Building 20. In addition, the Project site currently includes approximately 1,690 parking spaces.

Environmental Impacts

This section describes the impact analysis related to land use and planning for the Project. It describes the methods used to determine the impacts of the Project and lists the thresholds used to conclude whether an impact would be significant. Impacts are determined to be less than significant (LTS), less than significant with mitigation (LTS/M), or significant and unavoidable (SU); there can also be a no impact (NI) determination. Measures to mitigate (i.e., avoid, minimize, rectify, reduce, eliminate, or compensate for) significant impacts accompany each impact discussion, as needed.

Thresholds of Significance

In accordance with Appendix G of the State CEQA Guidelines, the Project would be considered to have a significant effect if it would result in any of the conditions listed below.

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

[7] Although 10 buildings were located on the Project site at the time of the NOP's release (the baseline), prior to the City's consideration of the Project, two buildings (307–309) were slated to be demolished. This will occur as a separate project; therefore, for purposes of this analysis, it is assumed that Buildings 307–309 are existing at the Project site.

Methods for Analysis

CEQA requires that an EIR consider whether a proposed project may conflict with any applicable land use plan, policy, or regulation that was adopted for the purpose of avoiding or mitigating an environmental impact. This environmental determination differs from the larger policy determination of whether a proposed project is consistent with a jurisdiction's general plan. The former determination (intended for consideration in a CEQA document) is based on, and limited to, a review and analysis of environmental effects. The latter determination, by comparison, is made by the decision-making body of the jurisdiction and based on the jurisdiction's broad discretion to assess whether a proposed project would conform to the policies and objectives of its general plan/specific plan as a whole. In addition, the broader general plan consistency determination takes into account all evidence in the record concerning the project characteristics, its desirability, as well as its economic, social, and other non-environmental effects.

Conflicts of a project with land use policies do not, in and of themselves, constitute significant environmental impacts. Policy conflicts are considered environmental impacts only when they result in direct environmental effects. Decision-makers (in this case, the City Council) will need to consider the consistency of the proposed development with applicable plans and policies that do not directly relate to physical environmental issues when determining whether to approve or deny the Project.

Impacts Not Evaluated in Detail

Division of an Established Community. The Project would redevelop a site that is already developed and would not change the site boundaries. The Project site is located to the north of the Dumbarton Rail Corridor, in an area that is characterized by light industrial and office uses. The Project would include the construction of two new office buildings and a hotel with surface parking and landscaping. Although this would add new development to the area, the development would be located in an area of similar uses and would be physically separated from the Belle Haven neighborhood by the Dumbarton Rail Corridor. The Project would not divide the established Belle Haven community to the south, resulting in ***no impact***. Therefore, this impact is not evaluated further.

Impacts on an Adopted Habitat Conservation Plan or Natural Community Conservation Plan. The Project site is not a part of an adopted habitat conservation plan, natural community conservation plan, or other approved local, regional, or state habitat conservation plan. However, the salt marshes immediately north of SR 84 are part of the Refuge, which is actively pursuing expansion and protection of habitats and associated plant and wildlife species contained therein. The Refuge is also closely involved with the South Bay Salt Pond Restoration Project, which has active restoration sites near the Project site. Implementation of the Project would include construction of a new multi-use bicycle/pedestrian bridge over SR 84 to allow for public access to the Bay Trail and Bedwell Bayfront Park from the Project site. However, the foundation and vertical supports of the bridge touchdown north of SR 84 would be located entirely within the Caltrans right-of-way adjacent to the Bay Trail and would not extend into the Refuge. A portion of the aerial walkway could cantilever beyond the Caltrans easement. Regardless, none of the construction activities would interfere with management and/or expansion of the Refuge or restoration of the salt ponds. The Project would result in ***no impact*** on an adopted habitat conservation plan, natural community conservation plan, or other approved local, regional, or state habitat conservation plan. Therefore, this impact is not evaluated further.

Impacts and Mitigation Measures

Impact LU-1: Conflicts with Adopted Land Use Plans and Policies. The Project would not conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the Project (including, but not limited to, a general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect. (LTS)

Consistency with the General Plan

Land Use Designations. The Project is required to be consistent with the land use designations described in the General Plan. As described above, the Project site has a land use designation of Limited Industry, which allows for light manufacturing and assembly, the distribution of manufactured products, research and development facilities, industrial supply facilities, incidental warehousing, offices, limited retail sales (e.g., to serve businesses in the area), public and quasi-public uses, and similar compatible uses. Under the existing land use designation, the Project site can be built out to approximately 1.142 million gsf for office uses under the allowable 0.45 FAR or up to approximately 1.396 gsf (0.55 FAR) for other general industrial uses, including, but not limited to, warehousing, manufacturing, printing, assembling, related office and laboratory uses, and shipping and receiving.

The Project would include primarily office uses, with ancillary uses such as parking, a cafeteria, and private dining rooms. These uses are permitted under the Limited Industry designation. In addition, the Project would include a 200-room, limited-service hotel; the proposed hotel is not directly permitted within the Limited Industry designation. However, as indicated in Chapter 2, *Project Description*, the Project Sponsor proposes to amend the Zoning Ordinance text to accommodate the proposed hotel. Further, Policy I-E-2 of the General Plan, described below, allows consideration of hotel uses at suitable locations within the commercial and industrial zoning districts of the city. Construction of Buildings 21, 22, and the hotel would result in a net increase of approximately 121,300 gsf at the Project site. Including Building 23, the total gross floor area of office uses on the Project site would be approximately 1.143 million gsf, which is within the 0.45 FAR maximum for offices. The total gross floor area at the Project site would be approximately 1.317 million gsf, which is within the 0.55 overall FAR maximum in the M-2 zoning district for other general industrial uses.[8] As such, the Project, including the proposed amendment to the Zoning Ordinance, would not conflict with the existing land use designation, resulting in a ***less-than-significant*** impact.

Goals and Policies. The determination of whether or not the Project would conflict with applicable policies is based on either the Project description (Chapter 2) or, for policies adopted for the purpose of mitigating an environmental impact, on the environmental analysis provided in the applicable resource section of this Draft EIR. Table 3.1-2, at the end of this section, outlines the adopted General Plan goals and policies that have been identified as applicable to the Project, describes environmental effects and potential conflicts, and provides a determination of "consistent" or "inconsistent" for each policy.

Draft ConnectMenlo Goals and Policies. As with the current General Plan, the determination of whether or not the Project would conflict with applicable policies proposed as part of the draft ConnectMenlo General Plan update is based on either the Project description (Chapter 2) or the

[8] Although Building 23 is not part of the Project, because it is located on the Project site, it is included in the FAR calculations.

environmental analysis provided in the applicable resource sections of this Draft EIR. For informational purposes, Table 3.1-3, at the end of this section, outlines the draft goals and policies of the ConnectMenlo Land Use and Circulation Elements that have been identified as applicable to the Project, describes environmental effects and potential conflicts, and provides a determination of "consistent" or "inconsistent" for each draft policy. Note that buildout of ConnectMenlo is included in the cumulative analysis throughout this document. However, for purposes of general plan consistency analysis, this section considers the draft goals and policies of ConnectMenlo, even though they are not yet adopted.

General Consistency with General Plan Goals and Policies. Although the table shows some inconsistencies with the General Plan, the Project would be generally consistent with the goals and policies contained in the General Plan and the draft ConnectMenlo General Plan update. The ultimate determinations of general plan consistency can and will be made by the City Council. The ultimate finding of general plan consistency does not require that a project be entirely consistent with each individual general plan policy. A proposed project can be generally consistent with a general plan, even if it does not promote every applicable goal and policy. Assuming approval, the Project, including the proposed amendment to the Zoning Ordinance, would be generally consistent with applicable goals, policies, and actions, resulting in a ***less-than-significant*** impact.

Compliance with the Zoning Ordinance

As described in Chapter 2, *Project Description*, the Project would include demolition of existing onsite buildings, paving and landscaping, and the construction of two new office buildings (Buildings 21 and 22), encompassing approximately 962,400 gsf. In addition, the Project would include a 200-room limited-service hotel with approximately 174,800 gsf. Development of the office buildings and hotel would result in a net increase of approximately 121,300 gsf at the Project site. The Project would provide approximately 3,533 parking spaces for the office buildings, the hotel, and existing Building 23. The office buildings and the hotel would be approximately 75 feet in height.

The Project site is currently zoned M-2, which permits warehousing, manufacturing, printing, assembling, and office uses. The Project Sponsor is proposing to amend the Zoning Ordinance to accommodate the proposed hotel by conditionally permitting hotel uses in the M-2 zoning district. The Project Sponsor is also proposing to rezone the Project site to M-2(X), which would be necessary to allow a maximum building height in excess of 35 feet, and utilize a conditional development permit to establish the appropriate development standards, such as parking, setback, and building coverage standards, for the Project.

Table 3.1-4, below, summarizes allowed development under current M-2 zoning and the development proposed for the Project site.

Floor Area Ratio. Development regulations for the M-2 district include a maximum land cover by structures of 50 percent of the site and a maximum FAR of between 0.45 and 0.55, depending on the land use. For office buildings, the FAR must not exceed 0.45. The office buildings proposed for the Project site would be built in accordance with the allowable FAR. The combined office buildings and hotel would have a FAR of 0.52, which would comply with the maximum allowable FAR of 0.55 for the M-2 district. Therefore, the Project would not conflict with the existing FAR requirements outlined in the Zoning Ordinance or, as discussed above, the General Plan designation. The Project would have a ***less-than-significant*** impact related to FAR requirements.

Table 3.1-4. Allowed and Proposed Development at the Project Site

	Allowed Development (M-2 Zoning)	Proposed Development (M-2(X) Zoning)[a]
Floor Area Ratio (FAR)	0.45 office/0.55 general industrial uses	0.52
Gross Square Feet	1,142,000 office/1,389,564 non-office uses	1,317,300[b]
Site Coverage[c]	50%	49.5%
Max. Building Heights	35 feet	75 feet[d]

Sources: City of Menlo Park, 2014; Gehry Partners, 2015.

Notes:

a. The proposed development evaluates the Project site (TE Campus site). Under the Project, Building 20 would be merged and lot lines adjusted to include Buildings 20–23 on one site and the hotel on another. The overall developments calculations include both parcels.

b. Includes existing Building 23.

c. Site coverage represents land cover by structures. Building footprints, including Building 23, would occupy 50 percent of the site (approximately 1.26 million gsf).

d. According to Section 16.04.330 of the Municipal Code, the height of a structure is defined as "the vertical distance from the average level of the highest and lowest points of the natural grade to the topmost point of the structure, excluding elevator equipment rooms, ventilating and air-conditioning equipment, and chimneys." As such, the screened mechanical areas are excluded from the height calculations. Including the roof screen, elevator shaft, and stairwell, the buildings would be approximately 75 feet in height.

Gross Floor Area and Site Coverage. Per the Zoning Ordinance, and based on the size of the Project site, office buildings can occupy up to 1,142,000 gsf of gross floor area, and non-office buildings can occupy up to 1,389,564 gsf. The Project would include 962,400 gsf for office uses and associated amenities and, therefore, would be within the allowed floor area. The buildings would incorporate at-grade parking beneath the building podium, with office or hotel space above. Therefore, although the ground-floor lobby level of Buildings 21 and 22 and the hotel would cover 10,300 gsf, 9,000 gsf, and 13,700 gsf, respectively, the three buildings themselves, using the dimensions for the largest floors, would cover approximately 386,400 gsf, 419,900g gsf, and 39,400 gsf of the parcel, respectively. The proposed building coverage (Buildings 21 and 22 and the hotel) would be a combined 845,700 gsf. Together with the existing 180,100 gsf footprint of Building 23, total building coverage at the site would be 1,025,800 gsf, or 49.5 percent of the Project site. As such, the Project would be consistent with the requirements for gross floor area and site coverage. However, with the lot line adjustment, building coverage could exceed 50 percent. As described in Chapter 2, *Project Description*, and noted above, the Project would be subject to a conditional development permit that will establish the appropriate development standards, such as parking, setback, and building coverage standards, for the Project. Therefore, ***less-than-significant*** impacts would occur.

Building Heights. The M-2 zone has a height limit of 35 feet, which does not include the screened mechanical areas on rooftops. The existing Building 23, which would remain at the Project site, has a height of 52 feet. The Project Sponsor proposes to rezone the entire site to M-2(X) to exceed the maximum 35-foot height limit, thereby accommodating the proposed maximum building heights of 75 feet. The M-2(X) district allows an increased height, beyond that permitted in the M-2 district, provided a conditional development permit is obtained, the minimum building site is 1 acre, and off-street parking is provided on or adjacent to the building site. The proposed new zoning and conditional development permit would allow the Project to be consistent with the Zoning Ordinance, resulting in a ***less-than-significant*** impact.

Allowable Uses. As described above, the Project site is currently within the M-2 (General Industrial) and M-2(X) (General Industrial, Conditional Development) zoning districts. The M-2 (General Industrial) zone, which applies to the portion of the Project site where the hotel is proposed, allows general industrial uses and offices but not hotels. The Project Sponsor proposes to amend the Zoning Ordinance text to accommodate the proposed hotel by conditionally permitting hotel uses in the M-2 zoning district. The proposed amendment would allow the Project to be consistent with the uses allowed by the Zoning Ordinance, resulting in a ***less-than-significant*** impact.

ConnectMenlo Proposed Zoning. The ConnectMenlo General Plan update would include a rezoning of the Project site from M-2(X) (General Industrial, Conditional Development) to the proposed O (Office) zoning district. Office and hotel uses are permitted or conditionally permitted in the O (Office) zoning district. In addition, the proposed FAR for the Project would be within the limits established by the proposed rezoning. Therefore, the proposed uses and FAR would be consistent with the potential rezoning. The Project's CDP would continue to define all other development regulations and design standards. Accordingly, the Project would be consistent with the proposed rezoning.

Consistency with Plan Bay Area

There is no requirement under CEQA to analyze Project consistency with a non-enforceable plan, such as Plan Bay Area. In fact, Plan Bay Area expressly states that its "[a]doption…will not require any changes to local land use policies or environmental review processes."[9] As described above, instead of imposing requirements on local land use decisions, Plan Bay Area (consistent with SB 375) provides incentives for local governments by allowing streamlined CEQA review of GHG impacts for certain qualifying "transit priority projects" and other residential or mixed-used projects (i.e., where at least 75 percent of the total square footage of a project consists of residential use) that are consistent with Plan Bay Area, as the approved SCS.[10]

The Project site is not located within a TPP-eligible area. As such, the Project's degree of consistency with Plan Bay Area is discussed for informational purposes only in this EIR.

Plan Bay Area calls for new development to be placed near active transit corridors. Consistent with Plan Bay Area, the Project site is an already-developed urban site; however, there are no public transit stops adjacent to the Project site. AC Transit, SamTrans, and the City of Menlo Park Midday Shuttle serve areas near the Project site, connecting them to surrounding areas. The Project would include a Transportation Demand Management (TDM) program that would provide subsidized public transit passes and shuttle service that would connect the Project site to public transit stations, thereby encouraging employees to use alternate modes of transportation and reducing the number of vehicles traveling to/from the Project site. Section 3.3, *Transportation/Traffic*, of this Draft EIR describes the Project's relationship to transit in detail.

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[9] Metropolitan Transportation Commission. 2013. *Plan Bay Area: Strategy for a Sustainable Region*. Metropolitan Transportation Agency and Association of Bay Area Governments. Adopted: July 18, 2013. Available: <http://files.mtc.ca.gov/pdf/Plan_Bay_Area_FINAL/Plan_Bay_Area.pdf>. Accessed: February 8, 2016.

[10] Public Resources Code Section 21155 (defining a "transit priority project" as a project that contains at least 50 percent residential use and a minimum net density of at least 20 dwelling units per acre that is within 0.5 mile of a major transit stop or high-quality transit corridor) and Section 21159.28 (providing certain exemptions from the need to evaluate project or cumulative impacts on global warming due to car and light-duty vehicle trips generated by the project).

As indicated above in Table 3.1-1 and in Section 3.12, *Population and Housing*, the City's jobs/housing ratio is projected to worsen over the next 5 years. The Project's development of office and hotel uses, rather than housing, in the context of the city's already-high jobs/housing ratio, does not further the balanced growth objectives of Plan Bay Area. However, as described in Section 3.12, the indirect housing demand from the Project would represent a small percentage of ABAG's projected housing growth for Menlo Park.

As noted above, because Plan Bay Area is not a legally enforceable plan relative to local land use planning, no significance finding is required under CEQA concerning consistency with this plan.

Consistency with the ABAG Bay Trail Plan and Design Guidelines

The Project would provide a new multi-use bicycle/pedestrian bridge that would extend over Bayfront Expressway, connecting the Project site and the Belle Haven neighborhood with the Bay Trail. This connection would touch down entirely within the Caltrans right-of-way, north of the Bay Trail. The facility would enhance access to the Bay Trail, and although it would not be located within the area that would be subject to the Bay Trail's design guidelines, it would be compatible with those guidelines. As such, the Project would have no inconsistencies with the ABAG Bay Trail and Design Guidelines and would result in a **less-than-significant** impact.

Consistency with the C/CAG Congestion Management Plan

According to the 2009 CMP,[11] for freeway segments that are currently in compliance with the adopted level-of-service (LOS) standard, a project is considered to have an impact if it will cause freeway segments to operate at an LOS that violates the adopted standard. Additionally, a project will have an impact if the cumulative analysis indicates that the combination of a proposed project and future cumulative traffic demand will result in a freeway segment operating at an LOS that violates the adopted standard. An impact could also occur if a proposed project increases traffic demand on a freeway segment by an amount equal to 1 percent or more of the segment's capacity or causes the freeway segment volume-to-capacity (v/c) ratio to increase by 1 percent.

As described in Impact TRA-2 of Section 3.3, *Transportation/Traffic*, the Project would affect five CMP Routes of Regional Significance. The Project would implement Mitigation Measure TR-2.1, which would make improvements to the Routes of Regional Significance. A typical mitigation measure would seek to widen the road to add travel lanes and capacity. However, impacts on Routes of Regional Significance would remain significant and unavoidable because these roadways are not under the jurisdiction of the City. In addition, freeway improvement projects, which add travel lanes are planned and funded on a regional scale, would be too costly for a single project to fund. Regardless, the Project would be generally consistent with the CMP, resulting in ***less-than-significant*** impacts. The Project's impacts on Routes of Regional Significance are considered transportation-related impacts and are fully evaluated in Section 3.3, *Transportation/Traffic*.

[11] City/County Association of Governments of San Mateo County. 2009. *Final San Mateo County Congestion Management Program 2009*. Adopted: September 2009. Available: <http://ccag.ca.gov/wp-content/uploads/2014/05/FINAL-SMC-2009-CMP.pdf>. Accessed: February 8, 2016.

Cumulative Impacts

Because land use policies are regional in scope, the geographic context for the cumulative impacts associated with land use issues is broader than the city and would include regional development under the jurisdiction of the ABAG. Past, present, and future cumulative development within this geographic context assumes full buildout of the general plans of the nine ABAG counties as well as development envisioned in the Land Use Element of the City General Plan, including the projects identified in Table 3.0-3, *Cumulative Projects*, in Section 3.0, *Introduction to the Environmental Analysis*. Cumulative impacts are addressed only for those thresholds that have a Project-related impact, whether it be less than significant, significant, or significant and unavoidable. If the Project would result in no impact under a particular threshold, the threshold is not considered one that would contribute to any cumulative impact, and no analysis is required.

This cumulative analysis examines the effects of the Project in the relevant geographic area, in combination with other current projects, probable future projects, and projected future growth.

Impact C-LU-1: Cumulative Land Use Impacts. The Project, in combination with other foreseeable development in the nine-county ABAG region, would not be inconsistent with applicable land use plans, policies, and regulations. (LTS)

As noted, CEQA requires that an EIR consider whether a proposed project may conflict with any applicable land use plan, policy, or regulation that was adopted for the purpose of avoiding or mitigating an environmental impact. This environmental determination differs from the larger policy determination of whether a proposed project is consistent with a jurisdiction's general plan. Regional growth in general is reviewed for consistency with adopted land use plans and policies by the individual cities and counties in the geographic context in accordance with the requirements of CEQA, which require findings of plan and policy consistency prior to approval of entitlements for development. Analysis of project consistency with land use policies or regulations adopted for the purpose of avoiding or mitigating an environmental impact is similarly evaluated for each individual project and addressed in the analysis for each specific resource area. For example, if an individual project were to result in the division of an established community, this would be addressed in the land use section of that project's EIR or other environmental document. The environmental evaluation for the project would also include an analysis of the division of an established community on a cumulative basis.

Because consistency with land use plans and policies is inherently a project-specific issue, and each jurisdiction would decide on project consistency at the project level, there would be no cumulative impact as a result of cumulative development in the ABAG region. As discussed above, implementation of the Project at the Project site would be generally consistent with the existing and proposed plans, including the adopted General Plan, proposed ConnectMenlo, Municipal Code, Plan Bay Area, ABAG Bay Trail Plan and Design Guidelines, and the C/CAG CMP. Therefore, the Project's cumulative impact would be ***less than significant***.

Table 3.1-2. Comparison of Project to General Plan Goals and Policies

General Plan Goal/Policy	Consistency Analysis
Land Use Element, adopted December 1, 1994, and amendments through May 21, 2013	
Policy I-E-2: Hotel uses may be considered at suitable locations within the commercial and industrial zoning districts of the city.	CONSISTENT. Although hotel uses are specifically not permitted in M-2 zoning districts (see the Compliance with the Zoning Ordinance discussion under Impact LU-1), the Project Sponsor proposes to amend the Zoning Ordinance text to accommodate the proposed hotel. Such an amendment would further ensure compatibility of the Project with this policy of the General Plan. A hotel use is suitable at the Project site because it would serve the demand from office and industrial uses in the area, particularly the demand from the Facebook Campus.
Policy I-E-4: Any new or expanded office must include provisions for adequate off-street parking, mitigating traffic impacts, and developing effective alternatives to auto commuting, must adhere to acceptable architectural standards, and must protect adjacent residential uses from adverse impacts.	CONSISTENT. The Project would provide approximately 3,533 parking spaces for the office buildings, the hotel, and Building 23. In addition, the Project Sponsor proposes a CDP to establish the appropriate development standards, including parking standards, for the Project. Further, the Project would include a TDM program that would encourage employees to use alternate modes of transportation, thereby reducing the number of vehicles traveling to/from the Project site.
Policy I-G-7: Public access to the Bay for the scenic enjoyment of the open water, sloughs, and marshes shall be protected.	CONSISTENT. The Project would include a publicly accessible open space area between proposed Buildings 21 and 22 and a safe bicycle and pedestrian route to the Bay and the Bay Trail. The Project's site and landscape improvements would include bicycle and pedestrian paths to improve biking and pedestrian circulation and provide public access and connectivity between the Belle Haven community and the Bay Trail.
Policy I-G-10: Extensive landscaping should be included in public and private development, including greater landscaping in large parking areas. Where appropriate, the City shall encourage placement of a portion of the required parking in landscape reserve until such time as the parking is needed. Plant material selection and landscape and irrigation design shall adhere to the City's Water Efficient Landscaping Ordinance.	CONSISTENT. The perimeter of the Project site would have a landscaped buffer; the interior of the site would include an approximately 2-acre, publicly accessible open space area. In addition, the Project would include a terraced garden, primarily for employee use, between Buildings 20 and 21 as well as useable private open spaces on the roofs of Buildings 21 and 22, which would include landscaped areas and walking paths. The sustainable landscaping, which would be developed pursuant to the City's Water-Efficient Landscape Ordinance, would be composed of native plant communities that are well adapted to the site and sensitive to adjacent bayland habitats.
Goal I-H: To promote the development and maintenance of adequate public and quasi-public facilities and services to meet the needs of the City's residents, businesses, workers, and visitors.	CONSISTENT. The Project would include new private and public open spaces as well as landscaped areas, provide public access and connectivity between the Belle Haven community and the Bay Trail, improve biking and pedestrian circulation, and create new social spaces for the city's residents as well as workers and visitors on the site.

General Plan Goal/Policy	Consistency Analysis
Policy I-H-1: The community design should help conserve resources and minimize waste.	CONSISTENT. Building 21 would pursue Leadership in Energy and Environmental Design (LEED) Gold certification. To conserve resources and reduce waste, sustainability features would be employed, including, but not limited to, a building form and space layout that would promote daylight use, energy-efficient lighting and heating, ventilating, and air-conditioning (HVAC) equipment, onsite renewable energy generation, and water-efficient plumbing fixtures and landscaping. In addition, construction waste would be diverted from landfills, and resource-conserving materials would be given priority. The Project could also use a recycled water system for landscape irrigation and toilets/urinals.
Policy I-H-2: The use of water-conserving plumbing fixtures in all new public and private development shall be required.	CONSISTENT. The Project's sustainability features would include water-efficient plumbing fixtures to reduce water consumption by 40 percent compared with the LEED baseline. In addition, the Project would include water-efficient landscaping and an irrigation design that would reduce irrigation water consumption by 50 percent compared with the LEED baseline.
Policy I-H-3: Plant material selection and landscape and irrigation design for City parks and other public facilities and in private developments shall adhere to the City's Water Efficient Landscaping Ordinance.	CONSISTENT. The Project's landscaping, which would include a variety of landscape and open space areas, perimeter landscape buffers, and stormwater gardens, would be developed pursuant to the City's Water-Efficient Landscape Ordinance.
Policy I-H-7: The use of reclaimed water for landscaping and any other feasible uses shall be encouraged.	CONSISTENT. The Project's incorporation of water-efficient landscaping and an irrigation design that would reduce irrigation water consumption by 50 percent compared with the LEED baseline would minimize the use of potable water for irrigation. In addition, the Project could use a recycled water system for landscape irrigation and toilets/urinals.
Policy I-H-9: Urban development in areas with geological and earthquake hazards, flood hazards, and fire hazards shall be regulated in attempt to prevent loss of life, injury, and property damage.	CONSISTENT. Project development would involve construction and occupancy of new buildings on a site with seismic hazards, the majority of which is within the Federal Emergency Management Agency (FEMA) 100-year floodplain and subject to tidal flooding from the Bay. Adherence to federal, state, and local laws would reduce the effects of natural hazards. Compliance with the 2013 California Building Code (CBC) requires geotechnical investigations to provide design criteria that minimize impacts associated with strong ground shaking during an earthquake and all foundations and other improvements to be designed by a licensed professional engineer and based on site-specific soil investigations. The hydrology and hydraulics report indicates that the Project would ultimately reduce the risk of flooding through its incorporation of pervious landscaping, bio-retention areas, and stormwater infrastructure improvements.

General Plan Goal/Policy	Consistency Analysis
Policy I-H-11: Buildings, objects, and sites of historic and/or cultural significance should be preserved.	CONSISTENT. The Project would include demolition of Buildings 301–306; however, these buildings are not considered historic. Ground disturbance would occur during construction; however, implementation of Mitigation Measures CR-2.1, CR-3.1, and CR-4.1 would reduce impacts on archeological and paleontological resources or human remains.
Policy I-H-12: Street orientation, placement of buildings, and the use of shading should contribute to the energy efficiency of the community.	CONSISTENT. The Project would incorporate features that would contribute to the community's energy efficiency, including shade trees. Buildings would be orientated to maximize the use of natural light and minimize energy use.
Circulation and Transportation Element, December 1, 1994, and amendments through May 21, 2013	
Goal II-A: To maintain a circulation system using the Roadway Classification system that will provide for the safe and efficient movement of people and goods throughout the City for residential and commercial purposes.	CONSISTENT. The Project would not alter the alignment of any roads. However, the increase in onsite employment could result in additional traffic in the area. The Project Sponsor is proposing a trip cap to limit the number of daily and peak hour (AM and PM) trips to and from the Project site and reduce traffic impacts. It would also implement a TDM program to promote alternatives to private automotive travel, thereby reducing the number of vehicle trips and the resulting traffic. Nonetheless, the Project would still add traffic to local roadways, as discussed in Section 3.3, *Transportation/Traffic*.
Policy II-A-1: Level of Service D (40 seconds average stopped delay per vehicle) or better shall be maintained at all City-controlled signalized intersections during peak hours, except at the intersection of Ravenswood Avenue and Middlefield Road and at intersections along Willow Road from Middlefield Road to US 101.	INCONSISTENT. The Project, under background plus-project conditions, would result in significant and unavoidable impacts on the following intersections during the a.m. peak hour: Willow Road/Bayfront Expressway and Bayfront Expressway/proposed Building 21 entrance. During the p.m. peak hour, the Project would result in significant and unavoidable impacts on the following intersections: Chilco Street/Hamilton Avenue, Bayfront Expressway/Building 20 entrance, Willow Road/Hamilton Avenue, Willow Road/Bayfront Expressway, Bayfront Expressway/University Avenue, and University Avenue/Adams Drive. As discussed in Section 3.3, *Transportation/Traffic*, all other intersections would operate at an acceptable level under background plus-project conditions (some with implementation of Mitigation Measures TRA-1.1 and TRA-1.2).

General Plan Goal/Policy	Consistency Analysis
Policy II-A-2: The City should attempt to achieve and maintain average travel speeds of 14 miles per hour (Level of Service D) or better on El Camino Real and other arterial roadways controlled by the State and at 46 miles per hour (Level of Service D) or better on US 101. The City shall work with Caltrans to achieve and maintain average travel speeds and intersection levels of service consistent with standards established by the San Mateo County Congestion Management Plan.	INCONSISTENT. The following Routes of Regional Significance would operate at or below their LOS threshold with the addition of Project trips, and Project traffic would exceed the allowable 1 percent threshold, resulting in significant impacts: Bayfront Expressway (SR 84) between US 101 and Marsh Road, Bayfront Expressway between Willow Road and University Avenue, SR 84 between University Avenue and the county line, US 101 north of Marsh Road, and US 101 south of Willow Avenue. To the extent feasible, the City will work with Caltrans to maintain acceptable levels of service at these locations. In addition, Mitigation Measure TRA-2.1 would implement improvements to address background plus-project effects. However, as discussed in Section 3.3, these impacts are considered significant and unavoidable.
Policy II-A-4: New development shall be restricted or required to implement mitigation measures in order to maintain the levels of service and travel speeds specified in Policies II-A-1 through II-A-3.	CONSISTENT. As discussed in Section 3.3, *Transportation/Traffic*, the Project would result in several significant and unavoidable impacts on levels of service and travel speeds within the city. Nonetheless, the Project would implement all feasible mitigation, as listed in Section 3.3 of this Draft EIR.
Policy II-A-8: New developments shall be reviewed for its potential to generate significant traffic volumes on local streets in residential areas and shall be required to mitigate potential significant traffic problems.	CONSISTENT. Section 3.3, *Transportation/Traffic*, evaluates the Project's traffic and circulation impacts and includes mitigation where necessary to address significant traffic impacts.
Goal II-B: To promote the use of public transit.	CONSISTENT. There are no public transit stops within the vicinity of the Project site. However, the TDM program would provide subsidized public transit passes and shuttle service, connecting the Project site to public transit stations.
Policy II-B-1: The City shall consider transit modes in the design of transportation improvements and the review and approval of development projects.	CONSISTENT. The Project would include a TDM program that would promote the use of alternative travel modes, such as transit, carpooling, bicycling, and walking.
Goal II-C: To promote the use of alternatives to the single occupant automobile.	CONSISTENT. The Project Sponsor is proposing a trip cap to limit the number of daily and peak hour (a.m. and p.m.) trips to and from the Project site and reduce traffic impacts. It would also implement a TDM program to promote alternatives to private automotive travel, thereby reducing vehicle trips and the resulting traffic. To reduce the number of single-occupancy vehicles, the TDM program would provide commuter shuttle buses, vanpool programs, rideshare programs, and car-share services. However, the Project would still add traffic to local roadways, as discussed in Section 3.3, *Transportation/Traffic*.

General Plan Goal/Policy	Consistency Analysis
Goal II-D: To promote the safe use of a bicycle as a commute alternative and for recreation.	CONSISTENT. The Project would include bicycle/pedestrian pathways, which would be separated from the vehicle access roads, around the perimeter of the site. In addition, a north–south bicycle/pedestrian corridor would run through the middle of the site, connecting the proposed office buildings to the existing Building 20 east of the Project site and Facebook Buildings 10–19 north of Bayfront Expressway. The Project TDM program would promote bicycling as a commute alternative as well as several amenities and incentives, such as bike shops, lockers, towel service, bicycle pumps, self-repair stations, and loaner bikes as part of the TDM program. In addition, the Project would also include construction of a new multi-use bicycle/pedestrian bridge over Bayfront Expressway to allow for public access to the Bay Trail and Bedwell Bayfront Park from the Project site. The bicycle/pedestrian facilities would provide residents of the Belle Haven neighborhood and the general public with access to the Project site's open space and the bicycle/pedestrian bridge over Bayfront Expressway.
Policy II-D-4: The City shall require new commercial and industrial development to provide secure bicycle storage facilities on-site.	CONSISTENT. The Project would include exterior and interior bicycle parking and storage facilities in each building.
Goal II-E: To promote walking as a commute alternative and for short trips.	CONSISTENT. The Project's proposed pedestrian linkages would promote walking for short trips. The Project would include a TDM program that would promote the use of alternative travel modes, including walking. In addition, the Project would provide a pedestrian linkage through the Project site from the Bay Trail and the Belle Haven neighborhood, connecting the Project site with other areas of the city.
Policy II-E-1: The City shall require all new development to incorporate safe and attractive pedestrian facilities.	CONSISTENT. The Project would incorporate landscaped pedestrian facilities within the site that would link to offsite areas. These facilities include a pedestrian bridge across Bayfront Expressway that would connect the Project site and Belle Haven neighborhood with the Bay Trail. Frontage improvements, including bicycle and pedestrian improvements, along Chilco Street are being implemented by the Project Sponsor as a separate project.
Policy II-E-2: The City shall endeavor to maintain safe sidewalks and walkways where existing within the public right of way.	CONSISTENT. A proposed multi-use bicycle/pedestrian bridge over Bayfront Expressway would allow safe public access to the Bay Trail and Bedwell Bayfront Park from the Project site and the Belle Haven neighborhood. Frontage improvements, including pedestrian improvements, along Chilco Street are being implemented by the Project Sponsor as a separate project. In addition, Mitigation Measure TRA-3.2 would provide multi-modal improvements, which would help to offset the effect of daily traffic generated by the Project. In particular, such measures could include pedestrian enhancements across Willow Road at Hamilton Drive, Ivy Drive, and Newbridge Street as well as at other affected study segment locations.

General Plan Goal/Policy	Consistency Analysis
Open Space/Conservation Element, adopted May 21, 2013	
Policy OSC1.3: Sensitive Habitats. Require new development on or near sensitive habitats to provide baseline assessments prepared by qualified biologists, and specify requirements relative to the baseline assessments.	CONSISTENT. As part of this EIR, a field survey was conducted by a qualified biologist on August 17, 2015. The field survey found that no riparian habitat, sensitive natural communities, or wetlands are present on the Project site. The Project site is located approximately 250 feet south of the Don Edwards Bay National Wildlife Refuge, but there is limited habitat connectivity between the Project site and the Refuge because of the presence of Bayfront Expressway. The foundation and vertical supports of the proposed multi-use bicycle/pedestrian bridge over Bayfront Expressway would touch down within the Caltrans easement on the north side of Bayfront Expressway and would not extend into the Refuge. However, a portion of the aerial walkway could cantilever beyond the Caltrans easement. Mitigation Measures BIO-2.1, BIO-3.1, and BIO-3.2 in Section 3.8, *Biological Resources*, would mitigate the impact to less than significant.
Policy OSC1.4: Habitat Enhancement. Require new development to minimize the disturbance of natural habitats and vegetation, and require revegetation of disturbed natural habitat areas with native or non-invasive naturalized species.	CONSISTENT. The Project site is currently developed with urban uses and, as such, does not contain natural habitat areas. Existing shrubs and trees on the Project site provide nesting habitat for a variety of native birds; however, this habitat is of low quality because of the developed nature of the site and surrounding area.
Policy OSC1.6: South Bay Salt Pond Restoration Project and Flood Management Project. Continue to support and participate in Federal and State efforts related to the South Bay Salt Pond Restoration Project and flood management project. Provide public access to the Bay for scenic enjoyment and recreation opportunities as well as conservation education opportunities related to the open Bay, the sloughs, and the marshes.	CONSISTENT. The South Bay Salt Pond Restoration Project has active restoration sites near the Project site. Implementation of the Project would not involve any construction outside the currently developed/disturbed areas, although a portion of the aerial walkway could cantilever beyond the Caltrans easement. Regardless, the Project would not affect the restoration project. The proposed multi-use bicycle/pedestrian bridge across Bayfront Expressway would enhance public access to the Bay via the Bay Trail.
Policy OSC1.11: Sustainable Landscape Practices. Encourage the enhancement of boulevards, plazas and other urban open spaces in high-density and mixed use residential developments, commercial and industrial areas with landscaping practices that minimize water usage.	CONSISTENT. The perimeter of the Project site would have a landscaped buffer, and the interior of the site would include several landscaped open space areas and walking paths. The sustainable landscaping would be developed pursuant to the City's Water-Efficient Landscape Ordinance and consist of native plant communities. In addition, the Project could use a recycled water system for landscape irrigation and toilets/urinals, minimizing water usage.
Policy OSC1.12: Landscaping and Plazas. Include landscaping and plazas on public and private lands, and well-designed pedestrian and bicycle facilities in areas of intensive non-vehicular activity. Require landscaping for shade, surface runoff, or to obscure parked cars in extensive parking areas.	CONSISTENT. The Project site would include landscaping on both the perimeter and the interior of the site, including plazas; a publicly accessible open space area; and bicycle and pedestrian paths throughout the site. The landscaping would include shade trees in parking areas and stormwater gardens to accommodate runoff.

General Plan Goal/Policy	Consistency Analysis
Policy OSC1.13: Yard and Open Space Requirements in New Development. Ensure that required yard and open spaces are provided for as part of new multi-family residential, mixed-use, commercial and industrial development.	CONSISTENT. The Project would provide an approximately 2-acre, publicly accessible open space area within the Project site. In addition, the Project would include a new 1-acre terraced garden, primarily for employee use, between Buildings 20 and 21, and useable private open spaces on the roofs of Buildings 21 and 22, which would include landscaped areas and walking paths.
Policy OSC1.15: Heritage Trees. Protect Heritage Trees, including during construction activities through enforcement of the Heritage Tree Ordinance (Chapter 13.24 of the Municipal Code).	CONSISTENT. There are currently 770 trees on the Project site, including 274 trees that qualify as heritage trees under the City's Heritage Tree Ordinance. The 770 trees consist almost entirely of nonnative ornamental species. Nearly all of the heritage trees would be removed. However, compliance with the Heritage Tree Ordinance, including the procurement of a tree removal permit, is mandatory for removal of heritage trees.
Goal OSC2: Provide parks and recreation facilities.	CONSISTENT. The Project would provide an approximately 2-acre privately owned, but publicly accessible, open space area within the Project site. The final design of the open space would be subject to review and approval by the City. In addition, the Project would include a new 1-acre terraced garden, primarily for employee use, between Buildings 20 and 21, and useable private open spaces on the roofs of Buildings 21 and 22, which would include landscaped areas and walking paths.
Policy OSC3.1: Prehistoric or Historic Cultural Resources Investigation and Preservation. Preserve historical and cultural resources to the maximum extent practical.	CONSISTENT. Although no identified prehistoric or historic cultural resources are present, ground disturbance would occur and could uncover unknown resources. Implementation of Mitigation Measures CR-2.1, CR-3.1, and CR-4.1 would reduce impacts and ensure preservation of any cultural resources found during Project construction.
Policy OSC3.2: Prehistoric or Historic Resources Protection. Require significant historic or prehistoric artifacts to be examined by a qualified consulting archaeologist or historian for appropriate protection and preservation, and to ensure compliance with local, state, and federal regulations.	CONSISTENT. Although no identified prehistoric or historic cultural resources are present, ground disturbance would occur and could uncover unknown resources. Implementation of Mitigation Measures CR-2.1, CR-3.1, and CR-4.1 would require monitoring, documentation, and potential recovery by a qualified professional archaeologist to reduce impacts and ensure preservation of any prehistoric or historic resources found during Project construction.
Policy OSC3.3: Archaeological or Paleontological Resources Protection. Protect prehistoric or historic cultural resources either on site or through appropriate documentation as a condition of removal. Require that when a development project had sufficient flexibility, avoidance and preservation of the resource shall be the primary mitigation measure, unless the City identifies superior mitigation. If resources are documented, undertake coordination with descendants and/or stakeholder groups, as warranted.	CONSISTENT. Although no identified prehistoric or historic cultural resources are present, ground disturbance would occur and could uncover unknown resources. Implementation of Mitigation Measures CR-2.1, CR-3.1, and CR-4.1 would require monitoring, documentation, and potential recovery by a qualified professional archaeologist to reduce impacts and ensure preservation of any prehistoric or historic resources found during Project construction.

General Plan Goal/Policy	Consistency Analysis
Policy OSC3.4: Prehistoric or Historic Cultural Resources Found During Construction. Require that if cultural resources, including archaeological or paleontological resources, are uncovered during grading or other on-site excavation activities, construction shall stop until appropriate mitigation is implemented.	CONSISTENT. Although no identified prehistoric or historic cultural resources are present, ground disturbance would occur and could uncover unknown resources. Implementation of Mitigation Measures CR-2.1, CR-3.1, and CR-4.1 would reduce impacts on archeological and paleontological resources or human remains found during construction.
Policy OCS3.5: Consultation with Native American Tribes. Consult with those Native American tribes with ancestral ties to the Menlo Park city limits regarding General Plan Amendments and land use policy changes.	CONSISTENT. The Native American consultation process was initiated through the Native American Heritage Commission (NAHC) on August 20, 2015. On August 31, 2015, the NAHC indicated that a records search of its files failed to indicate the presence of Native American cultural resources in the immediate Project area. The NAHC provided a list of 10 Native American contacts who might have information pertinent to the Project or have concerns regarding the Project. A letter explaining the Project, along with a map depicting the Project area, was sent to the contacts listed by the NAHC on September 3, 2015. The letters solicited responses from each of the contacts, should they have any questions, comments, or concerns regarding the Project. To date, no responses have been received from any of the Native American contacts regarding the Project. However, Native American correspondence is ongoing and will be updated if responses are received. Appendix 3.7 contains copies of the Native American correspondence, if applicable.
Goal OSC4: Promote sustainability and climate action planning.	CONSISTENT. The Project would promote sustainability and climate action planning through a variety of features, including, but not limited to, a building design that promotes daylight use, energy-efficient lighting and HVAC equipment, onsite renewable energy generation, and water-efficient plumbing fixtures and landscaping. In addition, construction waste would be diverted from landfills, and resource-conserving materials would be given priority. Furthermore, a TDM program that encourages alternative transportation would be implemented.
Policy OSC4.2: Sustainable Building. Promote and/or establish environmentally sustainable building practices or standards in new development that would conserve water and energy, prevent stormwater pollution, reduce landfilled waste, and reduce fossil fuel consumption from transportation and energy activities.	CONSISTENT. Sustainability features to conserve resources and reduce waste would be employed, including, but not limited to, a building form and space layout that promotes daylight use, energy-efficient lighting and HVAC equipment, onsite renewable energy generation, water-efficient plumbing fixtures and landscaping, and a recycled water system. In addition, seasonal wetland areas would be incorporated into the park landscape to provide both habitat and stormwater treatment functions. Construction waste would be diverted from landfills, and resource-conserving materials would be given priority. The proposed TDM program would be implemented to provide alternatives to single-occupancy automobile travel to and from the Project site, thereby reducing fossil fuel consumption.

General Plan Goal/Policy	Consistency Analysis
Policy OSC4.3: Renewable Energy. Promote the installation of renewable energy technology, such as, on residences and businesses through education, social marketing methods, establishing standards and/or providing incentives.	CONSISTENT. The Project proposes to include onsite renewable energy generation, such as photovoltaic panels.
Policy OSC4.4: Vehicles Using Alternative Fuel. Explore the potential for installing infrastructure for vehicles that use alternative fuel, such as electric plug in recharging stations.	CONSISTENT. As part of its sustainability measures, the Project would incorporate parking and charging access for electric vehicles.
Policy OSC4.5: Energy Standards in Residential and Commercial Construction. Encourage projects to achieve a high level of energy conservation exceeding standards set forth in the California Energy Code for Residential and Commercial development.	CONSISTENT. The Project would pursue LEED Gold certification, which requires modeling to prove that the Project exceeds California's Title 24 energy standards by at least 15 percent. The Project would use energy-efficient HVAC equipment, energy-efficient site lighting, building management systems to optimize energy performance, and advanced energy sub-metering.
Policy OSC4.6: Waste Reduction Target. Strive to meet the California State Integrated Waste Management Board per person target of waste generation per person per day through their source reduction, reuse, and recycling programs.	CONSISTENT. According to Assembly Bill 939, all cities and counties in California are required to divert 50 percent of all solid waste, or 6.3 pounds per person per day, from landfill or transformation facilities by January 1, 2000. Operation of the Project would generate approximately 4.8 pounds of solid waste per employee per day.
Policy OSC4.7: Waste Management Collaboration. Continue to support and participate in efforts such as the South Bayside Waste Management Authority, which provides waste reduction, recycling, and solid waste programs and solutions.	CONSISTENT. The Project site is within the South Bayside Waste Management Authority (RethinkWaste) service area. Project waste, similar to other residential and commercial solid waste and recyclable materials within the city, would be collected by Recology San Mateo County and taken to Shoreway Environmental Center, the regional solid waste and recycling facility for the receipt, handling, and transfer of solid waste and recyclables collected from the RethinkWaste service area.
Goal OSC5: Ensure Healthy Air Quality and Water Quality. Enhance and preserve air quality in accord with State and regional standards, and encourage the coordination of total water quality management including both supply and wastewater treatment.	CONSISTENT. The Project's compliance with air and water quality standards as well as policies established by the Bay Area Air Quality Management District (BAAQMD), San Mateo Countywide Water Pollution Prevention Program (SMCWPPP), and City of Menlo Park Climate Action Plan are evaluated in this Draft EIR. Air quality impacts are discussed in Section 3.4, *Air Quality*, of this document, and water quality issues are discussed in Section 3.10, *Hydrology and Water Quality*. All Project construction activities and operations would be subject to existing regulatory requirements.

General Plan Goal/Policy	Consistency Analysis
Policy OSC5.1: Air and Water Quality Standards. Continue to apply standards and policies established by the Bay Area Air Quality Management District (BAAQMD), San Mateo Countywide Water Pollution Prevention Program (SMCWPPP), and City of Menlo Park Climate Action Plan through the California Environmental Quality Act (CEQA) process and other means as applicable.	CONSISTENT. The Project's compliance with air and water quality standards as well as policies established by the BAAQMD, SMCWPPP, and City of Menlo Park Climate Action Plan are evaluated in this Draft EIR. Air quality impacts are discussed in Section 3.4, *Air Quality*, of this document, and water quality issues are discussed in Section 3.10, *Hydrology and Water Quality*. All Project construction activities and operations would be subject to existing regulatory requirements.
Policy OSC5.2: Development in Industrial Areas. Evaluate development projects in industrial areas for impacts to air and water resources in relation to truck traffic, hazardous materials use and production-level manufacturing per the California Environmental Quality Act (CEQA) and require measures to mitigate potential impacts to less than significant levels.	CONSISTENT. The Project's potential air quality and water quality impacts related to traffic and hazardous materials are evaluated in this Draft EIR. Air quality impacts are discussed in Section 3.4 of this document, and hazardous materials impacts are discussed in Section 3.11. Where applicable and feasible, Sections 3.4 (*Air Quality*) and 3.11 (*Hazards and Hazardous Materials*) include mitigation measures to reduce potential air quality and hazardous materials impacts.
Policy OSC5.3: Water Conservation. Encourage water-conserving practices in businesses, homes and institutions.	CONSISTENT. The Project would utilize water-efficient plumbing fixtures, and Project site landscaping would be developed in compliance with the City's Water-Efficient Landscape Ordinance. In addition, the Project proposes to use, subject to approval of the City Building Official, a recycled water system for landscape irrigation and toilets/urinals, thereby minimizing water usage.
Noise Element, adopted May 21, 2013	
Goal N1: Achieve acceptable noise levels.	CONSISTENT. Through implementation of Mitigation Measure NOI-1.1, which would implement construction noise control measures in compliance with local and regional noise and land use compatibility standards, the Project would achieve acceptable noise levels during the construction periods. Operation of the Project would consist of typical office operations and would not generate noise in excess of regulatory standards. However, traffic as a result of the Project could result in noise increases at certain roadway segments.
Policy N1.1: Compliance with Noise Standards. Consider the compatibility of proposed land uses with the noise environment when preparing or revising community and/or specific plans. Require new projects to comply with the noise standards of local, regional, and building code regulations, including but not limited to the City's Municipal Code, Title 24 of the California Code of Regulations, and subdivision and zoning codes.	CONSISTENT. The Project would temporarily generate noise associated with heavy equipment during the approximately 18-month Phase 1 and 23-month Phase 2 construction periods. However, Mitigation Measure NOI-1.1, which would implement noise control measures, would decrease construction noise impacts to less than significant. This mitigation measure would be in compliance with local and regional noise and land use compatibility standards. Operation of the Project would consist of typical office operations and would not generate ground-borne vibration or noise in excess of regulatory standards.

General Plan Goal/Policy	Consistency Analysis
Policy N1.2: Land Use Compatibility Noise Standards. Protect people in new development from excessive noise by applying the City's Land Use Compatibility Noise Standards for New Development to the siting and required mitigation for new uses in existing noise environments.	CONSISTENT. The Project would temporarily generate noise associated with heavy equipment during the construction periods. However, Mitigation Measure NOI-1.1, which would implement noise control measures, would decrease construction noise impacts, in compliance with local and regional noise and land use compatibility standards. Operation of the Project would consist of typical office operations and would not generate noise in excess of the City's land use compatibility noise standards.
Policy N1.4: Noise Sensitive Uses. Protect existing residential neighborhoods and noise sensitive uses from unacceptable noise levels and vibration impacts. Noise sensitive uses include, but are not limited to, hospitals, schools, religious facilities, convalescent homes and businesses with highly sensitive equipment. Discourage the siting of noise-sensitive uses in areas in excess of 65 dBA CNEL without appropriate mitigation and locate noise sensitive uses away from noise sources unless mitigation measures are included in development plans.	CONSISTENT. The Project would temporarily generate noise associated with heavy equipment during construction periods. However, Mitigation Measure NOI-1.1, which would implement noise control measures, would decrease construction noise impacts on nearby noise sensitive uses in compliance with local and regional noise and land use compatibility standards. Operation of the Project would consist of typical office operations and would not generate noise in excess of 60 A-weighted decibels, equivalent sound level (dBA L_{eq}), at nearby residences and 70 dBA L_{eq} at nearby churches or schools.
Policy N1.6: Noise Reduction Measures. Encourage the use of construction methods, state-of-the-art noise abating materials and technology and creative site design including, but not limited to, open space, earthen berms, parking, accessory buildings, and landscaping to buffer new and existing development from noise and to reduce potential conflicts between ambient noise levels and noise-sensitive land uses. Use sound walls only when other methods are not practical or when recommended by an acoustical expert.	CONSISTENT. The Project would temporarily generate noise associated with heavy equipment during construction periods. However, Mitigation Measure NOI-1.1, which would implement noise control measures, would decrease construction noise impacts on nearby noise sensitive uses. Although the Project would incorporate open space, landscaping, and parking areas between the proposed buildings and on the site perimeter, Project operation would consist of typical office operations and would not generate noise in excess of regulatory standards or at levels that would cause conflicts with nearby noise-sensitive land uses.
Policy N1.7: Noise and Vibration from New Non-Residential Development. Design non-residential development to minimize noise impacts on nearby uses. Where vibration impacts may occur, reduce impacts on residences and businesses through the use of setbacks and/or structural design features that reduce vibration to levels at or below the guidelines of the Federal Transit Administration near rail lines and industrial uses.	CONSISTENT. The Project would temporarily generate noise and vibration associated with heavy equipment during construction activities. However, Mitigation Measure NOI-1.1, which would implement noise control measures, would decrease construction noise impacts to less than significant. This mitigation measure would be in compliance with noise and land use compatibility standards. The Project would not generate ground-borne vibration levels in excess of the criteria established by the Federal Transit Administration at nearby sensitive land uses.

General Plan Goal/Policy	Consistency Analysis
Policy N1.8: Potential Annoying or Harmful Noise. Preclude the generation of annoying or harmful noise on stationary noise sources, such as construction and property maintenance activity and mechanical equipment.	CONSISTENT. The Project would temporarily generate noise associated with heavy equipment during construction activities. Mitigation Measure NOI-1.1, which would implement noise control measures, would decrease construction noise impacts to less than significant. This mitigation measure would be in compliance with noise and land use compatibility standards. Project operation would consist of typical office operations and would not generate potentially harmful or annoying noise.
Safety Element, adopted May 21, 2013	
Policy S1.1: Location of Future Development. Permit development only in those areas where potential danger to the health, safety and welfare of the residents of the community can be adequately mitigated.	CONSISTENT. The Project site is subject to land use, operational, and maintenance restrictions because of the presence of subsurface hazardous materials, including contaminated groundwater; residual soil contamination; and potential vapor intrusion from volatile organic compounds (VOCs) in soil gas, all of which could pose unacceptable hazards to future users of the Project site and/or the environment. Existing site restrictions included in the Land Use Covenant (LUC) with the Department of Toxic Substances Control (DTSC) would require DTSC approval of any soil-disturbing activities. In addition, Mitigation Measures HAZ-2.1, HAZ-2.2, and HAZ-2.3 would require soil and groundwater management, additional site investigations, and remedial actions, as necessary, to reduce risks associated with these conditions.
Policy S1.5: New Habitable Structures. Require that all new habitable structures incorporate adequate hazard mitigation measures to reduce identified risks from natural and human-caused disasters.	CONSISTENT. The Project would comply with all hazard-reducing regulatory requirements, including those intended to reduce risks associated with site contamination, geologic and seismic hazards, and flooding. The Project would, as required, be designed and built in compliance with the CBC, Chapter 16 of which deals with structural design requirements governing seismically resistant construction, and local amendments adopted by the City of Menlo Park. In addition, Mitigation Measures HAZ-2.1, HAZ-2.2, and HAZ-2.3 would require soil and groundwater management, additional site investigations, and remedial actions, as necessary, all of which would be subject to DTSC approval, to reduce risks associated with these conditions.
Policy S1.7: Hazard Reduction. Continue to require new development to reduce the seismic vulnerability of buildings and susceptibility to other hazards through enforcement of the California Building Standards Code and other programs.	CONSISTENT. The Project would, as required, be designed and built in compliance with the CBC, Chapter 16, which deals with structural design requirements governing seismically resistant construction, and local amendments adopted by the City of Menlo Park.

General Plan Goal/Policy	Consistency Analysis
Policy S1.10: Safety Review of Development Projects. Continue to require hazard mitigation, crime prevention, fire prevention and adequate access for emergency vehicles in new development.	CONSISTENT. The Project would comply with all hazard-reducing regulatory requirements, including those intended to reduce risks associated with site contamination, geologic and seismic hazards, and flooding. The Project is not expected to increase demand for MPPD services; it would most likely be served by private security for basic monitoring of the site and buildings, thereby supplementing MPPD's police patrol services. As part of the City's review process, the MPPD would review Project plans and safety features to ensure that safety standards are met; however, MPPD could require additional safety and security measures. The Project would be required to comply with all applicable Menlo Park Fire Protection District (MPFPD) codes and regulations and meet MPFPD standards related to fire hydrants, the design of driveway turnaround and access points (to accommodate fire and emergency response equipment), and fire sprinkler protection as well as other fire code requirements.
Policy S1.13 Geotechnical Studies. Continue to require site-specific geologic and geotechnical studies for land development or construction in areas of potential land instability as shown on the State and/or local geologic hazard maps or identified through other means.	CONSISTENT. Site-specific geotechnical studies were conducted at the Project site as part of the Project design and environmental review processes. A geotechnical feasibility investigation was prepared for existing Building 23, and a geotechnical investigation was prepared for existing Buildings 307–309.
Policy S1.14 Potential Land Instability. Prohibit development in areas of potential land instability identified on State and/or local geologic hazard maps, or identified through other means, unless a geologic investigation demonstrates hazards can be mitigated to an acceptable level as defined by the State of California.	CONSISTENT. The Project would adhere to the soil and foundation support parameters of the City Building Code, as required by City and state law, ensuring that structures and their associated trenches and foundations would have the maximum practicable protection from soil failures available under static or dynamic conditions.
Policy S1.18 Potential Hazardous Materials Conditions Investigation. Continue to require developers to conduct an investigation of soils, groundwater and buildings affected by hazardous-material potentially released from prior land uses in areas historically used for commercial or industrial uses, and to identify and implement mitigation measures to avoid adversely affecting the environment or the health and safety of residents or new uses.	CONSISTENT. The Project site is subject to land use, operational, and maintenance restrictions because of the presence of subsurface hazardous materials from prior land uses; it carries existing restrictions associated with these materials. The Project would include implementation of Mitigation Measures HAZ-2.1, HAZ-2.2, and HAZ-2.3, which require soil and groundwater management, additional site investigations, and remedial actions, as necessary.
Policy S1.26 Erosion and Sediment Control. Continue to require the use of best management practices for erosion and sediment control measures with proposed development in compliance with applicable regional regulations.	CONSISTENT. Construction and operation of the Project would incorporate best management practices, including soil stabilization measures, in accordance with Construction General Permit post-construction requirements and municipal separate stormwater sewer system (MS4) design requirements to reduce erosion and sediment transport.

General Plan Goal/Policy	Consistency Analysis
Policy S1.27 Regional Water Quality Control Board (RWQCB) Requirements. Enforce stormwater pollution prevention practices and appropriate watershed management plans in the RWQCB general National Pollutant Discharge Elimination System requirements, the San Mateo County Water Pollution Prevention Program and the City's Stormwater Management Program. Revise, as necessary, City plans so they integrate water quality and watershed protection with water supply, flood control, habitat protection, groundwater recharge, and other sustainable development principles and policies.	CONSISTENT. The Project Sponsor would comply with the requirements of the National Pollutant Discharge Elimination System Construction General Permit and the City's stormwater requirements (e.g., the Santa Mateo County Grading Ordinance). In addition, Project operations would be subject to the requirements of the SMCWPPP and the associated San Francisco Bay MS4 Permit, SMCWPPP C.3 Stormwater Technical Guidance, and Construction General Permit post-construction requirements as well as other related stormwater requirements from the City or county.
Policy S1.28 Sea Level Rise. Consider sea level rise in siting new facilities or residences within potentially affected areas.	CONSISTENT. According to the National Oceanic and Atmospheric Administration, the Project site could be subject to sea-level rise (SLR) (full inundation) by 2100 (i.e., 1.38 to 5.48 feet by 2100). All newly constructed buildings would be elevated, which would help to prevent the potential flooding effects of SLR on the buildings themselves. The Project would involve the placement of podiums over proposed parking to elevate finished floor elevations and provide protection from the 100-year base flood elevation (BFE) plus a minimum of 16 inches of SLR by 2050. Mitigation Measures WQ-5.1 and WQ-5.2 would also minimize the effects of flooding at the Project site.
Policy S1.29 Fire Equipment and Personnel Access. Require adequate access and clearance, to the maximum extent practical, for fire equipment, fire suppression personnel and evacuation for high occupancy structures in coordination with the Menlo Park Fire Protection District.	CONSISTENT. The Project would comply with all applicable MPFPD codes and regulations and meet MPFPD standards, including those related to the design of driveway turnaround and access points (to accommodate fire equipment), fire apparatus access roads, traffic calming devices, photovoltaic system installation, automatic fire sprinkler systems, fire alarm systems and components, and building access in the event of an emergency.
Policy S1.38 Emergency Vehicle Access. Require that all private roads be designed to allow access for emergency vehicles as a prerequisite to the granting of permits and approvals for construction.	CONSISTENT. The Project would meet MPFPD standards related to emergency vehicle access. Emergency vehicle and fire truck access would be provided along the outside perimeter of the office buildings. Each proposed building would be accessible to emergency vehicles via the perimeter roadway. Along Chilco Street, emergency vehicles would access the site from the existing stop sign–controlled driveway. In addition, emergency vehicles would access the site from the new signalized intersection on SR 84. The emergency routes for the Project would connect with the existing emergency vehicle access routes that serve Building 20.

General Plan Goal/Policy	Consistency Analysis
Policy S1.30: Coordination with the Menlo Park Fire District. Encourage City-Fire District coordination in the planning process and require all development applications to be reviewed and approved by the Menlo Park Fire Protection District prior to project approval.	CONSISTENT. As part of the City's review process, the MPFPD would review Project plans. The Project would be required to comply with all applicable MPFPD codes and regulations and meet MPFPD standards related to fire hydrants, the design of driveway turnaround and access points (to accommodate fire and emergency response equipment), and fire sprinkler protection as well as other fire code requirements.
Housing Element, adopted May 21, 2013	
Policy H1.7: Local Funding for Affordable Housing. Seek ways to reduce housing costs for lower-income workers and people with special needs by developing ongoing local funding resources and continuing to utilize other local, state, and federal assistance to the fullest extent possible. The City will also maintain the Below Market Rate (BMR) housing program requirements for residential and nonresidential developments.	CONSISTENT. The Project would adhere to the BMR program requirements for nonresidential developments.
Policy H4.10: Inclusionary Housing Approach. Require residential developments involving five or more units to provide units or an in-lieu fee equivalent for very low-, low-, and moderate-income housing. The units provided through this policy are intended for permanent occupancy and must be deed restricted, including, but not limited to, single-family housing, multi-family housing, condominiums, townhouses, or land subdivisions. In addition, the City will require larger nonresidential developments, as job generators, to participate in addressing housing needs in the community through the City's commercial in-lieu fee requirements.	CONSISTENT. The Project Sponsor would address housing needs in the community through the City's commercial in-lieu fee requirements.

Table 3.1-3. Comparison of Project to Draft ConnectMenlo General Plan Goals and Policies

Draft ConnectMenlo Goal/Policy	Consistency Analysis
Land Use Element	
Goal LU-1: Promote the orderly development of Menlo Park and its surrounding area.	CONSISTENT. The Project would involve construction and occupancy of new buildings on a previously developed site within Menlo Park.
Policy LU-2.6: Underground Utilities. Require all electric and communications lines serving new development to be placed underground.	CONSISTENT. Any new electric and communication lines proposed at the Project site would be placed underground.
Goal LU-4: Promote the development and retention of business uses that provide goods or services needed by the community that generate benefits to the City, and avoid or minimize potential environmental and traffic impacts.	CONSISTENT. The Project would provide goods or services to the City. As evaluated throughout this Draft EIR, the Project would minimize potential environmental and traffic impacts through Project components or mitigation measures.
Policy LU-4.1: Priority Commercial Development. Encourage emerging technology and entrepreneurship, and prioritize commercial development that provides fiscal benefit to the City, local job opportunities, and/or goods or services needed by the community.	CONSISTENT. The Project site would be occupied by commercial development that would provide local job opportunities.
Policy LU-4.2: Hotel Location. Allow hotel uses at suitable locations in mixed-use and nonresidential zoning districts.	CONSISTENT. The Project would include a 200-room, limited-service hotel with approximately 174,800 gsf of space in the northwestern portion of the Project site. Although hotel uses are specifically not permitted in M-2 zoning districts, the Project Sponsor proposes to amend the Zoning Ordinance text to accommodate the proposed hotel. Such an amendment would further ensure compatibility of the Project with this policy of the General Plan. In addition, the Project site has been identified in the ConnectMenlo General Plan Update as a proposed location for a hotel.
Policy LU-4.3: Mixed Use and Nonresidential Development. Limit parking, traffic, and other impacts of mixed-use and nonresidential development on adjacent uses, and promote high-quality architectural design and effective transportation options.	CONSISTENT. The Project would provide approximately 3,533 parking spaces for the office buildings, the hotel, and Building 23. Further, the Project would include a TDM program that would encourage employees to use alternate modes of transportation, thereby reducing the number of vehicles traveling to/from the Project site. Building façade articulations and architectural designs have not yet been developed, but each proposed building would offer a variety of design styles and articulations.

Draft ConnectMenlo Goal/Policy	Consistency Analysis
Policy LU-4.4: Community Amenities. Require mixed-use and nonresidential development of a certain minimum scale to support and contribute to programs that benefit the community and the City, including education, transit, transportation infrastructure, sustainability, neighborhood-serving amenities, child care, housing, job training, and meaningful employment for Menlo Park youth and adults.	CONSISTENT. The Project would benefit the community through the provision of open space, connections between nearby amenities, increased transit use, and sustainability features. The Project would include a publicly accessible open space area. The Project would include onsite bicycle storage facilities and a TDM program that would encourage employees to use alternate modes of transportation, thereby reducing the number of vehicles traveling to/from the Project site. A wide range of sustainability features would be employed, including, but not limited to, a building form and space layout that would promote daylight use, energy-efficient lighting and HVAC equipment, onsite renewable energy generation, and water-efficient plumbing fixtures and landscaping. In addition, construction waste would be diverted from landfills, and resource-conserving materials would be given priority.
Policy LU-6.2: Open Space in New Development. Require new nonresidential, mixed use, and multiple dwelling development of a certain minimum scale to provide ample open space in the form of plazas, greens, community gardens, and parks whose frequent use is encouraged through thoughtful placement and design.	CONSISTENT. The Project would include a publicly accessible open space area. The area is expected to include a public plaza and event space with a mix of paving, seating, and shaded landscape areas; a bicycle/pedestrian path, which would be connected to the proposed multi-use bicycle/pedestrian bridge across SR 84; and a series of small paths and seating areas within a naturalistic setting that would also provide stormwater treatment.
Policy LU-6.3: Public Open Space Design. Promote public open space design that encourages active and passive uses, and use during daytime and appropriate nighttime hours to improve quality of life.	CONSISTENT. A publicly accessible open space area would be provided between Buildings 21 and 22. The area is expected to include a public plaza and event space with a mix of paving, seating, and shaded landscape areas; a bicycle/pedestrian path, which would be connected to the proposed multi-use bicycle/pedestrian bridge across SR 84; and a series of small paths and seating areas within a naturalistic setting that would also provide stormwater treatment.
Policy LU-6.6: Public Bay Access. Protect and support public access to the Bay for the scenic enjoyment of open water, sloughs, and marshes, including restoration efforts, and completion of the Bay Trail.	CONSISTENT. The Project would include a publicly accessible open space area between the proposed Buildings 21 and 22, which would provide a safe pedestrian route to the Bay and the Bay Trail. The Project's site and landscape improvements include bicycle and pedestrian paths that would improve biking and pedestrian circulation and provide public access and connectivity between the Belle Haven community and the Bay Trail.
Policy LU-6.8: Landscaping in Development. Encourage extensive and appropriate landscaping in public and private development to maintain the City's tree canopy and to promote sustainability and healthy living, particularly through increased trees and water-efficient landscaping in large parking areas and in the public right-of-way.	CONSISTENT. The Project site would include landscaping on both the perimeter and the interior, including plazas; an approximately 2-acre, publicly accessible open space area; and bicycle and pedestrian paths throughout the site. The landscaping would include shade trees in parking areas and stormwater gardens to accommodate runoff.

Draft ConnectMenlo Goal/Policy	Consistency Analysis
Policy LU-6.11: Baylands Preservation. Allow development near the Bay only in already developed areas.	CONSISTENT. The Project site is near the Bay (approximately 500 feet south), across Bayfront Expressway. Currently, 10 buildings are located at the Project site, with industrial, warehouse, office, and R&D uses totaling approximately 1.02 million gsf (including Building 23). The existing buildings, which cover approximately 46 percent of the Project site, range in height from one level to three partial levels. The buildings were generally built in the late 1960s as part of an industrial and manufacturing facility. In addition, a substation is located on the west side of Building 23. Therefore, although the Project site is near the Bay, it is already developed.
Goal LU-7: Promote the implementation and maintenance of sustainable development, facilities and services to meet the needs of Menlo Park's residents, businesses, workers, and visitors.	CONSISTENT. Building 21 would pursue LEED Gold certification. To conserve resources and reduce waste, sustainability features would be employed, including, but not limited to, a building form and space layout that would promote daylight use, energy-efficient lighting and HVAC equipment, onsite renewable energy generation, and water-efficient plumbing fixtures and landscaping. In addition, construction waste would be diverted from landfills, and resource-conserving materials would be given priority. The Project's sustainability features would include water-efficient plumbing fixtures to reduce water consumption by 40 percent compared with the LEED baseline. In addition, the Project would include a water-efficient landscape and irrigation design to reduce irrigation water consumption by 50 percent compared with the LEED baseline and minimize the use of potable water. The Project could use a recycled water system for landscape irrigation and toilets/urinals, thereby further minimizing water usage.
Policy LU-7.1: Sustainability. Promote sustainable site planning, development, landscaping, and operational practices that conserve resources and minimize waste.	CONSISTENT. The Project would incorporate sustainability features to conserve resources and reduce waste (e.g., a building form and space layout that would promote daylight use, energy-efficient lighting and HVAC equipment, onsite renewable energy generation, water-efficient plumbing fixtures and landscaping). In addition, construction waste would be diverted from landfills, and resource-conserving materials would be given priority.
Policy LU-7.5: Reclaimed Water Use. Implement use of adequately treated "reclaimed" water (recycled/nonpotable water sources such as, graywater, blackwater, rainwater, stormwater, foundation drainage, etc.) through dual plumbing systems for outdoor and indoor uses, as feasible.	CONSISTENT. The Project could use a recycled water system for landscape irrigation and toilets/urinals. All plumbing fixtures would feed into the wastewater system from Buildings 21 and 22, including toilets/urinals, kitchen sinks, drinking fountains, and other water fixtures. Wastewater from kitchens or other wastewater that may be high in fats, oils, and greases would be routed through a grease trap prior to reaching the wastewater treatment system.

Draft ConnectMenlo Goal/Policy	Consistency Analysis
Policy LU-7.7: Hazards. Avoid development in areas with seismic, flood, fire and other hazards to life or property when potential impacts cannot be mitigated.	CONSISTENT. Project development would involve construction and occupancy of new buildings on a site with seismic hazards, the majority of which is within the FEMA 100-year floodplain and subject to tidal flooding from the Bay. Adherence to federal, state, and local laws would reduce the effects of natural hazards. The Project would comply with all hazard-reducing regulatory requirements, including those intended to reduce risks associated with site contamination, geologic and seismic hazards, and flooding.
Policy LU-7.8: Cultural Resource Preservation. Promote preservation of buildings, objects, and sites with historic and/or cultural significance.	CONSISTENT. The Project would include demolition of Buildings 301–306; however, these buildings are not considered historic. Ground disturbance would occur; however, implementation of Mitigation Measures CR-2.1, CR-3.1, and CR-4.1 would reduce impacts on archeological and paleontological resources or human remains.
Policy LU-7.9: Green Building. Support sustainability and green building best practices through the orientation, design, and placement of buildings and facilities to optimize their energy efficiency in preparation of State zero-net energy requirements for residential construction in 2020 and commercial construction in 2030.	CONSISTENT. Project sustainability features to conserve resources and reduce waste would be employed, including, but not limited to, a building form and space layout that would promote daylight use, energy-efficient lighting and HVAC equipment, onsite renewable energy generation, and water-efficient plumbing fixtures and landscaping. In addition, construction waste would be diverted from landfills, and resource-conserving materials would be given priority.
Program LU-7.A.: Green Building Operation and Maintenance. Employ green building and operation and maintenance best practices, including increased energy efficiency, use of renewable energy and reclaimed water, and install drought-tolerant landscaping for all projects.	CONSISTENT. Building 21 would pursue LEED Gold certification. Sustainability features to conserve resources and reduce waste would be employed, including, but not limited to, a building form and space layout that would promote daylight use, energy-efficient lighting and HVAC equipment, onsite renewable energy generation, and water-efficient plumbing fixtures and landscaping. In addition, construction waste would be diverted from landfills, and resource-conserving materials would be given priority. The Project's sustainability features would include water-efficient plumbing fixtures to reduce water consumption by 40 percent compared with the LEED baseline. In addition, the Project would include a water-efficient landscape and irrigation design to reduce irrigation water consumption by 50 percent compared with the LEED baseline and minimize the use of potable water. The Project could use a recycled water system for landscape irrigation and toilets/urinals, thereby further minimizing water usage.
Circulation and Transportation Element	

Draft ConnectMenlo Goal/Policy	Consistency Analysis
Policy CIRC-1.8: Pedestrian Safety. Maintain and create a connected network of safe sidewalks and walkways within the public right of way ensure that appropriate facilities, traffic control, and street lighting are provided for pedestrian safety and convenience, including for sensitive populations.	CONSISTENT. A proposed multi-use bicycle/pedestrian bridge over Bayfront Expressway would allow public access to the Bay Trail and Bedwell Bayfront Park from the Project site and the Belle Haven neighborhood. Frontage improvements, including bicycle and pedestrian improvements, along Chilco Street are being implemented by the Project Sponsor as a separate project. In addition, Mitigation Measure TRA-3.2 would provide multi-modal improvements to improve mobility options (e.g., walking, bicycling, transit), consistent with the City's "complete streets" goals, which would help to offset the effect of daily traffic generated by the Project. In particular, such measures could include pedestrian enhancements across Willow Road at Hamilton Drive, Ivy Drive, and Newbridge Street as well as at other affected study segment locations.
Goal CIRC-2: Increase accessibility for and use of streets by pedestrians, bicyclists, and transit riders.	CONSISTENT. The Project would provide pedestrian connections to immediately adjacent sidewalks and a proposed multi-use bicycle/pedestrian bridge over Bayfront Expressway. Within the Project site, the Project Sponsor has identified bicycle, pedestrian, and transit routes within the Project site. Furthermore, the Project TDM program would promote increased bicycle, pedestrian, and transit use.
Policy CIRC-2.11: Design of New Development. Require new development to incorporate design that prioritizes safe pedestrian and bicycle travel and accommodates senior citizens, people with mobility challenges, and children.	CONSISTENT. The Project design features bicycle and pedestrian accessibility and connectivity, both within the Project site and between nearby areas, including the Belle Haven neighborhood and the Bay Trail. Frontage improvements, including bicycle and pedestrian improvements, along Chilco Street are being implemented by the Project Sponsor as a separate project.
Policy CIRC-2.14: Impacts of New Development. Require new development to mitigate its impacts on the safety (e.g., collision rates) and efficiency (e.g., vehicle miles traveled (VMT) per capita) of the circulation system. New development should minimize cut-through and high-speed vehicle traffic on residential streets; minimize the number of vehicle trips; provide appropriate bicycle, pedestrian, and transit connections, amenities and improvements in proportion with the scale of proposed projects; and facilitate appropriate or adequate response times and access for emergency vehicles.	CONSISTENT. The Project would include multi-use bicycle/pedestrian pathways and a bicycle/pedestrian corridor that would run north–south through the middle of the site, which would connect the proposed office buildings to the existing Building 20 east of the Project site and Facebook Buildings 10–19 north of Bayfront Expressway. The Project TDM program would promote bicycle, pedestrian, and transit use as commute alternatives; several amenities and incentives, such as bike shops, lockers, towel service, bicycle pumps, self-repair stations, and loaner bikes, would be part of the TDM program. The TDM program and trip cap would minimize the number of vehicle trips associated with the Project. In addition, the Project would include construction of a new bicycle/pedestrian bridge over Bayfront Expressway to allow public access to the Bay Trail and Bedwell Bayfront Park from the Project site and the Belle Haven neighborhood.
Goal CIRC-3: Increase mobility options to reduce traffic congestion, greenhouse gas emissions, and commute travel time.	CONSISTENT. The Project TDM program would promote bicycle, pedestrian, and transit use as commute alternatives to reduce traffic congestion, GHG emissions, and commute travel time.

Draft ConnectMenlo Goal/Policy	Consistency Analysis
Policy CIRC-3.1: Vehicle-Miles Traveled. Support development and transportation improvements that help reduce per capita vehicle miles traveled.	CONSISTENT. The Project Sponsor is proposing a trip cap to limit the number of daily and peak-hour (a.m. and p.m.) trips to and from the Project site and reduce traffic impacts. It would also implement a TDM program to promote alternatives to private automotive travel, thereby reducing vehicle miles traveled. However, the Project would still add traffic to local roadways, as discussed in Section 3.3, *Transportation/Traffic.*
Policy CIRC-4.1: Global Greenhouse Gas Emissions. Encourage the safer and more widespread use of nearly zero-emission modes, such as walking and biking, and lower emission modes like transit, to reduce greenhouse gas emissions.	CONSISTENT. The Project TDM program would promote the use of alternative modes of transportation, including bicycles, walking, and public transit. In addition, as part of its sustainability measures, the Project would incorporate parking and charging access for electric vehicles.
Policy CIRC-4.2: Local Air Pollution. Promote non-motorized transportation to reduce exposure to local air pollution, thereby reducing risks of respiratory diseases, other chronic illnesses, and premature death.	CONSISTENT. The Project TDM program would promote the use of non-motorized transportation, including bicycles and walking. In addition, as part of its sustainability measures, the Project would incorporate parking and charging access for electric vehicles.
Policy CIRC-5.1: Transit Service and Ridership. Promote improved public transit service and increased transit ridership, especially to employment centers, commercial destinations, schools, and public facilities.	CONSISTENT. There are no public transit stops adjacent to the Project site. However, AC Transit, SamTrans, and the City of Menlo Park Midday Shuttle serve areas near the Project site and connect them to surrounding areas. Furthermore, the Project TDM program would provide subsidized public transit passes and a shuttle service that would connect the Project site to public transit stations.
Policy CIRC-5.7: New Development. Ensure that new nonresidential, mixed-use, and multiple-dwelling residential development provides associated needed transit service, improvements and amenities in proportion with demand attributable to the type and scale of the proposed development.	CONSISTENT. There are no public transit stops adjacent to the Project site. However, AC Transit's DB and DB1 Dumbarton Express routes cross the Dumbarton Bridge, with stops near the Project site on Willow Road. SamTrans provides bus service to the area south of the Project site from Routes 270 and 276 and several shuttle routes, and the City of Menlo Park Midday Shuttle serves the Menlo Park Senior Center, located south of the Dumbarton Rail Corridor, and travels to several retail areas in downtown Menlo Park. Furthermore, the Project TDM program would provide subsidized public transit passes and a shuttle service that would connect the Project site to public transit stations.
Policy CIRC-6.3: Shuttle Service. Encourage increased shuttle service between employment centers and the Downtown Menlo Park Caltrain station.	CONSISTENT. The Project TDM program would provide subsidized public transit passes and shuttle service between the Project site and public transit stations.
Policy CIRC-6.4: Employers and Schools. Encourage employers and schools to promote walking, bicycling, carpooling, shuttles, and transit use.	CONSISTENT. The Project TDM program would encourage employees to use alternate modes of transportation, including walking, bicycling, carpooling, shuttles, and public transit.

Draft ConnectMenlo Goal/Policy	Consistency Analysis
Goal CIRC-7: Utilize innovative strategies to provide efficient and adequate vehicle parking.	CONSISTENT. In addition to onsite vehicle parking, the Project would include a TDM program that would encourage employees to use alternate modes of transportation, thereby reducing the number of vehicles traveling to/from and parking at the Project site.
Policy CIRC-7.1: Parking and New Development. Ensure new development provides appropriate parking ratios, including application of appropriate minimum and/or maximum ratios, unbundling, shared parking, electric car charging, car sharing, and Green Trip Certified strategies to accommodate employees, customers and visitors.	CONSISTENT. The Project would provide approximately 3,533 parking spaces for the office buildings, the hotel, and Building 23. In addition, a conditional development permit would be used to establish the appropriate development standards, including parking standards, for the Project. Further, the Project would include a TDM program that would encourage employees to use alternate modes of transportation, thereby reducing the number of vehicles traveling to/from the Project site.
Policy CIRC-7.2: Off-Street Parking. Ensure both new and existing off-street parking is properly designed and used efficiently through shared parking agreements and, if appropriate, parking in-lieu fees.	CONSISTENT. The Project would provide adequate off-street parking and encourage the use of alternative transportation modes.

3.2 Aesthetics

This section describes the existing aesthetic resources and visual characteristics of the Project site and its immediate vicinity, along with existing plans and policies that are relevant to visual resource issues within the City of Menlo Park. This section also evaluates the effect on existing visual resources associated with implementation of the Project. The evaluation of potential impacts on aesthetic and visual resources due to implementation of the Project is based on a review of photographs, visual simulations, site reconnaissance, and Project data. The specific impacts examined in this section pertain to the Project's potential to change the visual quality and character of the Project area and create new sources of light and glare.

No comments pertaining to aesthetics were received in response to the Notice of Preparation (NOP) (Appendix 1).

Existing Conditions

Regulatory Setting

City of Menlo Park General Plan. The City of Menlo Park General Plan guides development and use of land within the City. Several goals and policies of the general plan apply broadly to aesthetics across the City. The following policies from the Land Use Element of the general plan pertain to the Project.

> *Policy I-G-2:* The community should contain an ample supply of specialized open space in the form of squares, greens, and parks whose frequent use is encouraged through placement and design.
>
> *Policy I-G-7:* Public access to the Bay for the scenic enjoyment of the open water, sloughs, and marshes shall be protected.

The following policies from the Open Space and Conservation Element of the City General Plan pertain to the Project.

> *Policy OSC1.12:* Landscaping and Plazas. Include landscaping and plazas on public and private lands, and well-designed pedestrian and bicycle facilities in areas of intensive non-vehicular activity. Require landscaping for shade, surface runoff, or to obscure parked cars in extensive parking areas.
>
> *Policy OCS1.13*: Yard and Open Space Requirements in New Development. Ensure that required yard and open spaces are provided for as part of new multi-family residential, mixed-use, commercial, and industrial development.
>
> *Policy OCS1.15*: Heritage Trees. Protect Heritage Trees, including during construction activities, through enforcement of the Heritage Tree Ordinance (Chapter 13.24 of the Municipal Code).

ConnectMenlo General Plan Update. The City General Plan (Land Use and Circulation Elements) and M-2 Area Zoning Update, also known as ConnectMenlo, is under way. Although not yet adopted, the following draft goal and policies in ConnectMenlo pertain to the Project and are identified for informational purposes.

> **Goal LU-1:** Promote the orderly development of Menlo Park and its surrounding area.
>
> *Policy LU-6.2:* Open Space in New Development. Require new nonresidential, mixed-use, and multiple-dwelling development of a certain minimum scale to provide ample open space in the form of plazas, greens, community gardens, and parks whose frequent use is encouraged through thoughtful placement and design.

> *Policy LU-6.6:* Public Bay Access. Protect and support public access to the Bay for the scenic enjoyment of open water, sloughs, and marshes, including restoration efforts, and completion of the Bay Trail.
>
> *Policy LU-6.8: Landscaping in Development.* Encourage extensive and appropriate landscaping in public and private development to maintain the City's tree canopy and to promote sustainability and healthy living, particularly through increased trees and water-efficient landscaping in large parking areas and in the public right-of-way.

Menlo Park Municipal Code, Chapter 13.24, Heritage Trees. Chapter 13.24 protects the health and maintenance of heritage trees, which are trees or groups of trees of historical significance, special character, or community benefit. Heritage trees include oak trees that are native to California (Genus *Quercus*) and have a trunk with a circumference of 31.4 inches or more (10 inches in diameter) and all trees other than native oaks that have a trunk with a circumference of 47.1 inches (15 inches in diameter) or more, measured 54 inches above natural grade.

Conditional Development Permit. A Conditional Development Permit (CDP) would be required for the Project. The CDP would be incorporated as part of the Project to define the development standards and create mechanisms for the City of Menlo Park to process any revisions to the Project that might arise over the buildout period. According to Chapter 16.82.060 of the City's Municipal Code, every application for a CDP shall be accompanied by architectural drawings and plot plans showing elevations and locations of proposed buildings, proposed landscaping, parking, and other physical features. The Planning Commission will review these drawings and plans when considering recommending approval of the CDP to the City Council.

Design Guidelines for Signs. The Design Guidelines for Signs[1] provides regulations for the design of signs in residential and nonresidential areas. The stated intent of the guidelines is to

> . . . encourage signage that helps maintain the positive image of the area enjoyed by the residents and businesses of the City. Every Menlo Park business is encouraged to post an attractive sign stating the name of the business. The sign should be at a scale appropriate to the pedestrian and vehicular streetscape and the nature of the business.

All new and modified signs require approval by the Director of Community Development or his/her designee. At this time, no plans for signage have been submitted to the City of Menlo Park (City).

Menlo Park Municipal Code, Chapter 16.64, Fences, Walls, Trees, and Hedges. The Zoning Ordinance, Chapter 16.64, includes standards for fences in nonresidential and residential areas. In nonresidential areas, fences, walls, hedges, and similar structures located between the building and front lot line are required to obtain approval from the Community Development Director. The following features must be considered when obtaining approval: structural stability; aesthetics; general health, safety, and welfare of the community; clear lines of sight for vehicular and pedestrian traffic; or other safety factors.

Environmental Setting

Regional Context

The City of Menlo Park is a 19-square-mile municipality situated approximately 30 miles south of San Francisco and about 20 miles north of San José on the San Francisco Peninsula (Peninsula). Menlo Park is one of more than a dozen cities located on the flatter portions of the western margin of San Francisco

[1] City of Menlo Park Community Development Department, Planning Division. 2008. *Design Guidelines for Signs*. August. Available: <http://www.menlopark.org/documentcenter/view/254> Accessed: September 14, 2015.

Bay (Bay), east of the San Andreas Fault Zone. The municipalities of Redwood City generally border Menlo Park to the northwest, Atherton to the west, Palo Alto and Stanford University to the southeast, and East Palo Alto to the east. The Bay is located north of the City.

Urban development within the region is largely concentrated between the Bay and the Interstate 280 (I-280) corridor. In general, the Peninsula is developed with low-density uses within distinct neighborhoods that include commercial, retail, and residential buildings. Larger-scale development, such as office parks and industrial buildings, tends to be located between the Bay and US 101. Some high-rise office, apartment, and hospital buildings are located between US 101 and I-280; however, these buildings are concentrated mainly along the US 101 and El Camino Real corridors.

The Bay and its natural features are key visual components in the eastern and northern portions of the City. The principal topographic feature visible from the City is the Santa Cruz Mountain Range, which runs the length of the Peninsula and forms a barrier between the Pacific Ocean and the Bay. The mountain range is visible from adjacent cities and the majority of Menlo Park, especially north and east of US 101. The portion of the mountain range visible from Menlo Park and the adjacent cities is Skyline Ridge, rising more than 2,400 feet in height and located approximately 15 miles south of the Project site.

Project Vicinity

The visual and urban design character in the vicinity of the Project site is influenced by both the undeveloped areas along the Bay and the mix of developed uses in the area, which include industrial, office, residential, and commercial uses. Tidal mudflats and marshes in the Bay, the Don Edwards San Francisco Bay National Wildlife Refuge (Refuge), and the former salt ponds are located across Bayfront Expressway/SR 84 (Bayfront Expressway), to the north. The existing Facebook Building 20 is adjacent to the Project site to the east. Across Chilco Street and the Dumbarton Rail Corridor, to the south, is a mix of land uses in the Belle Haven neighborhood, such as churches, single-family residences, multi-family residential units, and institutional buildings. Industrial and office uses are also located across Chilco Street, to the west. The Project vicinity is relatively flat, with limited long-range views, due, in part, to the prevalence of buildings that block views of the surroundings. In addition, mature trees and vegetation provide visual separation and screening between existing buildings and along streets. Visual resources to the north, such as the Bay, the hilly open space of Bedwell Bayfront Park (Bayfront Park), salt marshes, the Refuge, and the Dumbarton Bridge, are generally not visible from the majority of vantage points in the vicinity of the Project; these resources are visible only from areas immediately adjacent to Bayfront Expressway. No scenic resources, such as rock outcroppings, cliffs, or knolls, are present in the Project vicinity, although mature trees are present throughout the area.

The contrast between the differing land uses and the natural setting of the Bay to the north provides limited unity and inconsistent visual patterns. Development in the Project area ranges from large office and industrial buildings and warehouses to low-density single-family residential units. Office and industrial buildings are located to the east and west. As mentioned above, to the east is Facebook Building 20, which is approximately 433,555 gross square feet (gsf), with parking located at grade beneath the podium of the office building. Inclusive of all rooftop mechanical screening, Building 20 is approximately 73 feet in height. This building, which opened in 2015, is a visually distinctive feature in the area because of its mass, scale, architectural style, and useable green roof, which contains mature trees and landscaping. The building is highly visible from Bayfront Expressway and the Belle Haven neighborhood. Farther to the northeast, across Bayfront Expressway, are Facebook Buildings

10–19, totaling more than 1 million gsf, with heights ranging from 31.5 feet to 47 feet to the top of the parapet. Buildings 10–19 are significantly set back from Bayfront Expressway by expansive surface parking lots and blocked from view by dense, mature landscaping along the perimeter of the property.

The area to the west, across Chilco Street, is characterized by one- to two-story, mostly tilt-up construction and newer two- to three-story office buildings. The newer buildings are surrounded by manicured landscaped setbacks, tree-lined streets, and surface parking lots. The older industrial uses are often located on large parcels of land with low-rise, boxy buildings that have limited windows and no decorative façades. The buildings are surrounded by paved parking lots and sparse landscaping. Overhead utility lines are visible in most areas, and sidewalks are typical; however, there are no designated bicycle lanes or pedestrian trails in this office/industrial park.

The Belle Haven neighborhood, south of the Project site, generally consists of one- to two-story houses on medium-sized lots, with ample street setbacks, landscaped front yards, mature street trees, and well-maintained sidewalks. The neighborhood also features open space areas, parks, a small commercial retail area adjacent to Willow Road/SR 114, Fire Station 77, and Belle Haven Elementary School. The abandoned Dumbarton Rail Corridor separates the Belle Haven neighborhood from the existing office and industrial uses on the Project site.

Bicycle and pedestrian trails are located in the vicinity of the Project site. The San Francisco Bay Trail (Bay Trail), which travels along Bayfront Expressway, north of the Project site, is a series of existing and planned regional bicycle and hiking trails that are administered by the Association of Bay Area Governments (ABAG). The trails will eventually connect and provide a continuous trail system around the perimeter of the San Francisco and San Pablo Bays, linking 47 cities with 500 miles of trails.[2] This portion of the Bay Trail runs to the north of Bayfront Expressway, west of Buildings 10–19; travels across the Bayfront Expressway/Willow Road intersection; and continues along the southern portion Bayfront Expressway, to the east. This trail is evenly paved but does not include features such as benches or landscaping. In addition, the Bay Conservation and Development Commission (BCDC) Public Shoreline Trail runs perpendicular to Bayfront Expressway (adjacent to Buildings 10–19), providing its users with views of the salt ponds, the marshes, the Refuge, the Bay, and the Santa Cruz Mountain Range as well as the East Bay Hills on clear days. This trail is evenly paved and includes maintained vegetation, benches, and trash receptacles.

Project Site

As described in Chapter 2, *Project Description*, the Project site comprises approximately 58 acres. The Project site is bounded by the six-lane Bayfront Expressway to the north, Building 20 to the east, the Dumbarton Rail Corridor and Belle Haven Neighborhood to the south, and industrial and office uses along Chilco Street to the west. The Project site is currently accessible from one stop sign–controlled driveway on Chilco Street. The Project site is enclosed by a chain link fence and landscaping along the majority of the perimeter.

Visual Character. The Project site consists of 10 buildings, totaling 1.02 million gsf; a surface parking lot for approximately 1,690 vehicles; and landscaped islands with mature trees (Figure 3.2-1). The buildings include industrial, warehouse, office, and research and development (R&D) uses. The existing buildings, which cover approximately 46 percent of the Project site, range from one to three stories in

[2] Association of Bay Area Governments. *Overview*. Available: <http://www.baytrail.org/overview.html>. Accessed: September 14, 2015.

a. Northern portion of Project Site facing southwest.

b. View of Bayfront Expressway from Project Site facing north.

c. View of Building 20 from Project Site facing northeast.

d. View of Belle Haven Neighborhood facing south.

Graphics ... 00296.15 (11-10-2015)

Figure 3.2-1
Existing Conditions at the Project Site
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height. The buildings are generally constructed with steel and concrete frames, with glass curtain walls that are separated horizontally by blue spandrel glass. As depicted in Figure 3.2-1a, the buildings are capped by hipped roofs with red asphalt shingles and wide, thick concrete eaves, which are supported by full-height concrete columns. Building 308–309, which were located on the Project site at the time of the NOP,[3] feature typical roofs; however, the façades do not feature full-height concrete columns, and the walls are sheathed in stucco, with two rows of aluminum-frame windows. Buildings 301–304, 306, and 307 have similar architectural features and design as Buildings 308–309. However, Building 307 also includes a tall manufacturing tower, which is visible throughout the Project site and from offsite locations. The manufacturing building (Building 305) was constructed in a Corporate Modern style, featuring concrete construction with concrete blocks that have been sheathed in cement plaster. Interior courtyards are located between and adjacent to Buildings 301–306 and Buildings 307–309.

The buildings are set back from Bayfront Expressway but are located relatively close to the property line to the south. The perimeter of the Project site is surrounded by a chain link fence with barbed wire and moderate landscape buffers. Wooden poles with utility wires run along the northern and southern perimeters of the Project site, and four lattice-type electrical transmission towers with 60-kilovolt (kV) lines bisect the northern portion of the site.

Onsite Topography. The Project site was previously undeveloped marshland, which was filled prior to development of the Raychem facilities (now TE Connectivity).[4] As such, the Project site is relatively flat, with elevations ranging from 7 to 10.5 feet NAVD.[5]

Vegetation. Vegetation on the Project site includes dense trees and shrubs along the perimeter and entrance roadways, on parking islands, and around and between the buildings. The trees and shrubs along the perimeter of the Project site provide a visual barrier between the site and the exterior land uses, emphasizing the separation between adjacent streets and onsite buildings. However, there are breaks in the landscape buffers along Bayfront Expressway and along certain portions of the southern perimeter, allowing for views to and from the adjacent streets and the Belle Haven neighborhood. The arborist report prepared for the Project site identified 770 trees, consisting of 35 species. Of these, 274 trees qualify as heritage trees under the City's Tree Ordinance.[6] These trees consist almost entirely of nonnative ornamental species, such as blackwood acacia (*Acacia melanoxylon*), Japanese maple (*Acer palmatum*), deodar cedar (*Cedrus deodara*), silver dollar gum (*Eucalyptus polyanthemos*), honey locust (*Gleditsia triacanthos inermis*), Lombardy poplar (*Populus nigra* "Italica"), plum (*Prunus cerasifera*), and holly oak (*Quercus ilex*). Two native (but planted and thus also ornamental) trees on the Project site include coast live oak (*Quercus agrifolia*) and eight white alder (*Alnus rhombifolia*).

Lighting and Shadows. Light sources at the Project site include fixtures on existing buildings and around the paved parking areas. However, because the buildings at the Project site are currently underutilized, the Project site is not brightly illuminated at night. Although the existing buildings include some glass doors and windows, reflective surfaces are minimal due to architectural style and mostly blocked from exterior areas by vegetation. There is no lighting along the adjacent segment of Bayfront Expressway; however, cobra-style street lighting is provided farther to the east, adjacent to Facebook Building 20.

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[3] Prior to the City's consideration of the Project, two buildings (307–309) were slated to be demolished. This will occur as a separate project; therefore, for purposes of this analysis, it is assumed that Buildings 307–309 are existing at the Project site and that they are currently visible from the Project site and surrounding areas.

[4] Cornerstone Earth Group. 2015. *Phase I Environmental Site Assessment, 300 Constitution Drive, Menlo Park, California.* July 28, 2015.

[5] North American Vertical Datum of 1988.

[6] SCBA Tree Consulting. 2015. *Tree Survey at 301–309 Constitution Drive.* December 21, 2015.

As stated above, the existing buildings at the Project site are one to three stories in height. These buildings do not to cast shadows onto adjacent properties, roadways, or open spaces, including the Belle Haven neighborhood to the south. However, the lattice utility towers and power lines, as well as some of the taller vegetation on the Project site, cast shadows on Bayfront Expressway to the north. The shadows are most extreme during the winter solstice when they can reach past Bayfront Expressway to the Bay Trail, the salt ponds/marsh, and Chilco Street.

Views from the Project Site

Because of the relatively flat topography of the Project site and vicinity, as well as the prevalence of existing buildings and vegetation, views from locations at grade are largely restricted. Views at the Project site consist mainly of the existing onsite surface parking lots, vegetated islands, perimeter landscaping, buildings, and power lines. Views of the salt ponds, marshes, the Refuge, and the Bay are largely obstructed from pedestrian-level viewpoints but are available from the northernmost boundary of the Project site. As shown in Figure 3.2-1b, mid-ground views from the Project site consist of Bayfront Expressway, with channelized background views of Bayfront Park and the East Bay Hills.

To the east of the Project site, as depicted in Figure 3.2-1c, exterior views are limited to Building 20. To the south, the offsite views consist of Chilco Street, the inactive Dumbarton Rail Corridor, temporary construction staging areas, and single-family residential units in the Belle Haven neighborhood (Figure 3.2-1d). Therefore, although the existing buildings on the Project site may not be visible from streets in the Belle Haven neighborhood (as discussed in more detail below), the buildings are visible from two-story residences (facing north, toward the Project site). Offsite views to the west are limited to Chilco Street, the mature street trees along Chilco Street, and the industrial and office buildings farther to the west. Background views to the south and west (Figure 3.2-1a) include partially obstructed views of the Santa Cruz Mountain Range.

Public View Corridors

Although portions of the Project site are visible from nearby public vantage points, the Project site is not visible in its entirety from a single ground-level vantage point because of its large size, flat topography, and the surrounding low-rise buildings. However, there are prominent public vantage points with views of the Project site, as discussed below.

BCDC Public Shoreline Trail. The BCDC Public Shoreline Trail, located approximately 0.4 mile northeast of the Project site, runs along the perimeter of Buildings 10–19. Because of the natural Bay features to the north and west and the views of the Santa Cruz Mountain Range to the south, this viewpoint is considered scenic. As depicted in Figure 3.2-2a, the Project site is visible when looking southwest from the BCDC Public Shoreline Trail. From this vantage point, the foreground views feature the trail, the marsh, the Refuge, and the salt ponds. Middleground views include Bayfront Expressway, Building 20, vegetation on the Project site, the rooftops of the existing buildings on the Project site, and the electrical transmission towers and power lines. Farther south and southwest are primarily unobstructed, panoramic background views of the Santa Cruz Mountain Range.

Bay Trail. The Bay Trail runs north of Bayfront Expressway, across from the Project site. As depicted in Figure 3.2-2b, the Bay Trail runs between the salt ponds and marsh to the north and Bayfront Expressway to the south. Because of the natural Bay setting to the north and west and the Santa Cruz Mountain Range to the south, this viewpoint is considered scenic. Depending on the location of the bicyclist/pedestrian on the Bay Trail, existing buildings on the Project site are visible through the

a. BCDC Public Shore Trail facing southwest.

b. Bay Trail facing west.

c. Higher elevation of Bayfront Park facing southeast.

d. Intersection of Chilco Street and Constitution Street facing east.

Graphics ... 00296.15 (11-10-2015)

Figure 3.2-2
Views from Adjacent Areas
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perimeter vegetation to the south. Looking west and east, prominent middleground features within the viewshed include Bayfront Expressway, traffic signal poles, electrical transmission towers, utility poles and wires, and Building 20, with views of the Santa Cruz Mountain Range in the background.

Bayfront Park. Bayfront Park, located approximately 0.5 mile northwest of the Project site, was built on the site of a former landfill, which has been redeveloped into a park. The 160-acre park includes benches, an open playfield, natural wooded areas, and an extensive trail system, most of which is unpaved. Some of the interior trails are steep where they cross the hills in the park. These trails lead to several viewpoints.[7] Therefore, the Project site is visible from Bayfront Park, looking southeast. Because of the expansive views of the Bay setting to the north, east, and west (from higher elevations of Bayfront Park), as well as views of the Santa Cruz Mountain Range and the East Bay Hills, views from Bayfront Park are considered to be scenic.

Foreground views from within the park (looking southeast, toward the Project site) are of grassy vegetation, the marsh and salt ponds, and Bayfront Expressway. Because of the flat topography, background views from lower elevations of the park are limited. However, as depicted in Figure 3.2-2c, middleground and background views are more expansive from the tops of the rolling hills in Bayfront Park. Long-range views from this vantage point include low-rise structures of varying height, electrical transmission towers, mature trees, and vegetation. In the background, the Santa Cruz Mountain Range is visible to the south, and the East Bay Hills are visible to the northeast on clear days. Despite the distance and intervening vegetation, the existing buildings at the Project site are visible from Bayfront Park.

Bayfront Expressway. Bayfront Expressway is a major roadway that links the Dumbarton Bridge to US 101. This six-lane roadway runs in an east–west direction parallel to the northern boundary of the Project site. A concrete median, approximately 3 feet in height, separates the eastbound and westbound lanes. Views of the Project site from passing automobiles traveling in the eastbound or westbound direction are partially blocked by the perimeter vegetation and the center median. However, large breaks in the perimeter vegetation allow for unobstructed views of the onsite surface parking lot and Buildings 301, 303, 304, and 306. In addition, the regional lattice electrical transmission towers and electrical transmission lines along the northern portion of the site are highly visible from Bayfront Expressway. Facing the Project site, the ridges of the Santa Cruz Mountain Range are partially visible between the onsite rooftops and mature trees.

Chilco Street. Chilco Street extends south from Bayfront Expressway through the Belle Haven neighborhood. A portion of Chilco Street wraps around the western and southern edges of the Project site. This segment of the street provides one vehicular lane and one bicycle lane in each direction; however, no there are no sidewalks from Constitution Drive southward. Views of the Project site from Chilco Street vary, depending on viewer position. Looking north from the intersection of Chilco Street and the Dumbarton Rail Corridor, the existing low-laying perimeter vegetation blocks views of the lower portions of the buildings, docking stations, and vehicular circulation areas. However, the rooftops and towers of Buildings 305 and 307 are prominent features in the area, while the rooftop of Building 306 is partially visible farther to the north.

As the motorist continues along the east–west segment of Chilco Street, adjacent to the southern perimeter of the Project site, the perimeter vegetation becomes denser, effectively screening the majority of the Project site. Only the towers of the onsite buildings and the utility poles and wires are

[7] Menlo Park Community Services Department. n.d. Bedwell Bayfront Park. Available: <www.menlopark.org/Facilities/Facility/Details/Bedwell-Bayfront-Park-6>. Accessed: November 5, 2015.

visible from street level. As shown in Figure 3.2-2d, the north–west segment of Chilco Street, west of the Project site, includes a center median with mature street trees. The Project site is currently accessible only from this portion of Chilco Street, at the stop sign–controlled intersection at Constitution Drive. Dense trees, manicured landscaping, and the flat topography block the majority of views of the Project site, although channelized views of Building 23 are provided from this intersection.

Belle Haven Neighborhood and Hamilton Park. As discussed above, the Belle Haven neighborhood contains mainly single-family residential units with mature and well-maintained landscaping. The residential features of the neighborhood are set back from the streets. The neighborhood includes some industrial buildings and open parcels along the Dumbarton Rail Corridor, parks, small commercial retail areas, and institutional buildings, such as Belle Haven Elementary School and Fire Station 77. Because of the flat topography, existing structures, and dense vegetation, there are no pedestrian-level background views of the areas surrounding the Belle Haven neighborhood, such as the Bay and the Santa Cruz Mountain Range.

Because of limited development directly abutting the Dumbarton Rail Corridor and the height of the existing onsite towers, there are channelized views of the Project site from select streets in the Belle Haven neighborhood. The streets that run in a north–south direction in the neighborhood, such as Chilco Street, Modoc Avenue, and Hill Avenue, have channelized view corridors of the perimeter vegetation and buildings on the Project site.

The Project site is also visible from Hamilton Park, which was developed as part of the Hamilton Avenue Housing and Park Project. The 1-acre park is located south of the Project site, along Hamilton Avenue, and includes a playground and grass area.[8] Looking north, the existing tower of Building 307 is visible in the middleground. Two-story single-family residences along Sandlewood Street block the rest of the Project site when viewed from Hamilton Park. There are no background views from this location and views from this location are not considered scenic.

Environmental Impacts

This section describes the impact analysis for the Project related to aesthetics. It discusses the methods that were used to determine the impacts of the Project and lists the thresholds that were used to conclude whether an impact would be significant. Impacts are determined to be no impact (NI), less than significant (LTS), less than significant with mitigation (LTS/M), or significant and unavoidable (SU). Measures to mitigate (i.e., avoid, minimize, rectify, reduce, eliminate, or compensate for) significant impacts accompany each impact discussion, as needed.

Thresholds of Significance

In accordance with Appendix G of the State CEQA Guidelines, the Project would be considered to have a significant effect if it would result in any of the conditions listed below.

- Have a substantial adverse effect on a scenic vista.
- Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings along a scenic highway.

[8] City of Menlo Park. 2005. *Hamilton Avenue Housing and Park Project*. Available: <http://www.menlopark.org/642/Hamilton-Avenue-Housing-Park-Project>. Accessed: September 16, 2015.

- Substantially degrade the existing visual character or quality of the site and its surroundings.
- Create a new source of substantial light or glare that would adversely affect daytime or nighttime views in the area.

Methods for Analysis

Visual conditions within the Project area are defined by a mix of regional roadways and industrial, office, recreational, residential, and commercial development. The interplay of these elements of the visual setting varies from point to point, depending on viewer location. The appearance of the Project site and the surrounding community would change with implementation of the Project, which would result in the construction of new and taller buildings at the Project site.

To illustrate the general appearance of the development proposed at the Project site, photomontages (massing studies) from seven vantage points were prepared, as shown in Figure 3.2-3. A photomontage is a photograph of existing conditions, with an image a proposed development superimposed over the photograph through the use of computer imaging techniques. The photomontages prepared for the Project have been constructed in a photo-realistic fashion to show how the proposed development would look, inclusive of buildings, parking structures, and landscaping. The photomontages are used to illustrate the development that is proposed at the Project site and provide a reasonable representation of the buildings' general massing, scale, and height upon Project completion. Because façade articulations and architectural designs have not yet been developed, these features are not included in the photomontages.

The photomontages, as included in Figures 3.2-4 through 3.2-10, depict views of the Project from the following locations:

- Viewpoint 1: BCDC Public Shoreline Trail facing, southwest
- Viewpoint 2: Bay Trail, facing southeast
- Viewpoint 3: Bayfront Park, facing southeast
- Viewpoint 4: Hill Avenue, facing north
- Viewpoint 5: Modoc Avenue, facing north
- Viewpoint 6: Chilco Street, facing north
- Viewpoint 7: Hamilton Park, facing northwest

Prior to preparing the photomontages, field investigations were conducted to determine those locations that would offer maximum visual exposure of the Project from public vantage points (see Figure 3.2-3). The photomontage locations selected include both "existing" (without Project development) and "proposed" (with Project development) views.

Impacts Not Evaluated in Detail

Impacts on Scenic Resources along a State Scenic Highway. The Project would not damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a State Scenic Highway. Bayfront Expressway is not designated as a State Scenic Highway by the California Department of Transportation. The closest designated scenic highway is I-280, which is more

than 5.5 miles southwest of the Project site.[9] There are no views of the Project site from any portion of I-280. Therefore, although the Project would remove trees, ***no impacts*** related to scenic resources within a State Scenic Highway corridor would occur. Thus, this issue is not discussed any further.

Impacts and Mitigation Measures

Impact AES-1: Impacts on Scenic Vistas. The Project would not substantially affect scenic vistas. (LTS)

Impacts on Scenic Vistas. For the purposes of this analysis, a *scenic vista* is defined as a vantage point with a broad and expansive view of a significant landscape feature (e.g., a mountain range, lake, or coastline) or a significant historic or architectural feature (e.g., a historic tower). A scenic vista is a location with high visual quality, including harmonious and visually interesting views. The City does not have any officially designated scenic views or vistas. However, in the areas surrounding the Project site, the locations that could be considered scenic vistas are the BCDC Public Shoreline Trail, the Bay Trail, and Bayfront Park. These areas offer expansive views of the natural setting of the marsh, Refuge, and salt ponds, with the Bay farther to the north. In addition, viewers who use these facilities can be considered sensitive viewers because they are aware of their surroundings during their recreational activities.

BCDC Public Shoreline Trail (Viewpoint 1). The proposed development at the Project site would increase the total building area by more than 300,000 gsf compared with existing conditions. Therefore, building massing and height would be increased, resulting in greater visibility of the onsite buildings compared with existing conditions. As shown in Viewpoint 1, Figure 3.2-4a, existing views from the BCDC Public Shoreline Trail, facing south, include the marsh, the Refuge, and salt ponds in the foreground; Bayfront Expressway, the utility towers, and the perimeter vegetation of the Project site in the middleground; and the Santa Cruz Mountain Range in the background. The rooftops of the existing onsite buildings are visible between the perimeter vegetation and trees within the parking lots.

As depicted in Figure 3.2-4b, the foreground views would remain the same with implementation of the Project, but the middleground and background views would be altered. The proposed buildings, which would be approximately 75 feet in height, would be visible from the BCDC Public Shoreline Trail due to the increased massing and height. However, because of distance, the buildings would not constitute a significant feature in the area. In addition, the proposed buildings would be similar in height and scale to Building 20, to the east, which would integrate the Project site with the surrounding built environment. Because the proposed development at the Project site would be taller than existing conditions, it would interrupt a portion of the panoramic and mostly unobstructed views of the Santa Cruz Mountain Range, as seen from this trail. Nonetheless, the continuous ridgeline would still be visible over the roofs. Because the ridgeline would still be visible from this viewpoint, this impact would not be significant.

Bay Trail (Viewpoint 2). Figure 3.2-5a shows existing and proposed conditions, as seen from the Bay Trail, looking southwest and toward the Project site. Currently, views from this direction, facing the Project site, encompass Bayfront Expressway, the utility towers and power lines, and perimeter vegetation at the Project site. The salt ponds, Refuge, and Buildings 10–19 are visible in the middleground, facing northeast, with background views of the East Bay Hills. With Project development, as shown in Figure 3.2-5b, the two office buildings and hotel would be visible from the Bay Trail.

[9] California Department of Transportation. 2011. California Scenic Highway Mapping System, San Mateo County. Available: <http://www.dot.ca.gov/hq/LandArch/16_livability/scenic_highways/index.htm>. Accessed: September 9, 2015.

Figure 3.2-3
Map of Viewpoints
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Source: Gehry Partners, LLP, 2016.

Graphics ... 00296.15 (3-22-2016)

Figure 3.2-4
BCDC Public Shoreline Trail facing Southwest (Viewpoint 1)
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Source: Gehry Partners, LLP, 2016.

Graphics ... 00296.15 (3-22-2016)

Figure 3.2-5
Bay Trail facing Southeast (Viewpoint 2)
Facebook Campus Expansion Project Draft EIR

Source: Gehry Partners, LLP, 2016.

Graphics ... 00296.15 (3-22-2016)

Figure 3.2-6
Bayfront Park facing Southeast (Viewpoint 3)
Facebook Campus Expansion Project Draft EIR

Source: Gehry Partners, LLP, 2016.

Graphics ... 00296.15 (3-22-2016)

Figure 3.2-7
Hill Avenue facing North (Viewpoint 4)
Facebook Campus Expansion Project Draft EIR

Source: Gehry Partners, LLP, 2016.

Graphics … 00296.15 (3-22-2016)

Figure 3.2-8
Modoc Avenue facing North (Viewpoint 5)
Facebook Campus Expansion Project Draft EIR

Source: Gehry Partners, LLP, 2016.

Graphics ... 00296.15 (3-22-2016)

Figure 3.2-9
Chilco Street facing North (Viewpoint 6)
Facebook Campus Expansion Project Draft EIR

Although this would represent a significant increase in building mass compared with existing conditions, the buildings would not significantly block views of scenic features, such as the East Bay Hills to the east and the salt ponds to the north. In addition, the proposed multi-use bicycle/pedestrian bridge would span Bayfront Expressway, connecting the Project site with the Bay Trail. The foundation and vertical supports of the bridge would touch down north of the Bay Trail, within the California Department of Transportation (Caltrans) right-of-way. A portion of the aerial walkway could cantilever beyond the Caltrans right-of-way. At a height of about 35 feet, the bridge would represent a new visual feature in the area. However, as depicted in Figure 3.2-5b, the bridge would not block significant views of the Bay or the East Bay Hills from this viewpoint. As the viewer moves along the Bay Trail and toward the bridge, the bridge would appear larger, blocking additional views of the Santa Cruz Mountain Range to the southwest and the East Bay Hills to the east. Regardless, this view would be fleeting as the viewer changes location on the Bay Trail. The bridge would represent a small portion of the overall vista, as viewed from the Bay Trail. In addition, the primary view from this area is away from the Project site and more toward areas to the north where views encompass the panoramic and expansive scenery of the marsh, Refuge, Bay, and East Bay Hills. Therefore, this impact would not be significant.

Bayfront Park (Viewpoint 3). Viewpoint 3 depicts a higher-elevation view from Bayfront Park under existing and proposed conditions. As depicted in Figure 3.2-6a, the Project site is visible from Bayfront Park, but because of distance and intervening vegetation, views of the existing buildings are mainly blocked. The proposed development (Figure 3.2-6b) would appear larger than the existing buildings, as viewed from the higher elevations of Bayfront Park. However, the proposed buildings would be a small element in the overall panoramic view from Bayfront Park. In addition, the ridgeline of the Santa Cruz Mountain Range would remain visible, and views of the East Bay Hills would not be blocked. The proposed buildings at the Project site would be visible from the lower elevations of Bayfront Park; however, the existing and proposed vegetation in the middleground would block portions of the proposed buildings, allowing them to blend with their surroundings. Therefore, the visual impact on Bayfront Park would not be significant.

Overall Impacts on Scenic Vistas. As explained above, the Project would result in additional height, bulk, and massing from the proposed buildings and the multi-use bicycle/pedestrian bridge, which would add a new visual element to the setting. However, the increased development would represent a small portion of the overall vista, as viewed from the BCDC Public Shoreline Trail, Bay Trail, and Bayfront Park. Furthermore, the increased development would not substantially obstruct views of the Santa Cruz Mountain Range. Views from all of the scenic viewpoints generally tend to focus on areas away from the Project site and more toward the north where views encompass the panoramic and expansive scenery of the marsh, Refuge, salt ponds, Bay, and the East Bay Hills. Because Bayfront Expressway and other manmade features, such as large electrical transmission towers and power lines, are located between the salt ponds and the Project site, the views facing south, toward the Project site, are not as significant as those facing north.

It is important to note that the views of the Project site change as the viewer adjusts position. For example, as the viewer approaches the site along the BCDC Public Shoreline Trail or Bay Trail, the proposed development would appear larger and would block a greater amount of the background views. However, the development at the Project site would appear smaller against the backdrop of the mountains as the viewer retreats away from the site. From Viewpoint 1, the ridgeline of the Santa Cruz Mountain Range would be unobstructed, even with the development of the proposed buildings. However, as the viewer travels south along the BCDC Public Shoreline Trail, the buildings would appear larger and could block the ridgeline. Therefore, because the viewer would be in motion along these trails, background views would be different from any given location.

Although the Project would add height, bulk, and massing at the Project site, this change would not result in a significant impact on a scenic vista. As stated above, the scenic vistas from these sensitive viewer locations are mainly facing north, away from the Project site; therefore, the proposed buildings would not significantly alter the scenic vistas. The proposed development at the Project site would have a ***less-than-significant*** impact on scenic vistas from the BCDC Public Shoreline Trail, the Bay Trail, and Bayfront Park.

Impact AES-2: Degradation of Visual Character or Quality. The Project would not substantially degrade the existing visual character or quality of the site and its surroundings. (LTS)

For the purposes of this analysis, a substantial degradation of existing visual character or quality would occur if the Project were to introduce a new visible element that would be inconsistent with the overall quality, scale, and character of surrounding development. The analysis considers the degree of contrast between proposed features and existing features that represent the area's valued aesthetic image, in addition to the degree to which the Project would contribute to the area's aesthetic value. This analysis examines changes in visual character and quality at the site itself as well as how the Project would change the existing visual character and quality, as seen from sensitive areas surrounding the Project site. However, it is important to note that potential impacts resulting from a change in visual character are partially subjective. To some, any development and change in the existing setting, regardless of design, is considered significantly adverse, while others may consider any change in development to be beneficial.

Impacts on Project Site and Surrounding Area. As described above, the Project site is not considered visually significant because it consists of an urbanized and industrial area with several manufacturing and warehousing buildings as well as expansive impervious surfaces. The mix of uses in this area, including Bayfront Expressway to the north, Building 20 to the east, residential uses to the south, and industrial and office complexes to the west, generally results in an inconsistent development pattern.

Project construction would include demolition, excavation, and construction activities on the Project site. These activities would be separated into two phases. Phase 1 would occur over approximately 18 months, while Phase 2 would occur over 23 months. These construction activities would temporarily degrade the existing visual character of the Project site and the surrounding area. Construction materials and equipment would be staged entirely onsite, in areas that would not be under construction. Construction fencing and existing and proposed landscaping would provide visual screening. Construction activities would be visible to motorists along Bayfront Expressway and Chilco Street as well as residents in the Belle Haven neighborhood but would be screened, as feasible. In addition, construction and associated visual degradation would be short term and temporary. Accordingly, this temporary construction-related impact would be ***less than significant,*** and no mitigation would be required.

The two proposed office buildings, Buildings 21 and 22, would be oriented in an east–west direction and connected through an open-air bridge. Buildings 21 and 22 would comprise approximately 512,900 gsf and 449,500 gsf, respectively, of office, event, and amenity spaces. In addition, the hotel building would include approximately 174,800 gsf of hotel and amenity spaces. Each proposed building would offer a variety of design styles and building articulations. The Project would result in an increased floor area compared with existing conditions at the Project site and increase overall building heights. The new multi-use bicycle/pedestrian bridge would allow for public access to the Bay Trail and Bayfront Park from the Project site. It would span Bayfront Expressway at a height of approximately 35 feet. The ramp would touch down north of the Bay Trail, within the Caltrans right-of-way adjacent to the marsh/salt

ponds. A portion of the aerial walkway could cantilever beyond the Caltrans right-of-way. The proposed multi-use bicycle/pedestrian bridge would be a new source of height, mass, and bulk. However, the multi-use bicycle/pedestrian bridge would be consistent with the surrounding recreational trails, including the Bay Trail and the BCDC Public Shoreline Trail.

Landscaping would be provided throughout the Project site in a manner that would provide new green spaces, including drought-tolerant landscaping, and encourage active use of the outdoors. The new landscaping would be composed predominately of native plant communities that would be well adapted to the Project site and sensitive to adjacent bayland habitats. The Project would include a multi-level landscape, with spaces at the ground, office, and roof levels. The proposed perimeter landscape areas on the northern and southern boundaries of the Project site, along Bayfront Expressway and the Dumbarton Rail Corridor, would continue the landscape established as part of Building 20. Low landforms, up to 4 feet above existing grades, would be planted with native and adapted understory plants. The landforms and groupings of trees would provide a buffer along the northern and southern boundaries of the Project site. The proposed landscape would also include natural areas at the eastern and western ends of the Project site. These areas would be planted with a wide variety of native species, with a focus on habitat and stormwater treatment functions. In addition, a series of bioretention areas would be integrated into the landscaped areas within the parking areas to provide stormwater treatment for impervious surfaces outside of the building footprints. The parking areas that would extend beyond the building footprints would be shaded by trees that would be interspersed with landscaped areas, and the building roofs would include a combination of paths, gathering areas, and larger planning areas that would include native and climate-adapted understory and tree plantings. The parking lots could also include canopies with solar photovoltaic roofs.

An approximately 2-acre publicly accessible open space, which would be owned and managed by Facebook, is proposed in a portion of the area between Buildings 21 and 22. The park would include a mix of uses and provide a safe pedestrian route between the Belle Haven neighborhood, Bayfront Expressway, and the Bay Trail. The park would be compatible with both the office environment and public access. The final design of the open space would be subject to review and approval by the City. Monument and wayfinding signage would be provided at each of the vehicular entry points, consistent with the City of Menlo Park Signage Ordinance. Additional pedestrian wayfinding and rules signage would be located throughout the Project site, including in the publicly accessible open space.

There are 770 trees on the Project site. Of these, 274 are considered heritage trees, per Section 13.24 of the City's Municipal Code.[10] Under the existing site plans, all trees would be removed, and no heritage trees would remain. However, the applicant is proposing that heritage trees that are in good health (as determined by a certified arborist) would be replaced at a ratio of 2:1, and heritage trees with fair or poor health, or dead heritage trees, would be replaced at a ratio of 1:1. The Project Sponsor is proposing to plant a minimum of 423 trees to replace the 274 heritage trees that would be removed following Project implementation, which meets the proposed heritage tree replacement ratio. These trees would be located throughout the Project site, including the site perimeter, the surface parking lot, and areas surrounding the proposed buildings, as explained above. When first planted, the proposed trees would not adequately screen views of the buildings from surrounding areas. However, at full maturity, it is expected that the proposed trees could screen a substantial portion of the buildings. In addition, some of the existing perimeter trees that are not located on the Project site and not along Chilco Street would remain with implementation of the Project and continue to limit views to and from the site.

[10] SCBA Tree Consulting. 2015. *Tree Survey at 301–309 Constitution Drive.* December 21, 2015.

Building 20, east of the Project site, is an approximately 433,555 gsf office building with at-grade parking beneath the building podium. It is approximately 73 feet in height, inclusive of all rooftop mechanical screening and the East Lobby roof. As the dominant development feature in the area, Building 20 partially obscures the Santa Cruz Mountain Range, as seen from areas north of the Project site. Compared with Building 20, Buildings 21 and 22 would be generally similar in height and massing. Each proposed building would offer a variety of design styles and building articulations that would complement each other as well as Building 20. Therefore, the site plan for the Project would increase unity with the surroundings by creating a contiguous building mass and landscaped areas that would reflect an architectural design compatible with (although not exactly the same as) that of the existing built environment of the area east and west of the Project site. Although it is unknown at this time what types of façade articulation and architectural design would be used for the buildings, it is expected that they would be harmonious with each other and their surroundings and that the design would be informed by an architectural language of massing, materiality, and interconnectivity that would link the buildings at the Project site to the broader context. In addition, the proposed landscaping would serve to screen the lower portions of the proposed structures.

Although development at the Project site would increase onsite building height, mass, and bulk, the Project would have a less-than-significant impact on onsite visual character and the quality of the immediate surrounding areas. Currently, the site consists of outdated buildings and surface parking lots that do not complement the natural quality of the salt ponds and marshes to the north, Building 20 to the east, the Belle Haven neighborhood to the south, and the office parks to the west. The proposed development would increase unity with its surroundings by constructing buildings that would reflect a similar architectural design. Therefore, the impact on visual character and quality is considered to be ***less than significant***.

Impacts on Public View Corridors. The public view corridors identified above include the residential areas of Belle Haven, Chilco Street, and Hamilton Park. In addition, the BCDC Public Shoreline Trail, the Bay Trail, and Bayfront Park also have public view corridors; however, these are considered scenic vistas and are discussed in more detail under Impact AES-1, above.

Belle Haven Neighborhood (Viewpoints 4 and 5). As discussed above, the Belle Haven neighborhood features mainly single-family residential units with mature and well-maintained landscaping. Because of the flat topography, existing structures, and dense vegetation, background views of the areas surrounding the neighborhood are not available. However, as shown in Figures 3.2-7 and 3.2-8, streets that run perpendicular to Terminal Avenue, such as Hill Avenue and Modoc Avenue, have channelized view corridors of the Project site.

As shown in Figure 3.2-7a, Building 305 at the Project site is screened from Hill Avenue predominantly by single-family units along Terminal Avenue and dense clusters of vegetation. There are no background views. With the proposed development (Figure 3.2-7b), only one building (Building 21) would be visible from this viewpoint. This proposed building would be taller than the existing building; however, the building would remain screened predominantly by the single-family units. Additionally, the existing dense trees and shrubs along Terminal Avenue would continue to partially block the view of the Project site. Therefore, views of proposed Building 21 would be available only through intermittent breaks in the vegetation. The building would not significantly alter the view from Hill Avenue.

Viewpoint 5 (Figure 3.2-8a) depicts views from Modoc Avenue, facing north. As shown, the views consist of single-family units in the Belle Haven neighborhood, which are set back from the street, and dense vegetation. Portions of Building 305 on the Project site are visible from this viewpoint; however, this

building is blocked mainly by the residential buildings and landscaping. As depicted in Figure 3.2-8b, Building 22 would be visible from Modoc Avenue. As with existing conditions, the view of this proposed building from Modoc Avenue would be channelized and visible only behind existing structures. The proposed building would not add significant building height, mass, or bulk to the Project site, as seen from Modoc Avenue. Therefore, views of the Project site from Modoc Avenue would not significantly alter the visual character of the area.

Chilco Street (Viewpoint 6). As depicted in Figure 3.2-9a, existing views of the Project site from Chilco Street, facing north, consist of single-family residential units in the Belle Haven neighborhood, Fire Station 77, dense trees and vegetation, the Dumbarton Rail Corridor, and utility and power lines. A portion of Building 307 at the Project site is visible from this viewpoint. No background views are available. As depicted in Figure 3.2-9b, the western portion of Building 21 and the publicly accessible open space would be visible from this viewpoint. Development of the Project would increase building height, bulk, and mass, as seen from this segment of Chilco Street. However, landscaping at the publicly accessible open space and vegetation on the building's rooftop deck would partially screen the building from view and help to blend it with its surroundings. Therefore, views of the Project site from Chilco Street would not significantly alter the visual character of the area.

Hamilton Park (Viewpoint 7). As depicted in Figure 3.2-10a, views from Hamilton Park, facing north, consist of the park's open space, vegetation, playground, and signage in the foreground and the surrounding single-family units in the Belle Haven neighborhood in the middleground. Farther to the north, the tower of Building 307 is highly visible. The existing tower would be demolished under a separate project (as discussed under *Cumulative Impacts*, below). Under the Project, Building 21 would be constructed and would be visible from Hamilton Park (Figure 3.2-10b). A more expansive view of the onsite building would be provided compared with existing conditions; however, the new building would be shorter than the existing tower. Additionally, the building would blend in with its surroundings because of the vegetation on its rooftop deck.

Overall Degradation of Existing Visual Character or Quality. The proposed development at the Project site would increase compatibility with the surroundings by creating contiguous landscaped areas and office buildings that would reflect a similar architectural design. The existing site consists of outdated industrial and office buildings. The Project would construct new buildings that would be a continuation of the existing pattern of office buildings east and west of the Project site. Implementation of the Project would change the visual character of the Project site but would not significantly alter the quality of the surrounding areas because of the dense perimeter vegetation, trees, flat topography, and modern architectural detailing on the exterior of the buildings. Similar to the existing buildings, the roofs of the proposed buildings would be visible from surrounding areas. However, the proposed buildings would include rooftop decks with landscaping. This would not change overall views to the extent that the visual quality of the area and public view corridors would be substantially degraded.

The proposed development would support the area's transition to office campuses and increase consistency and accessibility with its surroundings by creating contiguous landscaped areas and providing bicycle and pedestrian connections. In addition, as discussed above, CDP approval for the Project would include review of the architectural plans by the Planning Commission. However, because Building 22 and the hotel currently include only massing studies, those buildings would need additional review in the future by the Planning Commission. The CDP for the Project would enable the Planning Commission to approve the architectural plans for the other buildings. The proposed buildings would alter the visual character of the Project site but would not significantly change the

character of the surrounding areas because of perimeter landscaping and flat topography. Although the upper levels of the proposed buildings would be visible from surrounding areas, this would not change overall views to the extent that the visual character of the area would be substantially different. Therefore, the Project would have a ***less-than-significant*** impact with respect to overall degradation of existing visual character and quality—and may be considered an improvement compared with existing conditions.

Impact AES-3: New Sources of Light and Glare. The Project could create a new source of substantial light or glare that could adversely affect daytime or nighttime views in the area. (LTS/M)

Exterior Lighting. Exterior lighting at the Project site is limited because the buildings are currently only partially occupied. Street lighting is not provided along Bayfront Expressway or Chilco Street. However, some security lighting is currently present at the Project site, adjacent to building entrances and within the parking lots. Overall, the Project would add lighting to an area that is not currently a significant source of nighttime lighting.

Because of the size of the Project, construction would result in extended work hours. The additional work hours would require, in some cases, construction site lighting for safety reasons. Lighting used during construction would include generator light towers with up to four metal halide lamps. These light towers would not extend higher than 32 feet. Per requirements outlined by the Project contractor,[11] the light towers would be located within 600 feet of the property line and oriented toward the Project site to reduce light spillage onto adjacent properties. Any lighting units located on the floor level or roof of the building would have their luminaries focused downward to avoid offsite illumination and be oriented away from nearby residential units. Lighting would be turned off at the end of each workday, no later than 15 minutes after the conclusion of any exterior work, or 10:00 p.m. By adhering to these construction techniques, which would be identified as conditions of approval within the CDP, lighting impacts during construction would be ***less than significant***.

Proposed development at the Project site would result in nighttime light from vehicles, interior circulation areas, parking lots, buildings, rooftop decks, and security features. The Project site would be more visible from Bayfront Expressway and Chilco Street, and lighting could be a nuisance or distraction for motorists. Increased lighting at the Project site could also affect residents in the Belle Haven neighborhood. The increase in building heights would make the lights more visible to motorists and residents; however, some of the building lights would be screened by the perimeter vegetation and potentially by window overhangs or awnings.

Because of the urbanized nature of surrounding areas to the east, south, and west, a significant amount of ambient nighttime lighting currently exists, thereby affecting views of the nighttime sky. Building 20 in particular, to the east, contributes to nighttime lighting in the immediate vicinity. However, areas to the north, which include the salt ponds, marshes, Refuge, and Bay, contain no nighttime lighting. The lighting performance standards set by the U.S. Green Building Council under the Leadership in Energy and Environmental Design (LEED) program would be followed (e.g., standards regarding lighting specifications, shielding techniques, automatic lighting controls, light pollution). Nonetheless, the increase in building heights and onsite activity would result in a ***potentially significant*** increase in lighting in the area.

[11] Level 10 Construction. Memo to Jeremy Oliver, project manager. Subject: Work Hours. October 26, 2015.

Source: Gehry Partners, LLP, 2016.

Graphics ... 00296.15 (3-22-2016)

Figure 3.2-10
Hamilton Park facing Northwest (Viewpoint 7)
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Glare from Buildings. Glare is caused by light reflections from pavement, vehicles, and building materials, such as reflective glass and polished surfaces. During daylight hours, the amount of glare depends on the intensity and direction of sunlight. Glare can create hazards for motorists and be a nuisance for bicyclists and pedestrians as well as other sensitive viewers. With implementation of the Project, highly reflective surfaces at the Project site could pose the most significant impacts along major road corridors, such as Bayfront Expressway and Chilco Street. At this time, the specific types of architectural materials and glass surfaces are unknown. Because building material specifics are currently unknown, it is conservatively assumed that the Project would result in ***potentially significant*** glare impacts.

Vehicle Headlights. The Project site would include surface parking lots as well as parking areas under building podiums. Light and glare from vehicle headlights and windshields at these locations could be a nuisance to motorists and adjacent uses. In particular, the proposed surface parking lot south of Building 22 could result in light spillage onto the Belle Haven neighborhood. However, dense perimeter landscaping is proposed along the perimeter of the Project site that would effectively block light from vehicle headlights that might spill onto adjacent areas. Therefore, the Project would result in ***less-than-significant*** impacts from vehicle headlight spillage.

MITIGATION MEASURES. Implementation of Mitigation Measures AES-3.1 and AES-3.2 would reduce potential light and glare impacts of the Project to a ***less-than-significant*** level.

AES-3.1: *Design Lighting to Meet Minimum Safety and Security Standards.* Concurrent with the building permit submittal, the Project Sponsor shall incorporate lighting design specifications to meet minimum safety and security standards. The comprehensive site lighting plans shall be subject to review and approval by the City's Community Development Department, Planning Division, prior to building permit issuance for the first building on the site.

The following measures shall be included in all lighting plans.

- Luminaries shall be designed with cutoff-type fixtures or features that cast low-angle illumination to minimize incidental spillover of light onto adjacent private properties. Fixtures that shine light upward or horizontally shall not spill any light onto adjacent private properties.
- Luminaries shall provide accurate color rendering and natural light qualities. Low-pressure sodium and high-pressure sodium fixtures that are not color-corrected shall not be used, except as part of an approved sign or landscape plan.
- Luminary mountings shall be downcast and pole heights minimized to reduce the potential for backscatter into the nighttime sky and incidental spillover onto adjacent properties and undeveloped open space. Light poles shall be no higher than 20 feet. Luminary mountings shall be treated with non-glare finishes.

AES-3.2: *Treat Reflective Surfaces.* The Project Sponsor shall ensure the application of a low-emissivity coating on exterior glass surfaces of proposed structures. The low-emissivity coating shall reduce the reflection of visible light that strikes the exterior glass and prevent interior light from being emitted brightly through the glass.

Impact AES-4: New Sources of Shadow. Shadows cast by the proposed structures would not shade open spaces or public areas for an extended period. (LTS)

Significant shading of public open spaces could be considered an adverse impact if new shadows were to change the usability or comfort of a space. Open spaces, pathways, plazas, and courtyards within the Project site are considered to be private open spaces. Although the publicly accessible open space south of Buildings 21 and 22 would be open to the public, it would still be owned by the Project Sponsor. Therefore, this area is not considered in the analysis. The Bay Trail, which is located north of Bayfront Expressway, is the closest public area to the Project site that could be affected.

Shadow simulations have been created for critical periods of the day on March 20 (spring equinox), June 21 (summer solstice), September 23 (fall equinox), and December 22 (winter solstice) to depict the maximum and minimum amount of shadow that would be cast by the Project at the site. Shadow impacts are most noticeable during the day between 9:00 a.m. and 3:00 p.m. To estimate shade effects throughout the year, shadow simulations include 9:00 a.m., 12:00 p.m., and 3:00 p.m. The shadow simulations are presented in Figures 3.2-11 through 3.2-14.

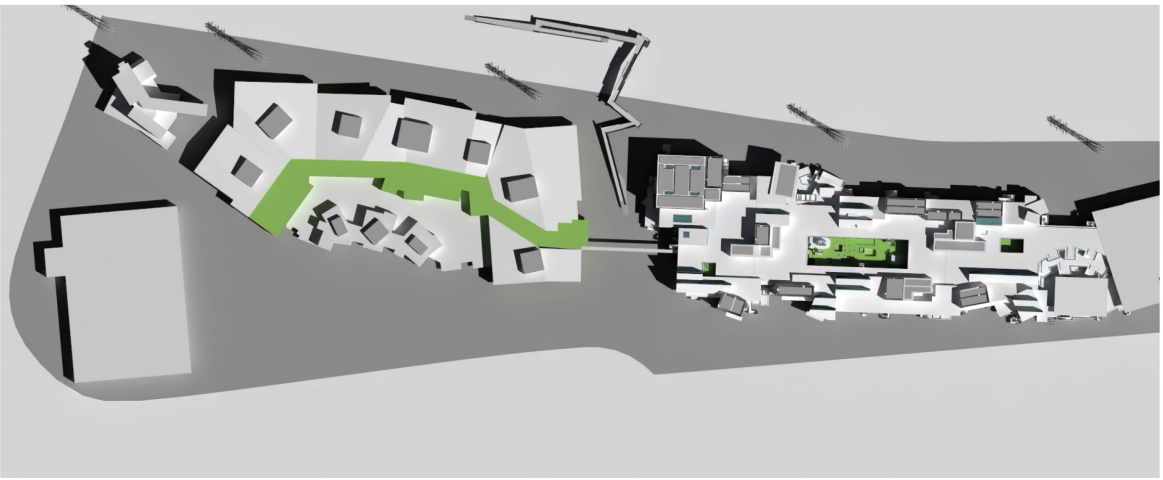
As shown in the figures, no offsite public parks, open space areas, or private residences would be affected by shadows that would be cast by the proposed office buildings. The only shadows that would be cast offsite by the Project would be toward Bayfront Expressway. At 3:00 p.m. on the winter solstice (Figure 3.2-14), the Project would cast minor shadows onto some eastbound lanes of Bayfront Expressway. However, impacts on Bayfront Expressway would be less than significant because the shadows would be noticeable by motorists for only a few seconds. As shown in Figure 3.2-14, shadows from the existing electrical transmission towers at the Project site would reach the Bay Trail. However, these shadows are an existing condition and not a result of the Project. The proposed multi-use bicycle/pedestrian bridge that would connect the Project site to the Bay Trail would cast shadows on the trail during all seasons. However, the bridge would not shade a significant area, and users of the Bay Trail would be exposed to these shadows only momentarily as they bike or walk past the area..

As depicted in Figures 3.2-11 through 3.2-14, shadows from the proposed buildings would be restricted to the Project site during the summer solstice as well as the spring and fall equinoxes, resulting in no shadow spillage onto adjacent properties or public spaces. The shadows from the buildings during the winter solstice would extend to just north of Bayfront Expressway, but as explained above, this would not be considered significant because it would not affect public open space. Although the proposed multi-use bicycle/pedestrian bridge would shade Bayfront Expressway and the Bay Trail, the structure would not shade a significant area, and shadows would be experienced by motorists and Bay Trail users only briefly. As such, the Project would result in ***less-than-significant*** shadow impacts.

Cumulative Impacts

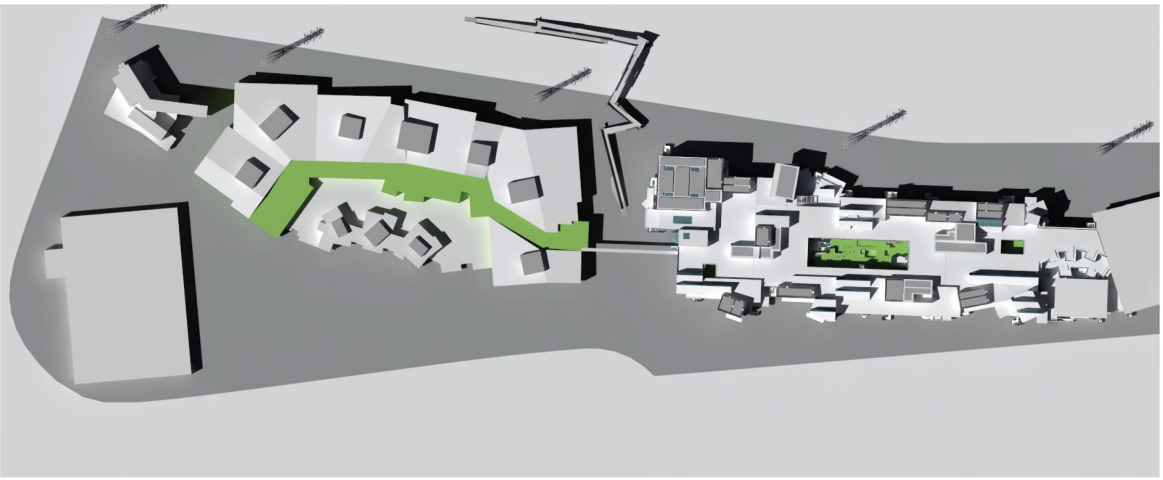
The geographic context for cumulative aesthetics impacts is generally confined to areas that are visible from the Project site or have views of the Project site. Therefore, the cumulative context includes the Project site plus adjacent areas along Bayfront Expressway and in the Belle Haven neighborhood. Proposed projects in the City on the other side of US 101 are not included because distance, flat topography, and intervening development serve as visual barriers between the two areas. Therefore, this cumulative analysis includes development north and east of US 101.

Cumulative impacts are addressed only for those thresholds that would result in a Project-related impact, whether it be less than significant, significant, or significant and unavoidable. If the Project would result in no impact with respect to a particular threshold, it would not contribute to a cumulative impact. Therefore, no analysis would be required. The Project would have no impact related to scenic



March 20, 9 am

March 20, 12 pm



March 20, 3 pm

N

No Scale

Source: Gehry Partners, LLP, 2016.

Graphics ... 00296.15 (3-22-2016)

Figure 3.2-11
Spring Equinox (March 20) Shadows
Facebook Campus Expansion Project Draft EIR

June 21, 9 am

June 21, 12 pm

June 21, 3 pm

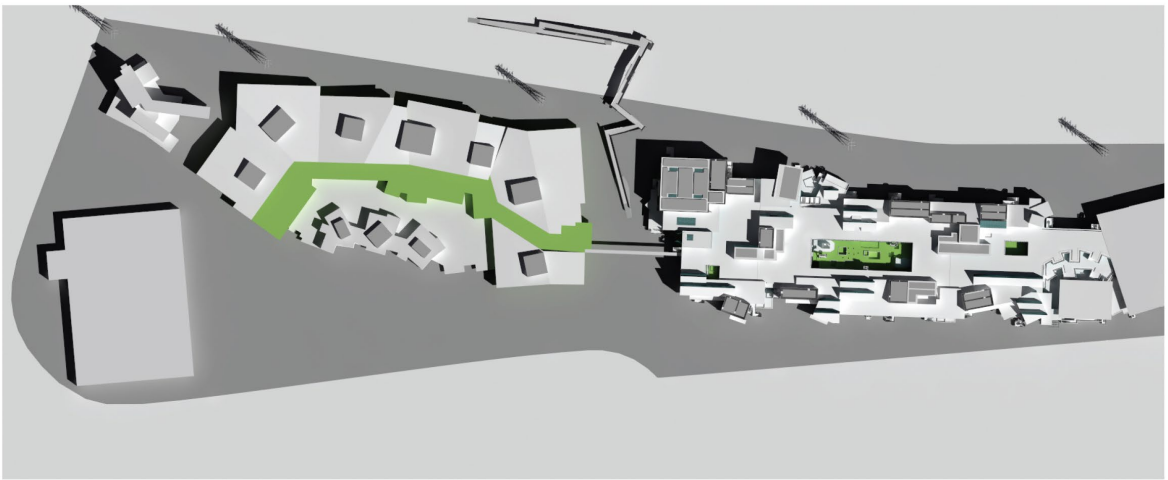
Source: Gehry Partners, LLP, 2016.

N

No Scale

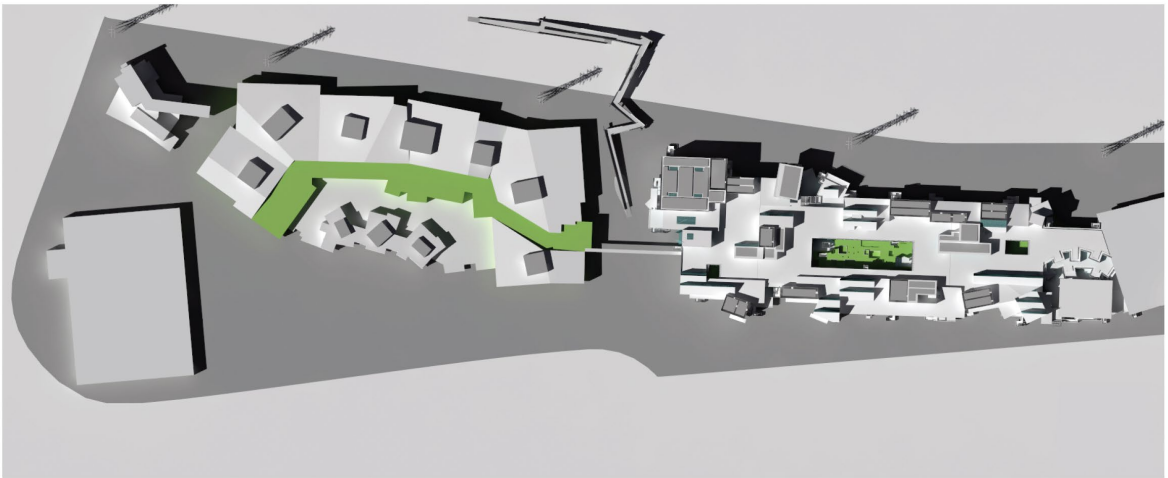
Graphics ... 00296.15 (3-22-2016)

Figure 3.2-12
Summer Solstice (June 21) Shadows
Facebook Campus Expansion Project Draft EIR



September 23, 9 am

September 23, 12 pm



September 23, 3 pm

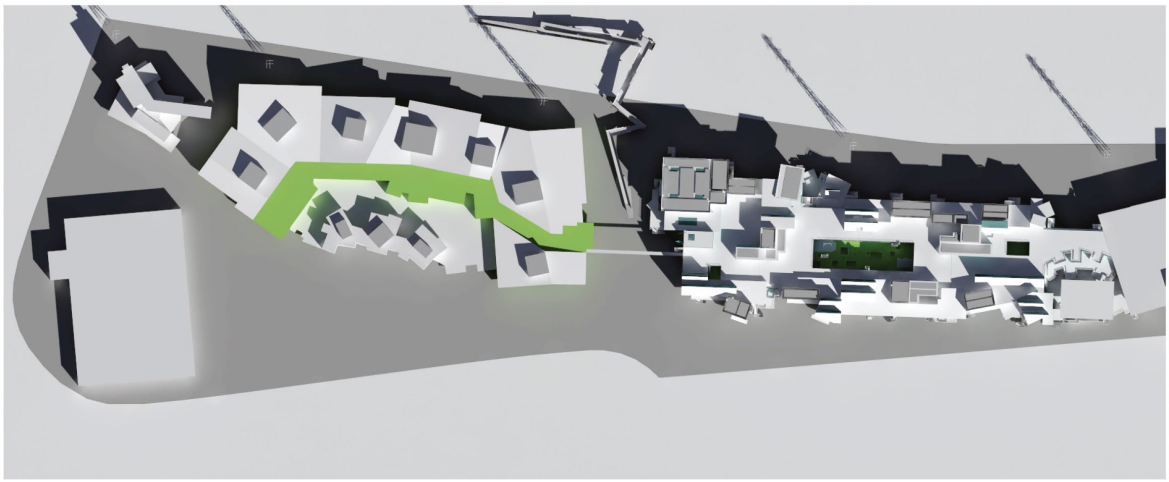
Source: Gehry Partners, LLP, 2016.

N

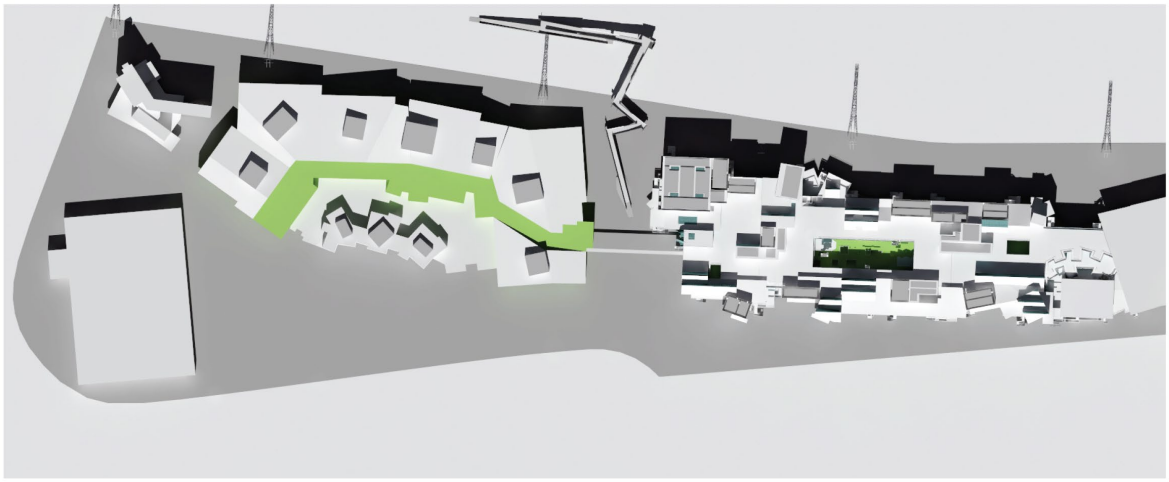
No Scale

Graphics ... 00296.15 (3-22-2016)

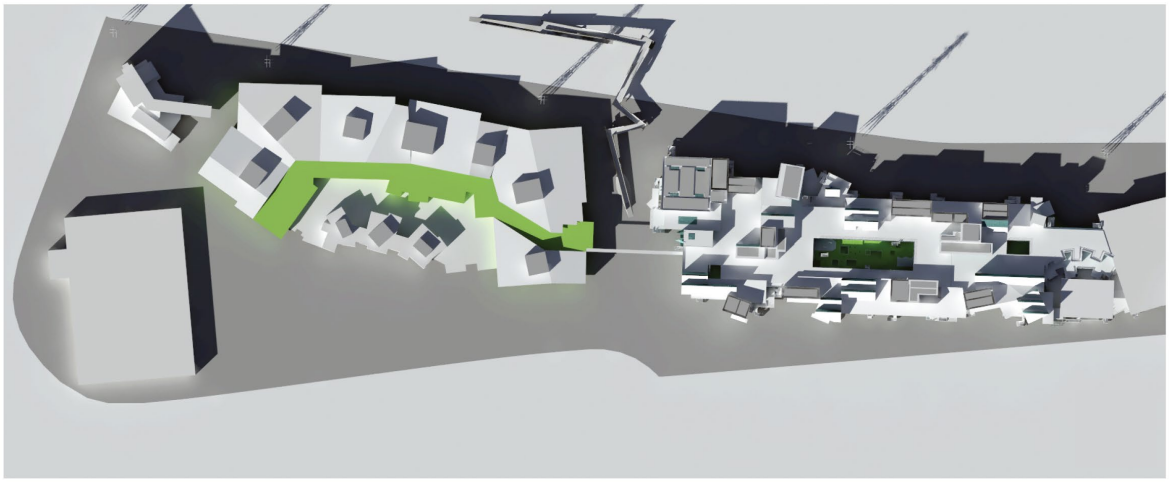
Figure 3.2-13
Fall Equinox (September 23) Shadows
Facebook Campus Expansion Project Draft EIR



December 22, 9 am



December 22, 12 pm



December 22, 3 pm

N

No Scale

Source: Gehry Partners, LLP, 2016.

Graphics ... 00296.15 (3-22-2016)

Figure 3.2-14
Winter Solstice (December 22) Shadows
Facebook Campus Expansion Project Draft EIR

resources along a State Scenic Highway because these areas would not be affected by the Project, as discussed above in *Impacts Not Evaluated in Detail*. Therefore, these topics are not considered for cumulative impacts. This cumulative analysis examines the effects of the Project in the relevant geographic area in combination with other current projects, probable future projects, and projected future growth.

Impact C-AES-1: Cumulative Degradation of Aesthetics. The Project, in combination with other foreseeable development in the surrounding area, would not have a significant cumulative impact on visual character or the quality of scenic vistas or public view corridors and would not cumulatively contribute to new sources of light, glare, or shadows. This cumulative impact is less than significant. (LTS)

Scenic Vistas

The Project site is visible from the BCDC Public Shoreline Trail, the Bay Trail, and Bayfront Park. Because of flat topography, distance, intervening vegetation and development, and the relatively low-scale characteristics of the other proposed projects in the area, it is unlikely that the other projects would be visible from scenic vistas. These projects include demolition of Buildings 307–309 (6), Building 23 (5), Chilco Street Improvements (14), the proposed Dumbarton Trail (15), Commonwealth Corporate Campus (7), New Magnet High School (11), 777 Hamilton Avenue (29), 1283 Willow Road (3), 1221 Willow Road (30), and 1315 O'Brien Drive (12). Therefore, the Project, in combination with these projects, would not result in a cumulative impact on scenic views and vistas. However, the large-scale development of Menlo Gateway (4) along Bayfront Expressway could be visible from all three scenic areas. The existing Project site and the Menlo Gateway site include prior manufacturing buildings, warehouses, and unkempt land adjacent to newer office developments. Both projects would enhance the project sites with modern buildings and increased landscaping. From the BCDC Public Shoreline Trail and the Bay Trail segment adjacent to the Project site, the buildings at the Project site would be in the middleground, while the buildings at the Menlo Gateway site would appear in the background. From Bayfront Park and the Bay Trail segment across Bayfront Expressway, buildings at the Menlo Gateway site would appear in the middleground, while the Project buildings would appear in the background. The Project site and the Menlo Gateway site are separated by approximately 0.5 mile. As such, depending on the viewpoint, closer development would appear as a dominant feature, while other development would appear to blend with surrounding vegetation, Bayfront Expressway, intervening structures, and the general surroundings. Although the Project and Menlo Gateway would add height, bulk, and massing in the Project vicinity, this change would not result in a significant impact on a scenic vista. The scenic vistas from identified sensitive viewer locations are mainly facing north, away from the Project site and the Menlo Gateway development; therefore, the proposed buildings would not significantly alter the scenic vistas. Cumulative impacts are considered ***less than significant***.

Visual Character or Quality from Public View Corridors

As discussed above, only projects that are in the immediate vicinity of the Project site could contribute to degradation of the visual character or quality of the existing setting. The majority of the projects listed in Table 3.0-3 in Section 3.0, *Environmental Impact Analysis*, are too far away to combine with the Project and degrade visual character or quality. The existing public view corridors include Bayfront Expressway, Chilco Street, the Belle Haven neighborhood, and Hamilton Park; views from the BCDC Public Shoreline Trail, the Bay Trail, and Bayfront Park are analyzed above.

As shown in Figure 3.0-1, projects within the vicinity of these public view corridors include Buildings 307–309 (6), Building 23 (5), Chilco Street Improvements (14), the Dumbarton Trail (15), Commonwealth Corporate Campus (7), Menlo Gateway (4), New Magnet High School (11), 777 Hamilton Avenue (29), 1283 Willow Road (3), 1221 Willow Road (30), and 1315 O'Brien Drive (12). However, several of these projects would not be visible, together with the Project site, from a single view corridor because of the distance between the Project site and these other projects, intervening development, flat topography, and the low-scale characteristics of the other projects. Thus, for purposes of this analysis, the only projects that could be visible, together with the Project site, from the Belle Haven neighborhood and Chilco Street are Building 23 (5), Buildings 307–309 (6), Chilco Street Improvements (14), and the proposed Dumbarton Trail (15), which are considered together in this cumulative analysis. As summarized below, all three projects would be located in proximity to or on the Project site and result in redevelopment of an urban area. However, none of these projects would result in the construction of new structures.

Although Building 23 (5) is located on the southwestern portion of Project site, it is considered a separate development project. In December 2014, the Planning Commission approved a use permit to convert Building 23 to office uses without adding any net new square footage. In addition to interior modifications, Building 23 would include exterior renovation with updated colors, materials, and window glazing. The area around the building would be enhanced to include new landscaping, an outdoor deck with trellis, a covered shuttle stop, and an entry feature near the main entrance. Building 23 and the Project buildings would both be visible from Chilco Street to the south and west and private residences in the Belle Haven neighborhood to the south. This project would renovate an outdated warehouse building, turning it into a modern office building. Similar to the Project, Building 23 would be renovated by the Project Sponsor; therefore, the Project and Building 23 would be expected to complement each other upon completion. The site plan for the Project and Building 23 would increase unity with each other and the surroundings by creating a contiguous building mass and landscaped areas that would reflect an architectural design that would be similar to (although not exactly the same as) that of the existing built environment. Thus, Building 23 would not be expected to substantially degrade the visual character or quality of its surroundings. Therefore, Building 23 and the Project would not result in cumulative impacts.

Demolition of Buildings 307-309 (6), which were located on the Project site at the time of the NOP, is also considered a separate project. As discussed above, Building 307 includes a tall manufacturing tower, which is visible throughout the Project site and from offsite locations. Demolition of this building would change the visual appearance of the Project site and this feature would no longer be visible. With construction of the Project, Building 21 would be constructed in its place. However, the project that would just demolish these buildings would not combine with other projects to result in a cumulative impact.

The Chilco Street Improvements (14) would redesign the Chilco Street frontage adjacent to the Project site. This project would construct a new two-way, 12-foot-wide separated Class 1 bike route; a Class 2 bike path; a 5- to 6-foot-wide pedestrian path; new fencing; and a public access easement. In addition, the project would include the removal of existing trees that are in poor condition and those where required for bicycle and pedestrian improvements. It is currently anticipated that 84 trees would be removed, 42 of which are heritage trees. Trees would be replaced consistent with the City's Heritage Tree Ordinance, and new groundcover plantings would be included along the entire frontage. The project would revitalize a portion of Chilco Street and integrate it with the surrounding area. The proposed fencing and vegetation along Chilco Street would help to screen the site and the proposed buildings, as seen from the south. Therefore, the improvements would lessen the visual impacts and would not create a new significant impact.

The proposed Dumbarton Trail (15) would provide a 4.5-mile-long bicycling and walking path adjacent to the current Dumbarton Rail Corridor. The concept for this potential trail project, which was developed by the Project Sponsor, is being proposed as a discrete project. This project could require the removal of some existing vegetation that currently provides a visual buffer between the Belle Haven neighborhood and areas north of the Dumbarton Rail Corridor. However, the visual character as seen from Belle Haven streets is not expected to be affected by the trail project because of intervening structures and vegetation. Therefore, the proposed Dumbarton Trail and the Project would not be visible from public view corridors in the Belle Haven neighborhood, resulting in less-than-significant cumulative impacts.

As described above, there has been a trend in the Project area toward redeveloping some existing industrial and warehousing uses to create corporate office campuses. The Project would provide increased unity with its existing and planned surroundings by creating contiguous landscape areas and buildings that would reflect a similar architectural design. Other development that could be seen from the same public view corridors would complement the Project and help integrate it with the surrounding office/industrial park and the Belle Haven neighborhood. Therefore, the Project, together with Building 23, the Chilco Street Improvements, and the Dumbarton Trail, would not result in substantial degradation of visual character or quality in the surrounding areas, and the cumulative impact would be ***less than significant.***

Light and Glare

Other development in the area could include direct illumination of project structures, features, streets, and/or walkways and increase ambient nighttime lighting levels in the area. The projects could also result in increased light and glare from vehicle headlights and be large enough to contribute to a cumulative lighting impact. Building surfaces can also increase glare if they are reflective or if they include large expanses of windows. However, because the other projects would all involve redevelopment of urban sites that already generate light and glare and the land uses proposed are not anticipated to be particularly light intensive, development of the other projects is not anticipated to significantly increase nighttime lighting and glare conditions in the area. The proposed Dumbarton Trail would not introduce substantial new permanent sources of light or glare because it is anticipated that only minor lighting associated with nighttime illumination would be added to the trail. The Chilco Street Improvements would most likely add lighting to a street where no lighting currently exists. However, surrounding developments and nearby streets include street and vehicle lights; a significant change with respect to light and glare is not expected. The Project would implement Mitigation Measures AES-3.1 and AES-3.2, which would reduce the Project's contribution to less than significant. Thus, cumulative impacts from nighttime lighting and glare would be ***less than significant.***

Shadows

Shadows from proposed development at the Project site would extend over a small geographic area, and no foreseeable projects, in combination with the Project, would result in shadow impacts. Although shadows from identified projects would not overlap with shadows from the Project, there could be an overall increase in shadows in the area. The majority of the mixed-use, office, and residential projects are not expected to increase shadows in the area substantially because of limited mass and height. Shadow impacts on the Project site would be restricted to the interior of the site and a small portion of Bayfront Expressway and the Bay Trail because of the multi-use bicycle/pedestrian bridge. As shown in Figures 3.2-11 through 3.2-14, shadows from Building 23, which is located on the Project site, would not combine with shadows from buildings proposed by the Project. Shadows from the Project on the Bay Trail would be limited and would not adversely affect recreationists while using the trail. Therefore, the Project's contribution to this this cumulative impact is considered ***less than cumulatively considerable***.

3.3 Transportation/Traffic

This section presents the results of the transportation impact assessment conducted for the Facebook Campus Expansion Project. The information used for the analysis is based on current traffic volume and land use data provided by the City of Menlo Park and future-year travel demand modeling, traffic operations analysis, and review of site access and multi-modal impacts conducted by TJKM Transportation Consultants. The following conditions are evaluated as part of this study:

- Existing conditions
- Background conditions
- Background plus-Project conditions
- Cumulative 2040 existing General Plan conditions
- Cumulative 2040 existing General Plan plus-Project conditions
- Cumulative 2040 proposed General Plan conditions

Issues identified in response to the Notice of Preparation (NOP) (Appendix 1) were considered in preparing this analysis. Applicable issues that were identified include Project-related trip generation, distribution, and assignment; the City's financial responsibility related to roadways, streets, intersections, and mitigation measures; signalization of the right-turn in/out driveway of the 1 Facebook Way entrance; impacts on Bayfront Expressway/State Route (SR) 84 (Bayfront Expressway); creation of a Transportation Demand Management program; impacts on bicyclists and pedestrians from mitigation measures; bicycle and pedestrian traffic and circulation in North Fair Oaks; and traffic in North Fair Oaks, the Belle Haven neighborhood, on Willow Road, and on Middlefield Road.

Existing Conditions

Regulatory Setting

The following transportation plans, policies, and regulations guide transportation planning in Menlo Park:

Metropolitan Transportation Commission: The Metropolitan Transportation Commission (MTC) was created by the California legislature in 1970 as the transportation planning, coordinating, and financing agency for the nine-county Bay Area. It is responsible for prioritizing regional transportation projects through the Regional Transportation Improvement Project (RTIP) for state as well as federal funding. This prioritization is accomplished through coordination with local agencies and congestion management agencies (CMAs) and a demonstration of need, feasibility, and conformance with federal and local transportation policies.

City of Menlo Park General Plan: The current City of Menlo Park General Plan (General Plan) Circulation Element was adopted in 1994. Circulation and transportation goals and policies in the City's current adopted Circulation Element include the following:

> **Goal II-A:** To maintain a circulation system using the Roadway Classification System that will provide for the safe and efficient movement of people and goods throughout Menlo Park for residential and commercial purposes.

Policy II-A-1: Level of service D (40 seconds average stopped delay per vehicle) or better shall be maintained at all City-controlled signalized intersections during peak hours, except at the intersection of Ravenswood Avenue and Middlefield Road and at intersections along Willow Road from Middlefield Road to US 101.

Policy II-A-2: The City should attempt to achieve and maintain average travel speeds of 14 miles per hour (Level of Service D) or better on El Camino Real and other arterial roadways controlled by the state and 46 miles per hour (Level of Service D) or better on US 101. The City shall work with the California Department of Transportation (Caltrans) to achieve and maintain average travel speeds and intersection levels of service consistent with standards established by the San Mateo County Congestion Management Program.

Policy II-A-4: New development shall be restricted or required to implement mitigation measures in order to maintain the levels of service and travel speeds specified in Policies II-A-1 through II-A-3.

Policy II-A-8: New development shall be reviewed for its potential to generate significant traffic volumes on local streets in residential areas and required to mitigate potential significant traffic problems.

Goal II-B: To promote the use of public transit.

Policy II-B-1: The City shall consider transit modes in the design of transportation improvements and the review and approval of development projects.

Policy II-B-2: As many activities as possible should be located within easy walking distance of transit stops, and transit stops should be convenient and close to as many activities as possible.

Goal II-C: To promote the use of alternatives to the single occupant automobile.

Policy II-C-1: The City shall work with all Menlo Park employers to encourage the use of alternatives to the single-occupant automobile in their commute to work.

Policy II-C-2: The City shall provide information to existing and new Menlo Park employers to assist their employees in identifying potential carpools, transit alternatives, and other commute alternatives.

Policy II-C-6: The City shall, to the degree feasible, assist Menlo Park employers in meeting the Average Vehicle Ridership (AVR) targets established by the Bay Area Air Quality Management District.

Policy II-C-7: Commuter shuttle service between the industrial work centers and the Downtown Transportation Center should be maintained and improved, within fiscal constraints. The City shall encourage SamTrans and other agencies to provide funding to support shuttle services.

Goal II-D: To promote the safe use of bicycles as a commute alternative and for recreation.

Policy II-D-2: The City shall, within available funding, work to complete a system of bikeways within Menlo Park.

Policy II-D-4: The City shall require new commercial and industrial development to provide secure bicycle storage facilities onsite.

Goal II-E*:* To promote walking as a commute alternative and for short trips.

Policy II-E-1: The City shall require all new development to incorporate safe and attractive pedestrian facilities onsite.

Policy II-E-2: The City shall endeavor to maintain safe sidewalks and walkways where existing within the public right-of-way.

Policy II-E-3: Appropriate traffic control shall be provided for pedestrians at intersections.

Policy II-E-4: The City shall incorporate appropriate pedestrian facilities, traffic control, and street lighting within street improvement projects to maintain or improve pedestrian safety.

Complete Streets Policy: Adopted in 2013, the Complete Streets Policy of the City of Menlo Park expresses the City's desire and commitment to create and maintain streets that will accommodate safe, comfortable, and convenient travel for all categories of users and abilities through a comprehensive, integrated transportation network. The policy calls for all relevant departments and agencies of the City to work toward making Complete Streets practices a routine part of everyday project operations, approaches, and programs. Additionally, Complete Streets infrastructure should be considered for incorporation into all significant construction, reconstruction, or street alterations within the city.

Comprehensive Bicycle Development Plan: The 2005 Menlo Park Comprehensive Bicycle Development Plan provides a blueprint for a citywide system of bike lanes, bike routes, bike paths, bicycle parking, and other related facilities to allow for safe, efficient, and convenient bicycle travel within the city and to regional destinations in the Bay Area. The purpose of the plan is to build on the success of previous bicycle infrastructure improvements by enhancing and expanding the existing bikeway network, connecting gaps, addressing constrained areas, and providing for greater local and regional connectivity.

Neighborhood Traffic Management Plan: Established in 2004, the Neighborhood Traffic Management Plan is intended to provide consistent citywide policies for neighborhood traffic management and ensure equitable and effective solutions that enhance the safety and livability of neighborhoods in Menlo Park. The document provides instruction for residents in identifying appropriate neighborhood traffic management measures, such as driver education, enforcement, and physical improvements that can be utilized in addressing specific neighborhood traffic issues.

Sidewalk Master Plan: The 2009 City of Menlo Park Sidewalk Master Plan serves as a guide for the allocation of capital, maintenance, administrative, and matching funds for sidewalk facilities. The primary purpose of the plan is to prioritize sidewalk installation by providing an inventory of existing gaps in the city's walkway network and identifying opportunities to close those gaps. The plan applies prioritization criteria to establish rankings for sidewalk segments into areas of high, medium, and low need.

Transportation Impact Fee: The City of Menlo Park initiated a transportation impact fee (TIF) in 2009 to help fund transportation improvements that are needed in conjunction with new development. The intent of the fee is to maintain adequate service levels as new development places a strain on existing roadway capacity. TIFs ensure that development pays a proportional fair share of the cost of the transportation infrastructure deemed necessary and reasonably related to accommodating the impact of development in Menlo Park. A TIF was introduced by the City of Menlo Park, with the purpose of helping to fund needed transportation improvements when new development occurs in Menlo Park. The TIF may be used only for building new arterial streets, sidewalks, bicycle lanes, and other physical enhancements to the city's multi-modal transportation network. The City updates TIF rates for various land uses each year according to the *Engineering News-Record* (ENR) Construction Cost Index percentage change for San Francisco.

San Mateo County Comprehensive Bicycle and Pedestrian Plan: The 2011 San Mateo County Comprehensive Bicycle and Pedestrian Plan designates Pedestrian Focus Areas and a Countywide Bikeway Network. The plan identifies El Camino Real as the corridor in the county with the highest densities of population and employment and, thus, pedestrian activity. The plan notes that the high level of through movement along this corridor necessitates the need for bicycle and pedestrian improvements. Although biking, walking, and transit percentages in San Mateo County are lower than

the averages for the Bay Area, Menlo Park has one of the highest percentages of commuters who commute by bicycle in the Bay Area. In 2000, this figure was 3.7 percent (three times the Bay Area average); it rose to 7.2 percent of workers in 2006–2008.

Transportation Demand Management Guidelines: The City of Menlo Park Transportation Demand Management (TDM) Guidelines provide options for the City to encourage the use of innovative strategies that mitigate the traffic impact of new development projects. Allowable TDM measures identified in the guidelines include, but are not limited to:

- Charges for employees who need parking
- Employer-subsidized transit tickets
- Preferential parking for carpools/vanpools
- Employer shuttles
- Parking cash-outs
- Shared parking

El Camino Real/Downtown Specific Plan: The El Camino Real/Downtown Specific Plan (Specific Plan) focuses on new development in downtown Menlo Park and the adjacent El Camino Real corridor, an area with a host of mixed uses that is well served by transit. The Specific Plan encourages transit and non-motorized modes to reduce reliance on single-occupant vehicles, minimize congestion, limit the amount of land dedicated to parking, and reduce greenhouse gas (GHG) emissions. The Specific Plan envisions the following:

- A vehicular system that accommodates local traffic on El Camino Real
- An integrated pedestrian network of expansive sidewalks, promenades, and paseos along El Camino Real and within downtown Menlo Park
- A bicycle network that builds on existing plans and integrates more fully with downtown and proposed public space improvements in the area
- Modified parking rates for private development, based on current industry standards

ConnectMenlo General Plan Update: The City of Menlo Park is currently developing an updated General Plan, referred to as the ConnectMenlo Land Use and Mobility Update (ConnectMenlo). ConnectMenlo focuses on proposed modifications to the Land Use and Circulation Elements as well as zoning provisions to implement any land use changes in the Bayfront Area (formerly M-2 area) between US 101 and Bayfront Expressway. The draft ConnectMenlo Circulation Element addresses transportation issues throughout the city. Goals, policies, and programs in the proposed Circulation Element describe a variety of strategies and requirements to improve mobility and address congestion citywide. Although the following summary is provided for context, the proposed ConnectMenlo policies have not been adopted by the City. The Project is therefore evaluated in this environmental impact report (EIR) according to the City's current goals and policies. ConnectMenlo would refine the City's General Plan Circulation Element goals to identify the following mobility goals:

- Provide a safe transportation system that accommodates all modes of transportation and adequate emergency vehicle access
- Increase the accessibility and use of streets by pedestrians, bicyclists, and transit riders
- Increase mobility options to reduce traffic congestion, GHG emissions, and commute travel time

- Improve Menlo Park's overall health, wellness, and quality of life through transportation enhancements
- Support local and regional transit that is efficient, frequent, convenient, and safe
- Provide a range of transportation choices for the Menlo Park community
- Utilize innovative strategies to provide efficient and adequate vehicle parking

ConnectMenlo includes a proposed update to the City's street classifications that would establish and promote the suitability of streets for various travel modes and land uses. The proposed street classifications would include the following changes:

- Arterial streets would be given four different classifications: Boulevards, Thoroughfares, Main Streets, and Avenues. Each of the new arterial classifications would accommodate all travel modes, but specific travel modes would be designated as "high priority" or "medium priority" for each type of classification, Thoroughfares would designate motor vehicle travel as "high priority," while all other modes would be "medium priority." Main Streets would designate pedestrian travel as "high priority," while all other modes would be "medium priority." Boulevards would establish equal "high priority" status for pedestrian, transit, and motor vehicle travel, while bicycle travel would be "medium priority." Avenues would designate bicycle and pedestrian travel as "high priority," while all other modes would be "medium priority."
- Collector streets would be given two different classifications: Mixed-Use Collectors and Neighborhood Collectors. Bicycle and pedestrian circulation would be designated as "high-priority" travel modes on both types of collector streets, while motor vehicles would be "medium-priority." Transit would be designated as a "low-priority" on collector streets.
- Local streets would be classified as Neighborhood Connectors, Bicycle Boulevards, and Local Access Streets. Bicycle and pedestrian circulation would be designated as "high priority" for each new type of local street classification. Motor vehicles would be "medium priority," and transit would "low priority."

Near the Project site, the following streets would be classified as "currently proposed" under the draft ConnectMenlo Circulation Element:

- Willow Road, east of US 101 between the US 101 southbound ramps and Bayfront Expressway, would be classified as a Boulevard. West of US 101, Willow Road would be classified as a Mixed-Use Avenue between the US 101 southbound ramps and Middlefield Road and as a Neighborhood Collector between Middlefield Road and Alma Street.
- Chilco Street would be classified as a Mixed-Use Collector (north of Hamilton Avenue) and as a Neighborhood Collector (south of Hamilton Avenue).
- Constitution and Jefferson Drives would be classified as Mixed-Use Collector Streets.
- Hamilton Avenue would be classified as a Bicycle Boulevard (west of Chilco Street), as a Neighborhood Collector (east of Chilco Street to Willow Road), and as a Mixed-Use Collector (east of Willow Road).
- O'Brien Drive would be classified as a Mixed-Use Collector between Willow Road and University Avenue.

The ConnectMenlo draft Circulation Element identifies the following proposed bikeway segments near the Project site:

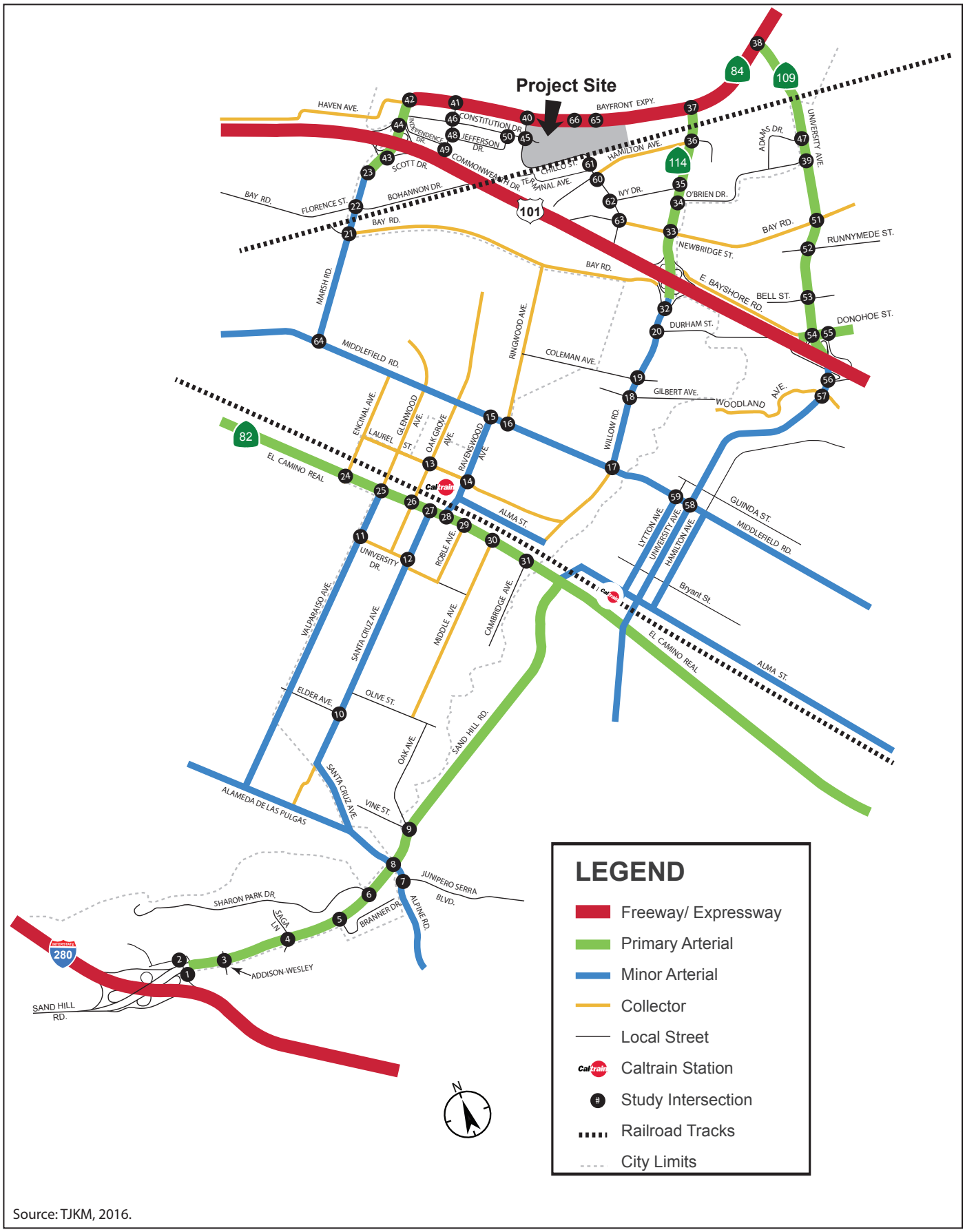
- Proposed Class III bicycle route on Hamilton Avenue, between Willow Road and an existing bicycle/pedestrian overcrossing of US 101 that connects with neighborhoods west of US 101 via Bay Road and Ringwood Avenue.
- Proposed Class II bicycle lanes on Chilco Street from Hamilton Avenue to the Dumbarton Rail Corridor, connecting with existing bicycle lanes on Chilco Street north of the Dumbarton Rail Corridor.
- Proposed Class II bicycle lanes on O'Brien Drive between Willow Road and University Avenue.
- Proposed Class I bicycle path on segments of the San Francisco Bay Trail (Bay Trail), on the north side of Bayfront Expressway.
- Proposed Class II bicycle lanes on segments of Oak Grove Avenue and El Camino Real near the Caltrain station.

Study Intersections and Roadway Segments

This study was prepared according to the methodology required by the City of Menlo Park's Transportation Impact Analysis (TIA) Guidelines. For the analysis, the City selected 64 study intersections that the Project may affect. Study intersection locations are illustrated in Figure 3.3-1.

The following study intersections were evaluated:

1. Sand Hill Road eastbound and Interstate (I) 280 northbound off-ramp
2. Sand Hill Road westbound and I-280 northbound on-ramp
3. Sand Hill Road and Addison-Wesley
4. Saga Road and Sand Hill Road
5. Branner Drive and Sand Hill Road
6. Sharon Park Drive and Sand Hill Road
7. Alpine Road/Santa Cruz and Junipero Serra Boulevard
8. Santa Cruz Avenue and Sand Hill Road
9. Oak Avenue/Vine Road and Sand Hill Road
10. Santa Cruz Avenue and Elder Avenue
11. Valparaiso Avenue and University Drive
12. Santa Cruz Avenue and University Drive (south)
13. Oak Grove Avenue and Laurel Street
14. Ravenswood Avenue and Laurel Street
15. Middlefield Road and Ravenswood Avenue
16. Middlefield Road and Ringwood Avenue
17. Middlefield Road and Willow Road
18. Willow Road and Gilbert Avenue



Source: TJKM, 2016.

Graphics ... 00296.15 (5-18-2016)

Figure 3.3-1
Existing Roadway Network and Study Intersections
Facebook Campus Expansion Project Draft EIR

19 Willow Road and Coleman Avenue
20 Willow Road and Durham Street
21 Marsh Road and Bay Road
22 Marsh Road and Bohannon Drive
23 Marsh Road and Scott Drive
24 El Camino Real and Encinal Avenue
25 El Camino Real and Glenwood Avenue
26 El Camino Real and Oak Grove Avenue
27 El Camino Real and Santa Cruz Avenue
28 El Camino Real and Ravenswood Avenue
29 El Camino Real and Roble Avenue
30 El Camino Real and Middle Avenue
31 El Camino Real and Cambridge Avenue
32 Willow Road and Bay Road
33 Willow Road and Newbridge Street
34 Willow Road and O'Brien Drive
35 Willow Road and Ivy Drive
36 Willow Road and Hamilton Avenue
37 Willow Road and Bayfront Expressway
38 Bayfront Expressway and University Avenue
39 University Avenue and O'Brien Drive
40 Bayfront Expressway and Chilco Street
41 Bayfront Expressway and Chrysler Drive
42 Bayfront Expressway and Marsh Road
43 Marsh Road and US 101 southbound (SB)
44 Marsh Road and US 101 northbound (NB)
45 Chilco Street and Constitution Drive
46 Chrysler Drive and Constitution Drive
47 University Avenue and Adams Drive
48 Chrysler Drive and Jefferson Drive
49 Chrysler Drive and Independence Drive
50 Jefferson Drive and Constitution Drive
51 University Avenue and Bay Road (East Palo Alto)
52 University Avenue and Runnymede Street (East Palo Alto)
53 University Avenue and Bell Street (East Palo Alto)

54 University Avenue and Donohoe Street (East Palo Alto)
55 US 101 NB ramps and Donohoe Street (East Palo Alto)
56 University Avenue and US 101 SB ramps (Eat Palo Alto)
57 University Avenue and Woodland Avenue (East Palo Alto)
58 University Avenue and Middlefield Road (Palo Alto)
59 Middlefield Road and Lytton Avenue (Palo Alto)
60 Chilco Street and Hamilton Avenue
61 Chilco Street and Terminal Avenue
62 Chilco Street and Ivy Drive
63 Chilco Street and Newbridge Street
64 Marsh Road and Middlefield Road (Atherton)

In addition, impacts on average daily traffic (ADT) on local roadway segments were analyzed, based on City of Menlo Park criteria. The City selected 87 study segments (consisting of roughly 30 arterial street segments, 50 collector street segments, and seven local street segments) along portions of the following 38 streets:

- Adams Drive
- Alameda de las Pulgas
- Alma Street
- Alpine Road
- Avy Avenue
- Bay Road
- Bohannon Drive
- Cambridge Avenue
- Chilco Drive
- Chrysler Drive
- Constitution Drive
- Crane Street
- Encinal Avenue
- Glenwood Avenue
- Hamilton Avenue
- Ivy Drive
- Junipero Serra Boulevard
- Lauren Street
- Linfield Avenue
- Marsh Road
- Menlo Avenue
- Middle Avenue
- Middlefield Road
- Newbridge Street
- Oak Grove Avenue
- O'Brien Drive
- Olive Street
- Ravenswood Avenue
- Ringwood Avenue
- Sand Hill Road
- Santa Cruz Avenue
- Scott Drive
- Sharon Park Drive
- Sharon Road
- University Drive
- Valparaiso Drive
- Waverly Street
- Willow Road

Routes of Regional Significance

The analysis of study intersections and study segments includes the following facilities, which are designated as Routes of Regional Significance by the San Mateo County Congestion Management Program (CMP). The applicable standards for the CMP facilities are summarized below.

Level-of-service (LOS) standards for CMP roadway segments:

- Bayfront Expressway from US 101 to Willow Road, LOS D
- Bayfront Expressway from Willow Road to University Avenue, LOS E
- Bayfront Expressway from University Avenue to the Alameda county line, LOS F
- SR 109 (University Avenue) from SR 84 to Kavanaugh Drive, LOS E
- SR 114 (Willow Road) from US 101 to SR 84, LOS E
- US 101, from Whipple Avenue to Santa Clara county Line, LOS F

LOS standards for CMP intersections:

- Bayfront Expressway from and University Avenue (SR 109), LOS F for the a.m. and p.m. peak hours
- Bayfront Expressway from and Willow Road (SR 114), LOS F for the a.m. and p.m. peak hours
- Bayfront Expressway from and Marsh Road, LOS F for the a.m. and p.m. peak hours

Vehicle Miles Traveled

In 2013, the California legislature passed Senate Bill 743, which requires changes to the guidelines for implementing the California Environmental Quality Act (CEQA) with respect to the analysis of transportation impacts. The latest draft guidelines and technical advisory[1] documents were issued by the Governor's Office of Planning and Research (OPR) on January 20, 2016. The proposed changes identify vehicle miles traveled (VMT) as the most appropriate metric for evaluating a project's transportation impacts. VMT is simply the miles traveled by vehicles in a specified area in a specified time period. It provides a metric that can evaluate both the amount and distance of vehicular travel. VMT is an important metric in the evaluation and management of travel and congestion on both a regional as well as a local level. For example, VMT is a key factor in determining GHG emissions from transportation sources because the level of travel activity is a determinant of energy use.

VMT was selected because it can better assess multi-modal transportation strategies, impacts of land uses near transit, and it is already used in CEQA to evaluate GHG emissions and air quality impacts. Although local agencies may continue to measure vehicle LOS for planning purposes, Senate Bill 743 directs a different measure for the evaluation of environmental impacts under CEQA. To address GHG policy goals, an analysis of VMT associated with development activity may yield a more relevant analysis tool than intersection or roadway LOS alone. The combination of VMT and LOS allows congestion, traffic operations, and GHG issues to be addressed. Furthermore, reducing VMT per capita is a stated target in Plan Bay Area, a policy document adopted by the Association of Bay Area Governments and the MTC in July 2013.

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[1] Governor's Office of Planning and Research. 2016. *Revised Proposal on Updates to the CEQA Guidelines on Evaluating Transportation Impacts in CEQA; Implementing Senate Bill 743 (Steinberg, 2013).* January 20. Available: https://www.opr.ca.gov/docs/Revised_VMT_CEQA_Guidelines_Proposal_January_20_2016.pdf.

In anticipation of the expected implementation of Senate Bill 743, this document includes an estimation of Project VMT on a per capita basis (based on number of employees) and a comparison with the regional average. As described above, VMT is a measure of the number of miles traveled by vehicles for a proposed development or area. VMT per capita is the VMT of the development or area divided by the population and the number of employees or jobs in the development or area.

Environmental Setting

This section describes existing transportation facilities in the vicinity of the Project site, including roadway facilities, bicycle and pedestrian facilities, and available transit service.

Roadway Network

The General Plan designates a roadway classification system for the existing roadway network in the city. It includes Freeway/Expressway, Primary Arterial, Minor Arterial, Collector, and Local. The existing roadway network that serves the study area is shown in Figure 3.3-1. The ConnectMenlo draft Circulation Element has proposed modifications to the street classification system, as described in the Regulatory Setting section, above. Detailed descriptions for key roadways are provided below.

Bayfront Expressway (SR 84)—Bayfront Expressway is a six-lane, east–west expressway that connects the peninsula with the east via the Dumbarton Bridge. Within the city of Menlo Park, it connects Marsh Road with the Dumbarton Bridge. On-street parking is not permitted on Bayfront Expressway, and the speed limit is 50 mph. A segment of the Bay Trail accommodates bicycle and pedestrian circulation adjacent to Bayfront Expressway.

Marsh Road—Marsh Road is an east–west roadway that connects Bayfront Expressway with Middlefield Road and US 101. Marsh Road has six motor vehicle lanes between Bayfront Expressway and US 101 and four motor vehicle lanes between US 101 and Fair Oaks Avenue. Marsh Road narrows to two lanes between Fair Oaks and Middlefield Road. There are no bicycle lanes on Marsh Road.

Chilco Street—Chilco Street is an east–west roadway with two motor vehicle lanes that connects Bayfront Expressway with the adjacent Belle Haven neighborhood. Bicycle lanes are provided on the portion of Chilco Street between Bayfront Expressway and the Dumbarton Rail Corridor. There were no sidewalks on the portion of Chilco Street between Constitution Drive and the Dumbarton Rail Corridor at the time this document was prepared.

Willow Road (SR 114)—Willow Road is an east–west roadway that connects Bayfront Expressway with US 101 and Middlefield Road. Between Bayfront Expressway and US 101, Willow Road is a Major Arterial with four motor vehicle lanes and bicycle lanes. Between US 101 and Middlefield Road, Marsh Road is a Minor Arterial with two motor vehicle lanes and bicycle lanes.

University Avenue (SR 109)—University Avenue is a four-lane, east–west Arterial Street that connects Bayfront Expressway with US 101 via East Palo Alto and US 101 with El Camino Real via downtown Palo Alto. Bicycle lanes are provided on University Avenue between Bayfront Expressway and Middlefield Road, except for a gap where University Avenue approaches and crosses US 101.

US 101 (Bayshore Freeway)—US 101 is an eight-lane, north–south freeway that runs between Los Angeles, California, and Olympia, Washington, and a major regional freeway on the San Francisco Peninsula. It connects Menlo Park with the other cities on the peninsula. There is one high-occupancy vehicle (HOV) lane in both directions through Menlo Park. Two interchanges serve Menlo Park (at Willow Road and Marsh Road).

Middlefield Road—Middlefield Road is a north–south Minor Arterial with two to four motor vehicle lanes that connects Mountain View, Palo Alto, Menlo Park, Atherton, and Redwood City. Bicycle lanes are provided on segments of Middlefield Road within Menlo Park.

El Camino Real (SR 82)—El Camino Real is a north–south Primary Arterial that connects San José with San Francisco. It enters Menlo Park north of Sand Hill Road as a six-lane arterial, becomes a four-lane arterial near downtown Menlo Park, and exits the city as a five-lane arterial (three southbound lanes and two northbound lanes) north of Encinal Avenue. There are no bicycle lanes on El Camino Real.

I-280 (Junipero Serra Freeway)—I-280 is an eight-lane, north–south freeway that connects San José with San Francisco. There is one HOV lane in both directions through Menlo Park. One interchange serves Menlo Park at Sand Hill Road.

Sand Hill Road—Sand Hill Road is an east–west Primary Arterial that connects El Camino Real with I-280.

Bicycle Facilities

Menlo Park has an existing bicycle network with connections to neighboring city facilities. The bicycle network contains a variety of facilities, labeled according to California's system of bikeway classification.

- Class I Bikeway – Bike paths within exclusive rights-of-way, sometimes shared with pedestrians
- Class II Bikeway – Bike lanes for bicycle use only that are striped within the paved area of roadways
- Class III Bikeway – Bike routes that are shared with motor vehicles on the street. Class III bikeways may be defined by a wide curb lane and/or use of a shared-use arrow stencil marking on the pavement, known as a "sharrow"
- Class IV Bikeway – Cycle tracks or separated bikeways that contain dedicated rights of way with physical separation, such as grade separation, flexible posts, or on-street parking

Bicycle lanes are provided on Willow Road, University Avenue, and a short portion of Chilco Street between Bayfront Expressway and the Dumbarton Rail Corridor. However, the Marsh Road, Willow Road, and University Avenue interchanges contain no bicycle facilities, and the lack of such connections may discourage bicycle trips between the Project site and destinations west of US 101, including the Caltrain station and downtown Menlo Park.

One existing bicycle and pedestrian connection toward Caltrain and the retail center of Menlo Park is provided via a bicycle/pedestrian bridge that crosses US 101 at Ringwood Avenue between the Belle Haven and Flood Park neighborhoods. The Bay Trail borders Bayfront Expressway. Existing bicycle network facilities that serve the study area are shown in Figure 3.3-2.

Pedestrian Facilities

The City's General Plan contains policies that support maintaining the existing pedestrian infrastructure and providing safe, efficient, and equitable use of streets by pedestrians through good roadway design. There is an additional policy in the General Plan that requires all new development to incorporate safe and attractive pedestrian facilities onsite.

Pedestrian facilities are limited, with many streets in the area bordering the Project site having partial or no sidewalks. The only street segment with sidewalks on both sides of the street is on the Marsh Road overpass at US 101. The Dumbarton Rail Corridor and US 101 also limit pedestrian access and isolate the Project site and Belle Haven neighborhood from the rest of the community.

Transit Service

Existing service directly serving the Project site includes the following:

- The private Facebook Shuttle travels to and from the Facebook Campus on Willow Road and Bayfront Expressway to the Menlo Park Caltrain station using Willow Road. The service operates on approximately 60-minute headways with service between 6:30 a.m. and 7:00 p.m. Long-distance shuttles provide direct service to the Facebook Campus from areas near where employees live.
- AC Transit's DB and DB1 Dumbarton Express routes cross the Dumbarton Bridge, with stops near the Project site on Willow Road. Both routes provide service between Menlo Park and the Union City Bay Area Rapid Transit (BART) station, with different operational hours.

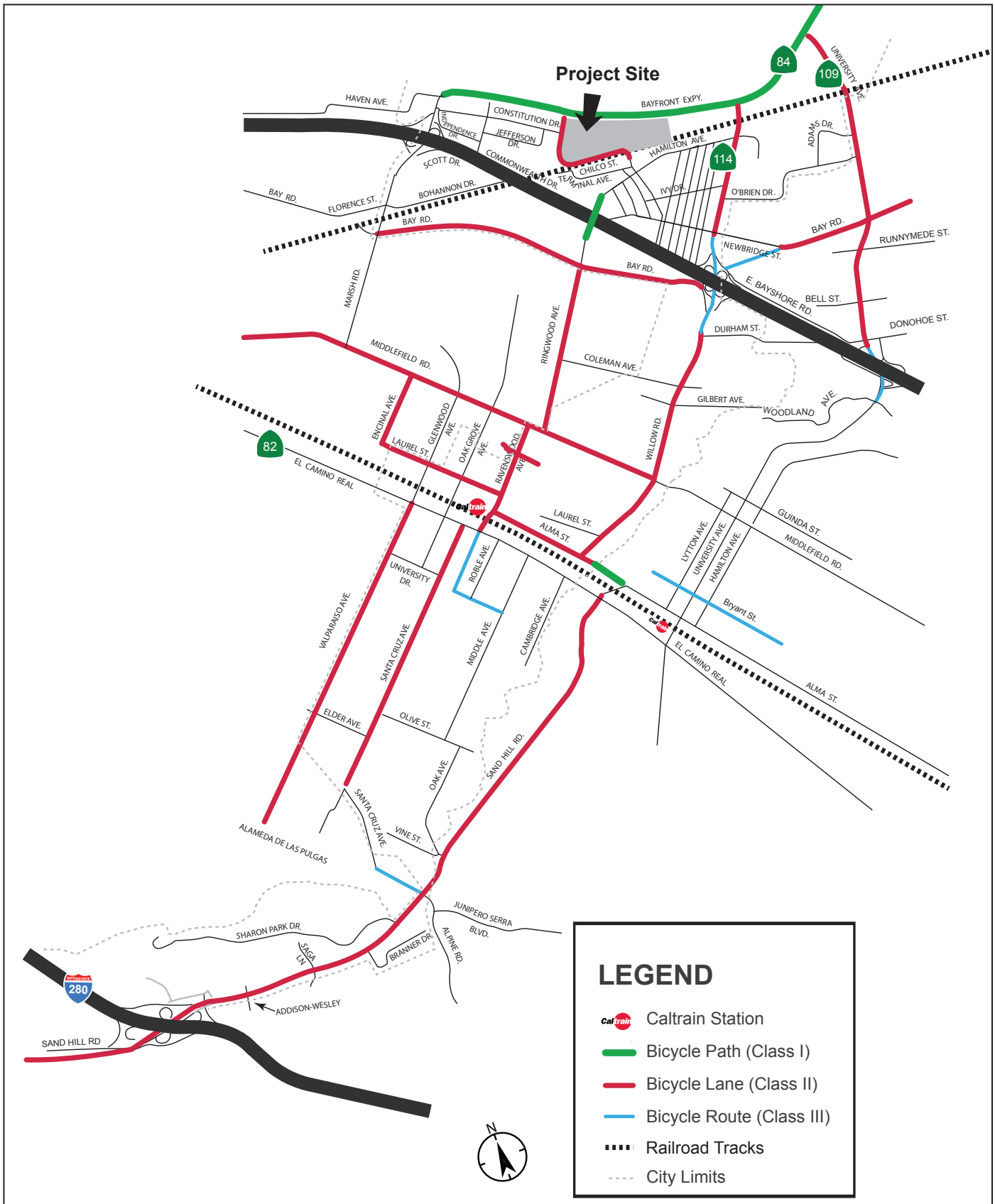
Additional transit service in the vicinity that does not directly serve the Project site includes the following bus routes:

- SamTrans provides bus service to areas south of the Project site with Route 270, Route 276, and several SamTrans shuttle routes. Route 270 serves Marsh Road and Haven Avenue and serves as a connection to the Redwood City Transit Center and Caltrain. Route 276 terminates at Marsh Road and serves the Redwood City Caltrain station. The Marsh Road Shuttle and Willow Road Shuttle, operated by the City of Menlo Park, connect several offices in the area with the Menlo Park Caltrain station via Marsh Road and Willow Road, respectively.
- The City of Menlo Park Midday Shuttle serves the Menlo Park Senior Center, located south of the Dumbarton Rail Corridor, and travels to several retail areas in downtown Menlo Park. SamTrans Route 281 terminates at the Onetta Harris Community Center, located just south of the Dumbarton Rail Corridor. The route connects downtown Palo Alto and the Stanford Shopping Center.

Caltrain services the Menlo Park station with three types of commuter rail service: Local, Limited Stop, and Baby Bullet. During peak hours, Caltrain runs Local and Limited Stop service every 6 to 54 minutes, with an average interval of 32 minutes. For northbound service, three Baby Bullet trains operate during the evening peak; southbound trains have Baby Bullet service during the morning peak. Caltrain allows residents to connect with job centers around the Silicon Valley as well as San Francisco and San José.

Additional SamTrans bus routes operate within the city limits. These routes fall under three categories: routes that connect Caltrain stations, routes that connect Caltrain and BART stations, and school-day-only routes. The following routes provide service to Caltrain stations:

- Route 270: Serves the area near Marsh/Haven and Bayfront Expressway; travels to Redwood City Transit Center
- Route 276: Travels to Redwood City Transit Center, Kaiser Hospital, and Redwood City Hall via Marsh/Haven/Bayfront Expressway
- Route 281: Serves the Palo Alto Transit Center at downtown Palo Alto Caltrain station, University Village Shopping Center, and Onetta Harris Community Center
- Route 286: Connects to Menlo-Atherton High School, Menlo Park Caltrain station, and La Entrada Middle School
- Route 296: Serves Menlo Park Caltrain station, VA Medical Center, Redwood City Caltrain station, Sequoia High School, and East Palo Alto
- Route 297: Connects to University Village Shopping Center, VA Medical Center, Palo Alto Transit Center, and Redwood City Transit Center



Source: TJKM, 2016.

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Figure 3.3-2
Existing Bicycle Network
Facebook Campus Expansion Project Draft EIR

Existing Traffic Volumes and LOS

Daily Traffic Volumes on Study Segments

Existing daily traffic volumes on study segments are shown in Appendix 3.3-2, including the name and number of each segment, segment boundaries, the jurisdiction in which it is located, and the current street classification (Primary Arterial, Minor Arterial, Collector, or Local). Key findings, based on a review of existing daily traffic volumes at study segments, as applicable by street classification, are as follow:

- **City Arterials**: City arterial streets that carry more than 18,000 daily vehicles include Willow Road (41,200 daily vehicles between Coleman Avenue and Durham Street), Marsh Street (32,700 daily vehicles between Bohannon and Scott Drive), Sand Hill Road (30,800 daily vehicles between Sharon Park Drive and Santa Cruz Avenue), Ravenswood Avenue (24,600 daily vehicles between El Camino Real and Alma Street), and Middlefield Road (19,700 daily vehicles between Willow Road and Ravenswood Avenue). Arterial streets that carry fewer than 18,000 daily vehicles include segments of Santa Cruz Avenue, where volumes range from 7,000 to just over 15,000 daily vehicles, and Alameda de las Pulgas, which carries 12,500 vehicles near Santa Cruz Avenue.
- **City Collectors**: Four out of 50 collector study segments exceed 9,000 daily vehicles under existing conditions. The majority of collector study segments carry between 3,000 and 9,000 daily vehicles.
- **Local Streets**: Six out of the seven local street study segments carry more than 1,350 daily vehicles under existing conditions, with volumes ranging from 1,600 daily vehicles on Cambridge Avenue to 3,200 daily vehicles on Ivy Drive; the seventh local street segment, Adams Drive, currently carries just under 1,300 daily vehicles.

Study Intersections

Figures 3-3.3 through 3.3-5 illustrate the existing lane configurations and traffic controls at each study intersection. Figures 3.3-6 through 3.3-8 illustrate the peak-hour vehicle turning movement volumes at each study intersection under existing conditions.

Intersection LOS Definitions

The operational performance of a roadway network is commonly described with the term "level of service," or LOS. LOS is a qualitative description of operating conditions, ranging from LOS A (free-flow traffic conditions with little or no delay) to LOS F (oversaturated conditions where traffic flows exceed design capacity, resulting in long queues and delays). The LOS analysis methods outlined in the *Highway Capacity Manual* (Transportation Research Board 2010) were used in this study. This methodology provides for more reliable analysis of actual intersection operations by incorporating elements such as the signal timing plan, the effects of pedestrians on signal phase duration, traffic volume peaking characteristics, motorist behavioral characteristics, and others.

The 2010 *Highway Capacity Manual* is used to assess intersection operations and define impacts. It also allows mitigation measures to be defined, such as lengthening or adding turning lanes, modifying the signal phasing or timing, or other options. The *Highway Capacity Manual* methods for calculating LOS for signalized and unsignalized intersections are described below.

Signalized Intersections: Traffic operations at signalized intersections are evaluated using the LOS method described in the 2010 *Highway Capacity Manual*. A signalized intersection's LOS is based on the weighted average control delay, measured in seconds per vehicle. Control delay includes initial deceleration delay, queue move-up time, stopped delay, and final acceleration.

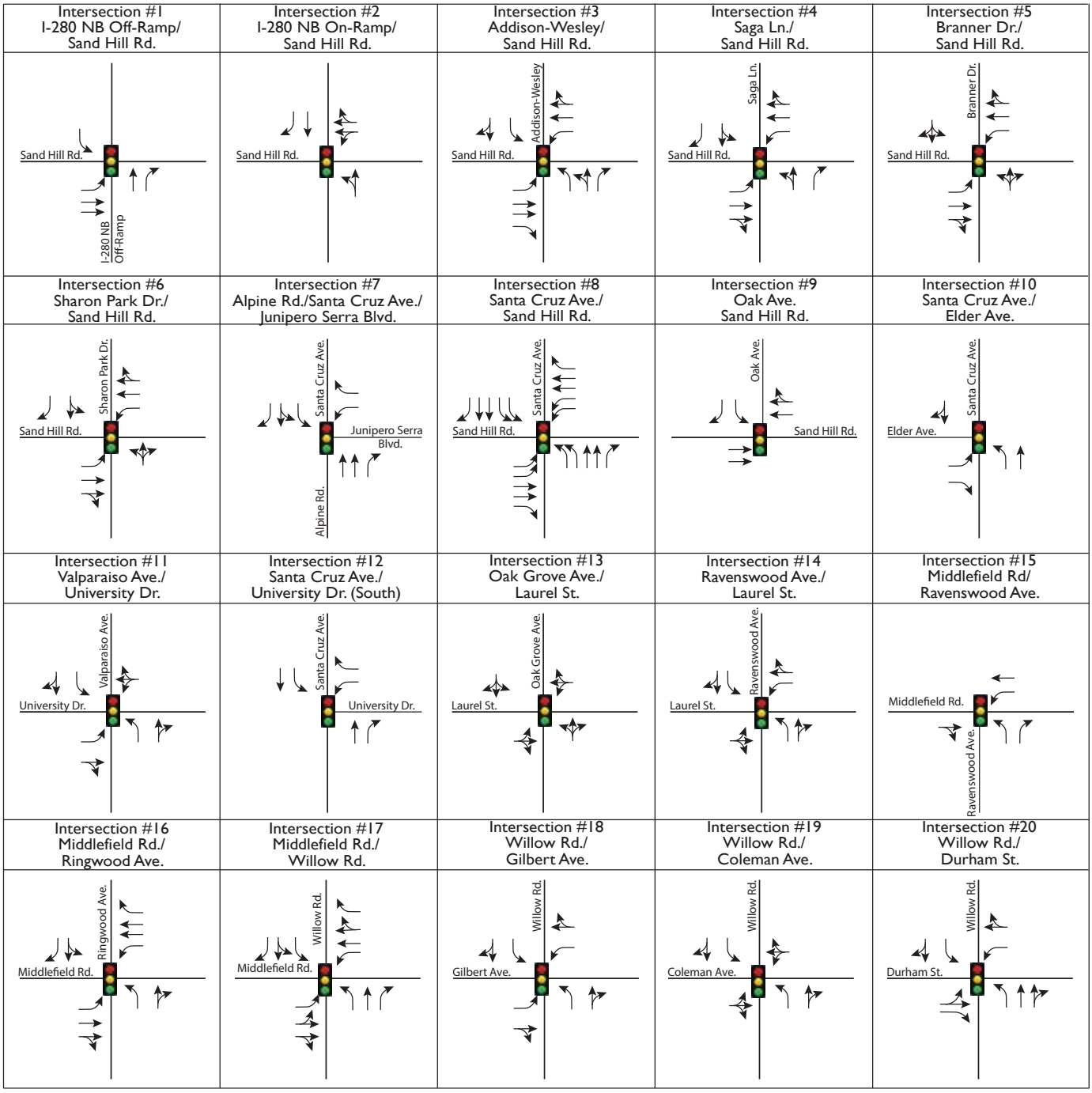
Table 3.3-1 summarizes the relationship between the control delay and LOS for signalized intersections.

Table 3.3-1. LOS Definitions for Signalized Intersections

Level of Service	Description
A	Very low control delay (up to 10 seconds per vehicle). Progression is extremely favorable, and most vehicles arrive during the green phase. Many vehicles do not stop at all. Short cycle lengths may tend to contribute to low delay values.
B	Control delay greater than 10 and up to 20 seconds per vehicle. There is good progression or short cycle lengths or both. More vehicles stop, causing higher levels of delay.
C	Control delay greater than 20 and up to 35 seconds per vehicle. Higher delays are caused by fair progression or longer cycle lengths or both. Individual cycle failures may begin to appear. Cycle failure occurs when a given green phase does not serve queued vehicles and overflow occurs. The number of vehicles stopping is significant, though many still pass through the intersection without stopping.
D	Control delay greater than 35 and up to 55 seconds per vehicle. The influence of congestion becomes more noticeable. Longer delays may result from some combination of unfavorable progression, long cycle lengths, or high volumes. Many vehicles stop; the proportion of vehicles not stopping declines. Individual cycle failures are noticeable.
E	Control delay greater than 55 and up to 80 seconds per vehicle. The limit of acceptable delay. High delays usually indicate poor progression, long cycle lengths, and high volumes. Individual cycle failures are frequent.
F	Control delay in excess of 80 seconds per vehicle. Unacceptable to most drivers. Oversaturation. Arrival flow rates exceed the capacity of the intersection. Many individual cycle failures. Poor progression and long cycle lengths may also be contributing factors to higher delay.

Unsignalized Intersections: The LOS for unsignalized intersections (side-street or all-way stop-controlled intersections) is also defined by the average control delay per vehicle (measured in seconds). The control delay incorporates delay associated with deceleration, acceleration, stopping, and moving up in the queue. For side-street stop-controlled intersections, delay is calculated for each stop-controlled movement and uncontrolled left turns, if any, from the main street. At side-street stop-controlled intersections, delay and LOS are reported for the worst movement. At all-way stop-controlled intersections, delay and LOS are reported based on the intersection average, including all approaches.

Table 3.3-2 summarizes the relationship between delay and LOS for unsignalized intersections. Delay ranges for unsignalized intersections are lower than those for signalized intersections because drivers expect less delay at unsignalized intersections.



Source: TJKM, 2016.

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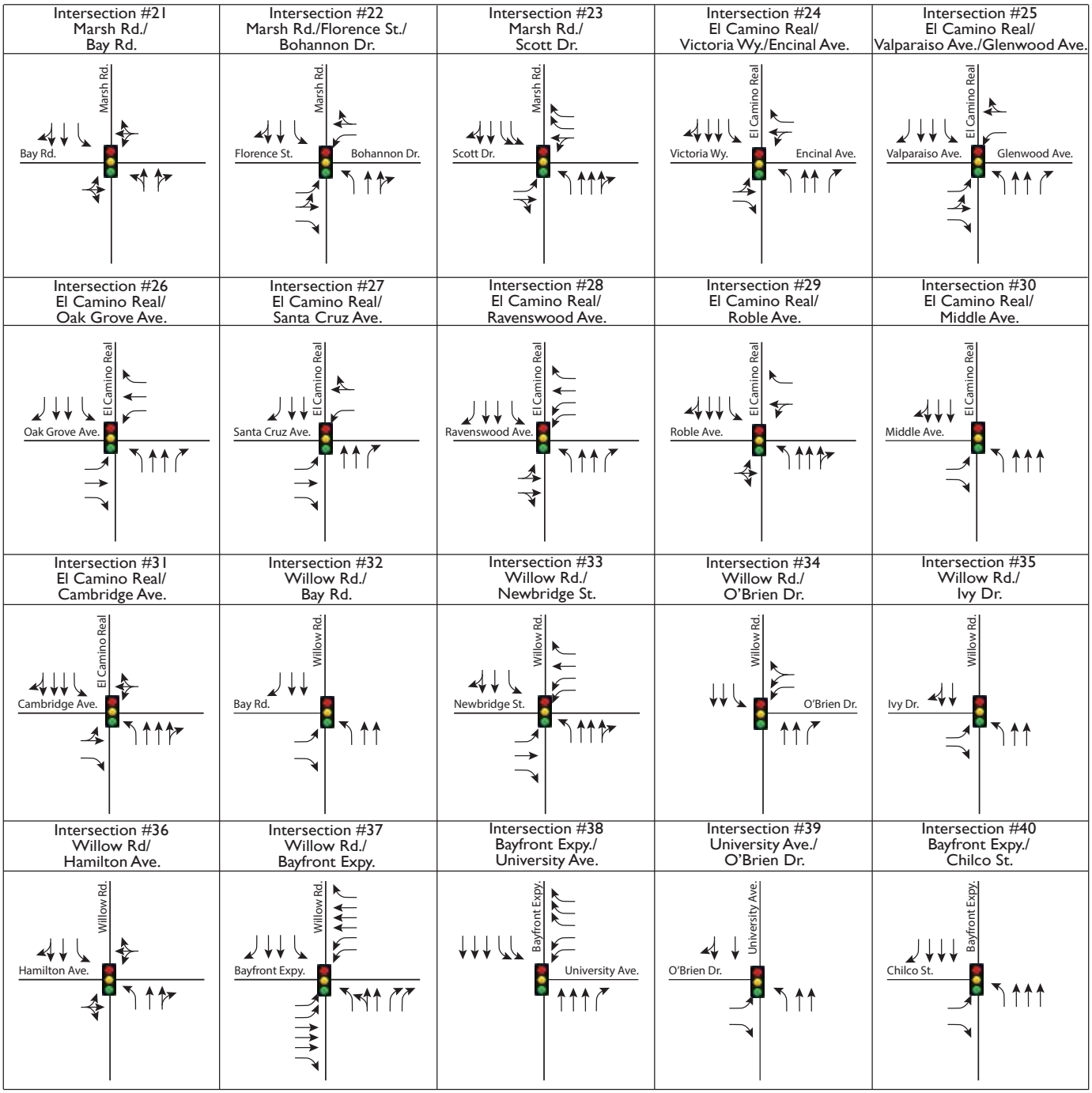
Figure 3.3-3
Existing Lane Geometry and Signal Controls
Facebook Campus Expansion Project Draft EIR



Source: TJKM, 2016.

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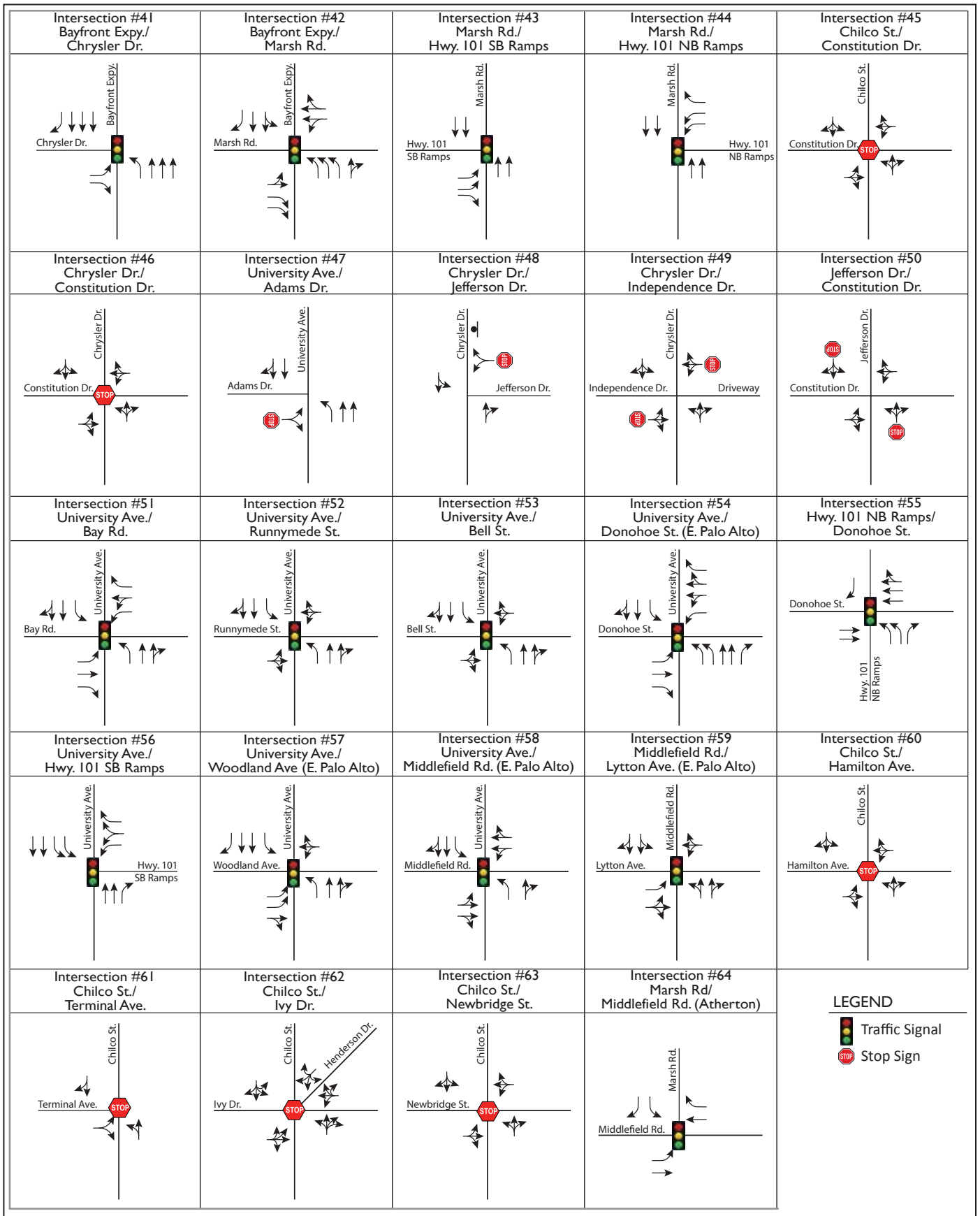
Figure 3.3-4
Existing Lane Geometry and Signal Controls
Facebook Campus Expansion Project Draft EIR



Source: TJKM, 2016.

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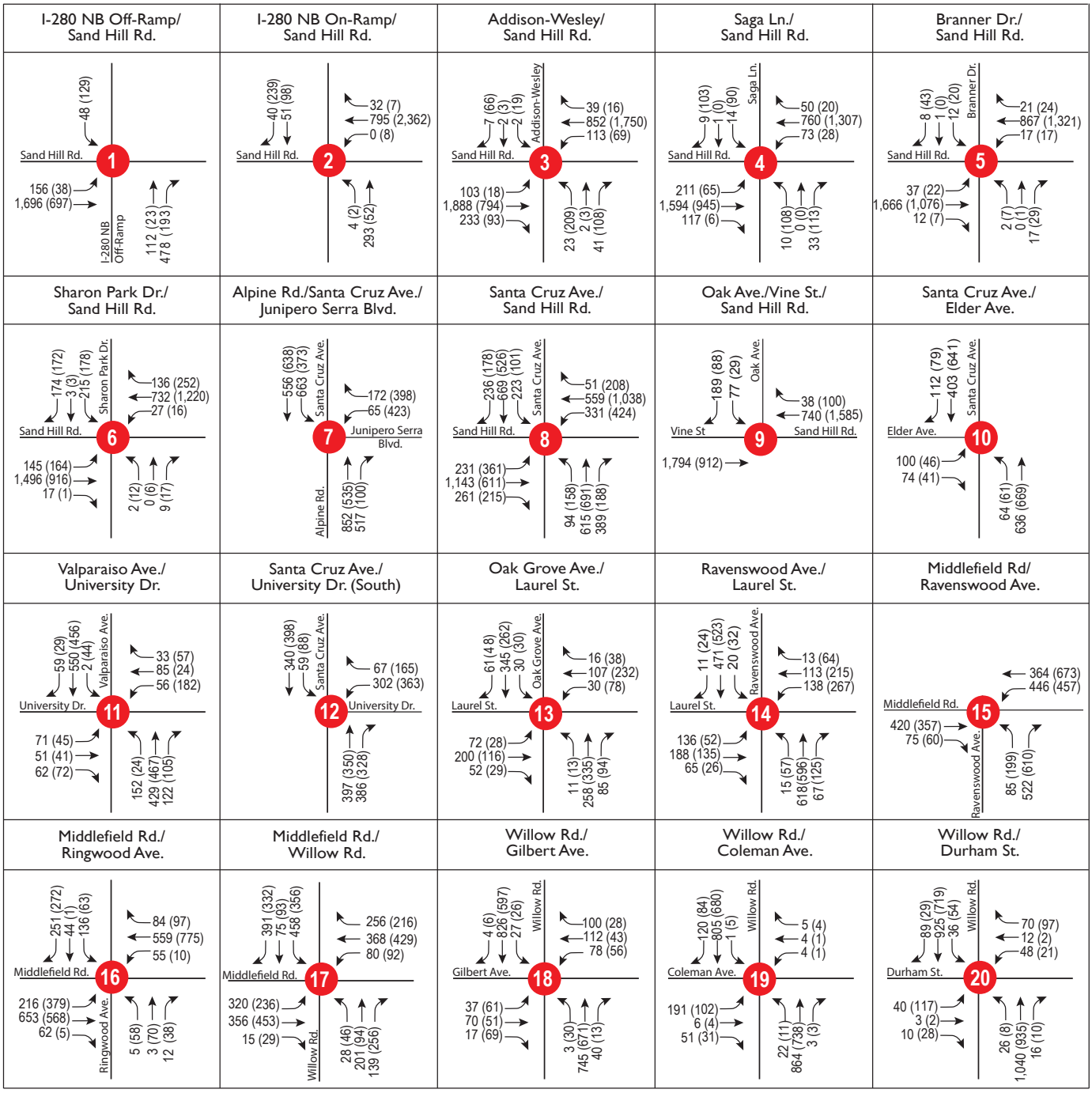
Figure 3.3-5
Existing Lane Geometry and Signal Controls
Facebook Campus Expansion Project Draft EIR



LEGEND

Study Intersection

AM (PM) Peak Hour Traffic Volumes

Source: TJKM, 2016.

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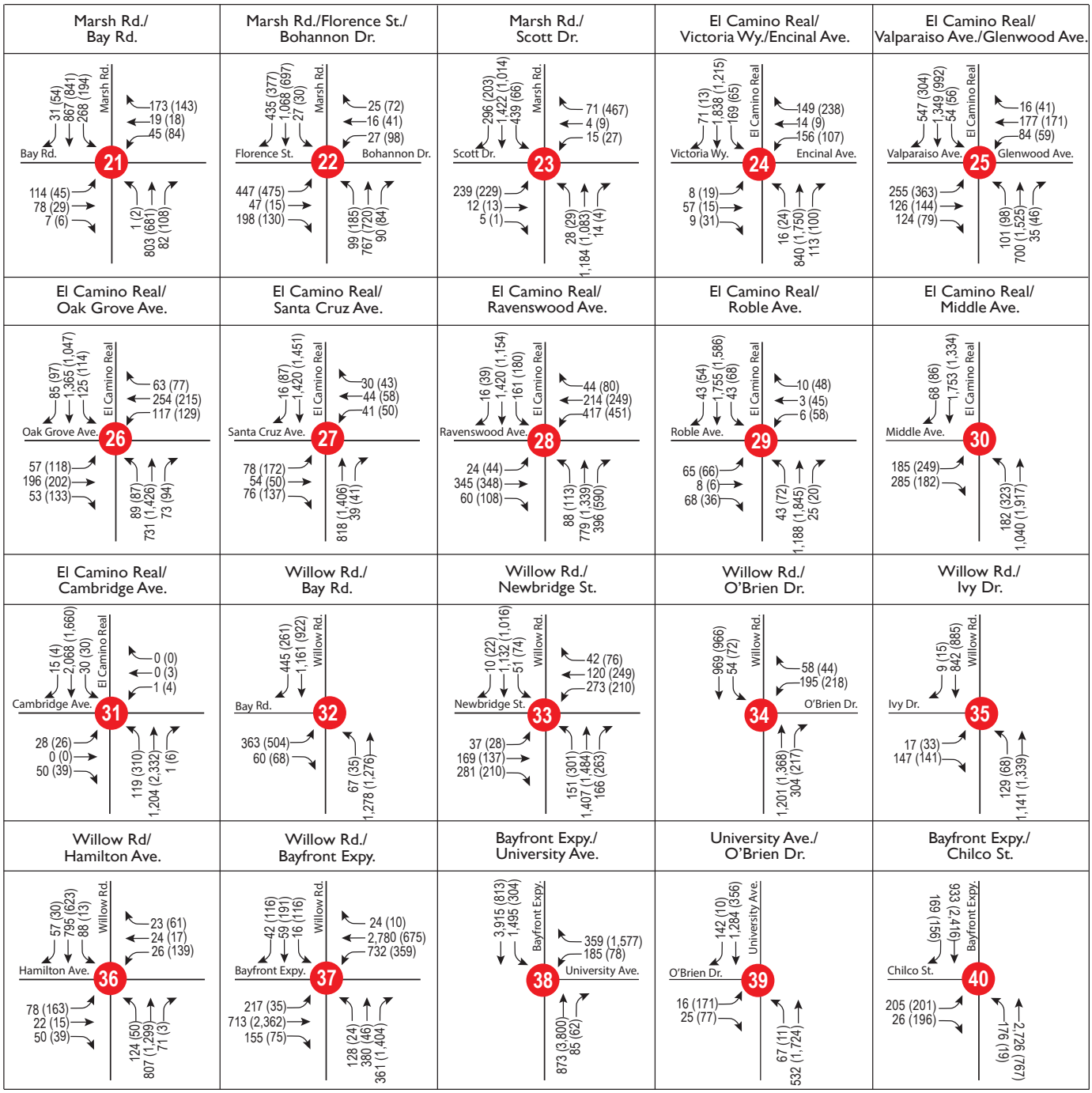
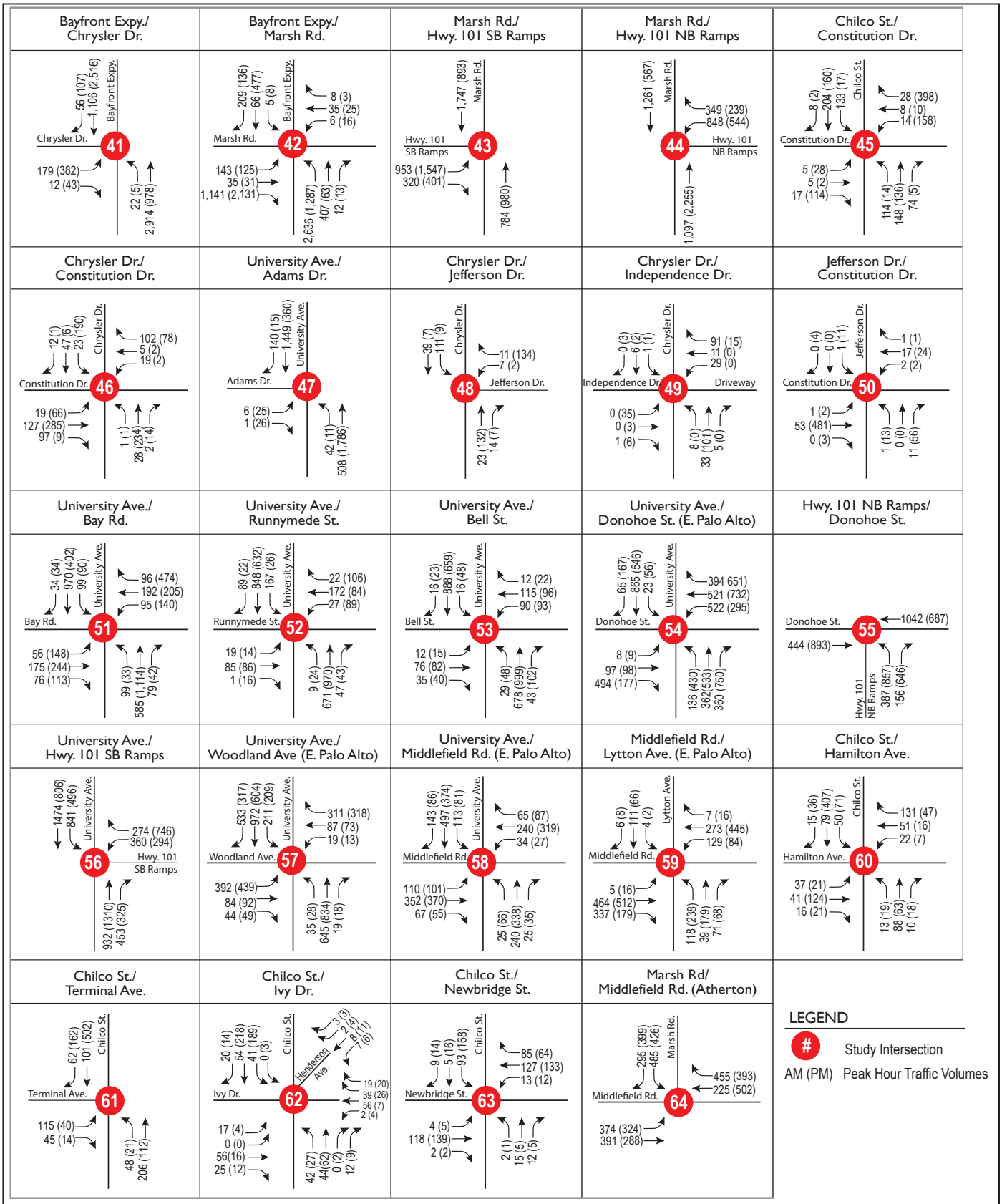
Figure 3.3-6
Existing Conditions Traffic Volumes
Facebook Campus Expansion Project Draft EIR



Source: TJKM, 2016.

Graphics ... 00296.15 (5-18-2016)

Figure 3.3-7
Existing Conditions Traffic Volumes
Facebook Campus Expansion Project Draft EIR



Source: TJKM, 2016.

Graphics ... 00296.15 (5-18-2016)

Figure 3.3-8
Existing Conditions Traffic Volumes
Facebook Campus Expansion Project Draft EIR

Table 3.3-2. LOS Definitions for Stop-controlled Intersections

Level of Service	Description
A	Very low control delay (less than 10 seconds per vehicle for each movement subject to delay).
B	Low control delay (greater than 10 and up to 15 seconds per vehicle for each movement subject to delay).
C	Acceptable control delay (greater than 15 and up to 25 seconds per vehicle for each movement subject to delay).
D	Tolerable control delay (greater than 25 and up to 35 seconds per vehicle for each movement subject to delay).
E	Limit of tolerable control delay (greater than 35 and up to 50 seconds per vehicle for each movement subject to delay).
F	Unacceptable control delay (in excess of 50 seconds per vehicle for each movement subject to delay).

Existing Conditions Intersection LOS Findings

The existing operations of the study intersections were evaluated for the highest 1-hour volume during the weekday morning and evening peak periods. The City of Menlo Park provided turning movement counts for each study intersection as well as signal timing sheets for each signalized study intersection where available. Turning movement counts for vehicles, bicycles, and pedestrians were conducted during typical weekday a.m. and p.m. peak periods (7:00 to 9:00 a.m. and 4:00 to 6:00 p.m., respectively) at the study intersections in fall 2014. Appendix 3.3-3 includes all data sheets for the collected vehicle, bicycle, and pedestrian counts. Detailed LOS calculations are contained in Appendix 3.3-4. Traffic operations for each study intersection were evaluated under existing conditions for the weekday a.m. and p.m. peak hour, based on the turning movement count data. Existing lane configurations, signal timings, and peak-hour turning movement volumes were used to calculate the levels of service for the study intersections during each peak hour.

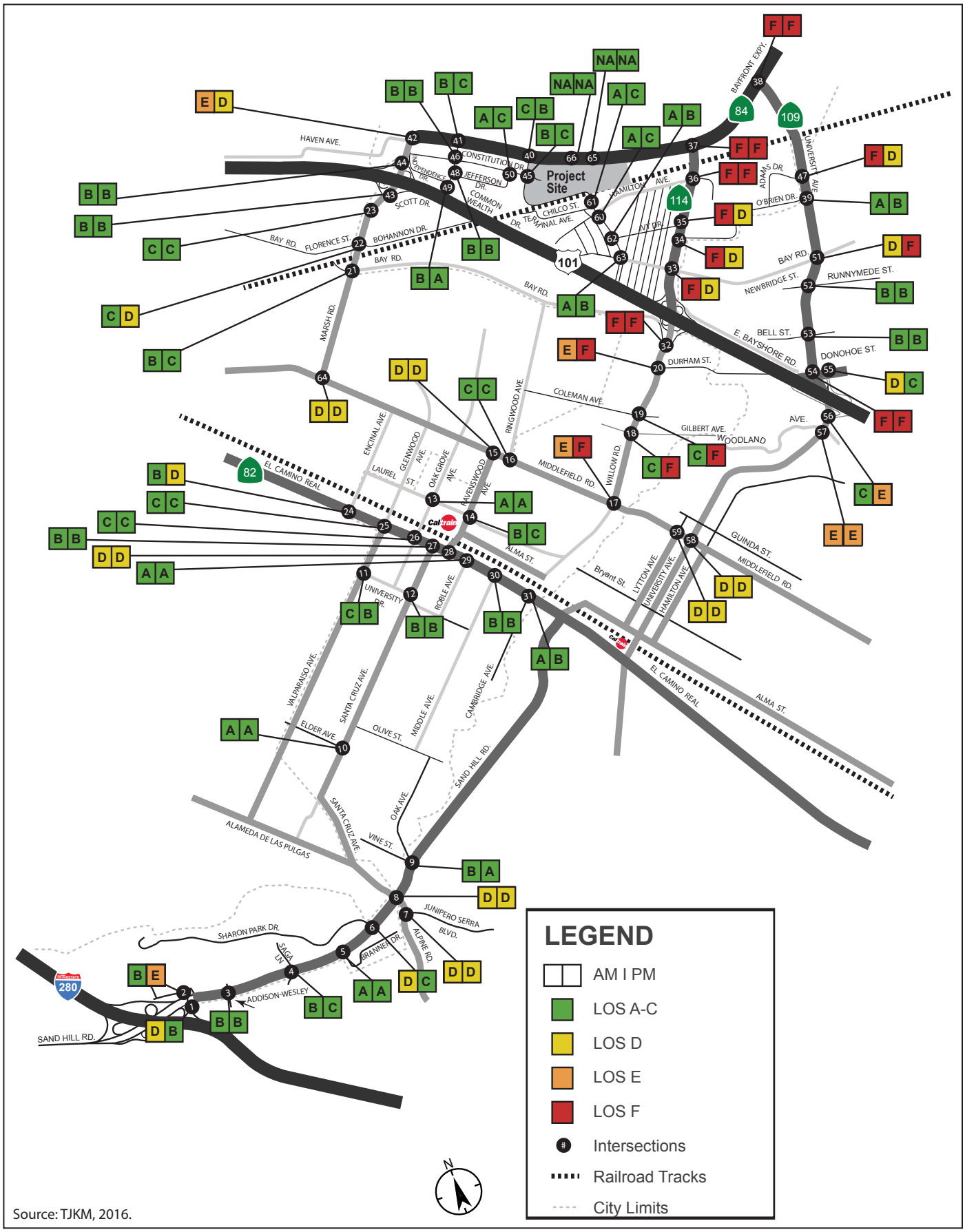
Figure 3.3-9 illustrates the peak-hour LOS for each study intersection under existing conditions. Average delay at each intersection is summarized in the detailed tables provided in Appendix 3.3-1. According to the LOS analysis, the following 18 study intersections operate unacceptably under existing conditions during the a.m. and/or p.m. peak hours, as described below:

- Sand Hill Road and the I-280 northbound on-ramp (study intersection #2) – p.m.
- Willow Road and Middlefield Road (#17) – a.m. and p.m.
- Willow Road and Gilbert Avenue (#18) – p.m.
    - During the p.m. peak hour, this finding reflects unserved demand due to both upstream and downstream congestion that is not reflected in the peak-hour traffic volume counts at this location and, thus, results in additional delay that is not measured by the VISTRO calculations.
- Willow Road and Coleman Avenue (#19) – p.m.
    - During the p.m. peak hour, this finding reflects unserved demand.

- Willow Road and Durham Street (#20) – a.m. and p.m.
  - During both the a.m. and p.m. peak hours, this finding reflects unserved demand.
- Willow Road and Bay Road (#32) – a.m. and p.m.
  - During both the a.m. and p.m. peak hours, this finding reflects unserved demand.
- Willow Road and Newbridge Street (#33) – a.m.
  - During the a.m. peak hour, this finding reflects unserved demand due to upstream and downstream queues (southbound approaching the US 101 ramps).
- Willow Road and O'Brien Drive (#34) – a.m.
  - During the a.m. peak hour, this finding reflects unserved demand due to upstream and downstream queues (southbound approaching the US 101 ramps).
- Willow Road and Ivy Drive (#35) – a.m.
  - During the a.m. peak hour, this finding reflects unserved demand due to upstream and downstream queues (southbound approaching the US 101 ramps).
- Willow Road and Hamilton Avenue (#36) – a.m. and p.m.
  - During both the a.m. and p.m. peak hours, this finding reflects unserved demand.
- Willow Road and Bayfront Expressway (#37) – a.m. and p.m.
  - During the p.m. peak hour, this finding reflects unserved demand that affects northbound right-turn movements.
- University Avenue and Bayfront Expressway (#38) – a.m. and p.m.
  - During the a.m. peak hour, this finding reflects unserved demand that affects westbound left-turn movements.
- Marsh Road and Bayfront Expressway (#42) – a.m.
- University Avenue and Adams Drive (#47) – a.m.
  - LOS at this stop-controlled intersection reflects delay due to the low-volume side street where it approaches the stop sign.
- University Avenue and Bay Road (#51) – p.m.
- University Avenue and Donohoe Street (#54) – a.m. and p.m.
- University Avenue and US 101 southbound ramps (#56) – p.m.
- University Avenue and Woodland Avenue (#57) – a.m. and p.m.

Environmental Impacts

This section describes the impact analysis for the Project related to transportation. It discusses the methods that were used to determine the impacts of the Project and lists the thresholds that were used to conclude whether an impact would be significant. Measures to mitigate (i.e., avoid, minimize, rectify, reduce, eliminate, or compensate for) significant impacts accompany each impact discussion.



Source: TJKM, 2016.

Graphics ... 00296.15 (5-18-2016)

Figure 3.3-9
Intersection LOS – Existing Conditions
Facebook Campus Expansion Project Draft EIR

Thresholds of Significance

Appendix G of the CEQA Guidelines includes significance criteria for potential transportation impacts. These include criteria related to whether a project would result in one of the following:

- Conflict with an applicable plan, ordinance, or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation, including mass transit and non-motorized travel, and relevant components of the circulation system, including, but not limited to, intersections, streets, highways and freeways, bicycle and pedestrian paths, and mass transit.
- Conflict with an applicable CMP, including, but not limited to, LOS standards and travel demand measures or other standards established by the county congestion management agency for designated roads or highways.
- Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks.
- Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment).
- Result in inadequate emergency access.
- Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities or otherwise decrease the performance or safety of such facilities.

The Project analysis includes facilities within the jurisdiction of the Menlo Park, Atherton, East Palo Alto, Palo Alto, and Caltrans. The transportation items of the CEQA Guidelines checklist are addressed through these local, regional, and state guidelines. As such, the appropriate standard of significance is applied to respective intersections, roadway segments, or Routes of Regional Significance, as defined in the section below.

Transportation Impact Criteria

The City of Menlo Park, Town of Atherton, City of East Palo Alto, City of Palo Alto, and Caltrans each have transportation impact guidelines and standards of significance. The transportation items of the CEQA Guidelines checklist are addressed through these local, regional, and state guidelines. The Project analysis includes City of Menlo Park, Town of Atherton, City of East Palo Alto, City of Palo Alto, and Caltrans facilities. As such, the appropriate standard of significance is applied to respective intersections, roadway segments, or Routes of Regional Significance. The following standards of significance are prescribed by the City of Menlo Park, Town of Atherton, City of East Palo Alto, City of Palo Alto, and Caltrans. Additionally, the *Revised Proposal on Updates to the CEQA Guidelines on Evaluating Transportation Impacts in CEQA* from the Governor's Office of Planning and Research defines potential thresholds for assessing VMT, as described below. Impacts would be potentially significant if the conditions described below were to occur.

City Arterial Intersections. Project traffic increment causes an intersection that operates at LOS D or better to reach LOS E or F, increases average vehicle delay by more than 23 seconds, or increases vehicle delay for the most critical movements at an arterial intersection that operates at LOS E or F prior to the addition of Project traffic by more than 0.8 second.

Local Approaches to State-Controlled Intersections. Project traffic increment causes an intersection that operates at LOS D or better to reach LOS E or F, increases average vehicle delay by more than 23 seconds, or increases vehicle delay for the most critical movements at an arterial intersection that operates at LOS E or F prior to the addition of Project traffic by more than 0.8 second.

Other City Intersections (Collector and Local Streets). Project traffic increment causes an intersection that operates at LOS C or better to reach LOS D, E, or F; increases average vehicle delay by more than 23 seconds; or increases vehicle delay for the most critical movements at a collector or local street intersection that operates at LOS E or F prior to the addition of Project traffic by more than 0.8 second.

State- (Caltrans) Controlled Intersections. At state-controlled intersections that currently operate at LOS D or better, the Project would have an impact if the cumulative analysis were to indicate that the combination of the Project and future cumulative traffic demand would result in the intersections operating at an LOS that would violate the adopted standard and the Project would increase control delay at the intersections by 4 seconds or more. For intersections that operate at LOS E or F, the Project would have an impact if the cumulative analysis were to indicate that the combination of the Project and future cumulative traffic demand would increase average control delay at the intersection by 4 seconds or more.

Atherton Intersections. At Town of Atherton–controlled intersections that currently operate at LOS D or better, the Project would have an impact if the Project traffic increment were to result in an intersection LOS of E or F or, if the LOS is currently E or F, increase the critical worst-approach delay by 4 seconds or more.

Palo Alto and East Palo Alto Intersections. At Palo Alto and East Palo Alto–controlled intersections that currently operate at LOS D or better, the Project would have an impact if LOS were to deteriorate to E or F or, if the LOS is currently E or F, the average control delay for critical movements were to deteriorate by 4 seconds or more and the critical volume-to-capacity (v/c) ratio value increase by 0.01 or more.

Routes of Regional Significance. LOS standards for freeway segments are based on the San Mateo City and County Association of Governments (C/CAG) impact criteria from the 2015 CMP. According to the CMP, for a freeway segment that is currently in compliance with the adopted LOS standard, a project would have an impact if it were to cause the segment to operate at an LOS that would violate the adopted standard. Additionally, a project would have an impact if the cumulative analysis were to indicate that the combination of the Project and future cumulative traffic demand would result in the segment operating at an LOS that would violate the adopted standard. An impact could also occur if the Project were to increase traffic demand on a freeway segment's capacity by 1 percent or more or cause the freeway segment's v/c ratio to increase by 1 percent. If the freeway segment is not in compliance with the adopted LOS standard, the Project would have an impact if it were to add traffic demand equal to 1 percent or more of the capacity of the segment or cause the freeway segment's v/c ratio to increase by 1 percent.

City Arterials. The existing ADT is (1) greater than 18,000 (90 percent of capacity) and the net increase in Project-related ADT is 100 or more trips, (2) the ADT is greater than 10,000 (50 percent of capacity) but less than 18,000 and Project-related traffic increases the ADT by 12.5 percent or the ADT becomes 18,000 or more, or (3) the ADT is less than 10,000 and Project-related traffic increases the ADT by 25 percent.

City Collectors. The existing ADT is (1) greater than 9,000 (90 percent of capacity) and the net increase in Project-related ADT is 50 or more trips, (2) the ADT is greater than 5,000 (50 percent of capacity) but less than 9,000 and Project-related traffic increases the ADT by 12.5 percent or the ADT becomes 9,000 or more, or (3) the ADT is less than 5,000 and Project-related traffic increases the ADT by 25 percent.

Local Streets. The existing ADT is (1) greater than 1,350 (90 percent of capacity) and the net increase in Project-related ADT is 25 or more trips, (2) the ADT is greater than 750 (50 percent of capacity) but less than 1,350 and Project-related traffic increases the ADT by 12.5 percent or the ADT becomes 1,350, or (3) the ADT is less than 750 and Project-related traffic increases the ADT by 25 percent. For City of Palo Alto–controlled local streets, Project-related traffic increases the Traffic Infusion on Residential Environment (TIRE) index by 0.1 or more.

Bicycle and Pedestrian Facilities. The Project would not provide adequate pedestrian or bicycle facilities that would connect with the area's circulation system; vehicles would cross pedestrian facilities on a regular basis that have inadequate designs and/or warning systems, causing safety hazards; or the Project design would increase the potential for bicycle/vehicle conflicts. In addition, the Project would include elements that would conflict with applicable bicycle and pedestrian polices.

Transit. The Project would generate a substantial increase in the number of transit riders, riders who could not be adequately serviced by existing transit services, or the Project would generate demand for transit services in an area that is more than 0.25 mile from existing transit routes. In addition, the Project would include elements that would conflict with applicable transit polices.

VMT. The Project would result in VMT per employee that would exceed a level 15 percent below existing VMT per employee for the region. For purposes of this analysis, because the Project Sponsor would draw employees from much of the Bay Area, the nine-county Bay Area region is considered for the regional average. Data from the 2013 Plan Bay Area environmental impact report were used to determine regional average VMT per employee.

Impacts Not Evaluated in Detail

Air traffic impacts were not evaluated because the Project does not contain elements that would result in a change to air traffic patterns.

Methods for Analysis

Travel Demand Modeling Methodology

Menlo Park Model: A new citywide travel demand model, the Menlo Park Model (MPM), was developed for purposes of developing traffic forecasts for the Project and the ConnectMenlo General Plan Update. The MPM is based on the latest C/CAG model, which was received on July 19, 2015. Three model years of the C/CAG model were obtained (2013, 2020, and 2040), and the same land use data category, modeling technical assumptions, time of day, and regional origin/destination travel patterns that were used in the C/CAG model were maintained in the MPM model to ensure consistency with regional forecasts.

Zonal details in the Menlo Park city area were enhanced by nesting them within the C/CAG model's refined traffic analysis zones (TAZs) to guarantee interoperability between the new TAZ structure and the regional model's TAZs. The City provided the new TAZ boundary definition. The number of TAZs within city boundaries increased from 24 in the C/CAG model to 80 in the MPM. The new TAZ structure provides the detailed information required to support the traffic analysis in the General Plan Circulation

Element Update and the Project. The General Plan land use data in the refined TAZs were provided by the City. The General Plan land use data were converted into C/CAG model land use classifications by assuming the same allocation percentages as in the parent C/CAG TAZ. For example, if the single-family household (SFHH) to multi-family household (MFHH) ratio was 60/40 in the parent C/CAG TAZ, the same 60/40 ratio was used to allocate total households (HH) into SFHH and MFHH in all MPM TAZs that were nested within this parent C/CAG TAZ.

The enhancement of network details for local streets in the study area was based on the latest MTC Travel Model Two (TM2) network. The roadway network in the MTC TM2 network was developed from the TomTom (previously TeleAtlas) North America routable network database. The key link attributes required for demand modeling, such as facility type, area type, and link class, were coded to be consistent with the C/CAG model.

Dynamic Traffic Assignment

A well-known issue with static traffic assignment in traditional travel demand models is the overestimation of link volumes because physical congestion was not represented in vehicle routing. It is not unusual to see unrealistic v/c ratios, sometimes greater than 1.5, in future conditions. This overestimation issue is especially problematic during peak-hour congestion because not all trips can reach their destinations during the peak hour. A new Dynamic Traffic Assignment (DTA) methodology that simulates the progression of vehicles in a network, with physical congestion explicitly considered, provides a more realistic forecast of vehicle routing under peak-hour congestion. Vehicles reroute when a link is blocked; hence, the v/c ratios rarely exceed 1. Thus, in addition to the C/CAG time-of-day models, a DTA model for a.m./p.m. peak-hour conditions was developed to enhance the modeling of vehicle speed and VMT under congested conditions on local streets. A subarea extraction procedure was conducted to obtain a citywide trip table that contains origin/destination trips between MPM TAZs and external stations and is consistent with regional origin/destination travel patterns in the C/CAG model. The citywide trip tables were then assigned, using the DTA peak-hour model, to obtain peak-hour link volumes.

The MPM model is suitable for forecasting realistic peak-hour traffic volumes, travel speeds, and travel times on local roadways and intersections under future congested conditions within the city sphere of influence. The MPM model can also produce VMT information for the entire trip length, as required by Senate Bill 743 guidelines, because the trip generation, distribution, and mode choice models were created for the regional scale.

Analysis Scenarios

The conditions outlined below were analyzed as part of the Draft EIR.

Existing Conditions – This scenario evaluates current conditions, using traffic data collected by the City of Menlo Park in fall 2014. At that time, Buildings 10–19 were partially occupied, and Building 20 was not yet occupied. For purposes of this Draft EIR, however, trips generated by Buildings 10–19 and Building 20 at full occupancy are included under background conditions.

Background Conditions – This scenario describes the anticipated change in transportation conditions, based on the net change in travel patterns anticipated to result from approved but not-yet-constructed or fully occupied developments in Menlo Park at the time of the existing conditions assessment. This includes additional trips that would be generated by Buildings 10–20 and Building 23 at full occupancy, based on approved trip caps for the existing Facebook Campus.

Background plus-Project Conditions – This scenario evaluates potential transportation impacts that would result from the Project, based on the Project description provided in Chapter 2. The evaluation of traffic impacts was based on the proposed net increase in the number of allowable peak-hour and daily vehicle trips under the proposed trip cap.

Cumulative 2040 Existing General Plan Conditions – This scenario evaluates transportation conditions that would result from buildout to the maximum development potential under the current adopted General Plan in 2040. This scenario includes previously approved development on the Project site (same as in background conditions) as well as additional development potential under the current General Plan.

Cumulative 2040 Existing General Plan plus-Project Conditions – This scenario evaluates potential cumulative transportation impacts that would result from the Project in 2040, assuming full buildout, under the current adopted General Plan. The evaluation of traffic impacts was based on the proposed net increase in the number of allowable peak-hour and daily vehicle trips under the proposed trip cap.

Cumulative 2040 Proposed General Plan Conditions – This scenario evaluates potential cumulative transportation impacts that would result from the Project in 2040 with maximum buildout under the proposed update to the General Plan (ConnectMenlo) in 2040 (including the Project).

Background Conditions

This section evaluates baseline conditions for the Project and assumes that all approved projects in Menlo Park will be constructed, along with expected land use and traffic growth in the region to 2020, including full occupancy of existing Facebook Buildings 10–20 and Building 23.

Table 3.3-3 summarizes the anticipated number of residents and jobs, based on approved residential and non-residential development in Menlo Park under background conditions. The net change in jobs under background conditions also assumes full occupancy of existing Facebook Buildings 10–20 and Building 23.

Table 3.3-3. Menlo Park – Background Growth from Approved Projects

Analysis Scenario	Dwelling Units	Residents	Non-residential Development (gsf)	Jobs
Existing Conditions	13,100	32,900	14,600,000	30,900
Background Conditions	14,380	36,200	16,000,000	36,800
Net Increase (background conditions)	***1,280***	***3,300***	***1,400,000***	***5,900***

Approved Trip Generation for Existing Facebook Buildings

Traffic growth under background conditions includes approved vehicle trips that can be generated by Buildings 10–20 and Building 23 at full occupancy. Given the trip caps that were approved when Buildings 10–20 were entitled and permitted trips for Building 23, a maximum of 25,402 daily vehicle trips may be generated by Buildings 10–20 and Building 23 at full occupancy, including 3,117 a.m. peak-hour vehicle trips and 3,432 p.m. peak-hour vehicle trips. Existing buildings at both campuses generated 1,171 a.m. peak-hour and 1,299 p.m. peak-hour trips when the existing conditions traffic data were collected (prior to occupancy of Building 20). Therefore, the growth in traffic generated by approved trips under background conditions includes the net remaining vehicle trips that could be generated by Buildings 10–20 and Building 23 at full occupancy (approximately 2,000 additional vehicle trips during both peak hours, as summarized in Table 3.3-4).

Table 3.3-4. Approved Vehicle Trip Generation for Existing Facebook Buildings at Full Occupancy

Existing Buildings	A.M. Peak Hour	P.M. Peak Hour	Daily
Approved Vehicle Trips			
Buildings 10–19	*1,820*	*1,820*	*15,000*
Building 20	*772*	*772*	*6,634*
Building 23	*525*	*840*	*3,768*
Total Approved Vehicle Trips	**3,117**	**3,432**	**25,402**
Existing Conditions Trip Generation	1,171	1,299	10,500
Net Approved Vehicle Trips (background conditions)	***1,946***	***2,133***	***14,902***

Planned Transportation Improvements

The following transportation projects are planned and funded for construction in Menlo Park under background conditions:

- Willow Road and US 101 Interchange: Planned reconstruction of the Willow Road/US 101 interchange, including future signalized intersections at the junction of the ramps and Willow Road. It is anticipated that the Project would be completed by 2018.
- Bayfront Expressway and Chilco Street: Planned installation of a second northbound left-turn lane and a longer right-turn lane in conjunction with bicycle lane modifications and crosswalk installation across the south leg of the intersection.
- Bayfront Expressway and Chrysler Drive: Planned installation of a second northbound left-turn lane and a longer right-turn lane in conjunction with crosswalk installation across the south leg of the intersection.
- Bayfront Expressway and Marsh Road: Planned installation of a third eastbound right-turn lane.

Traffic Volumes and LOS

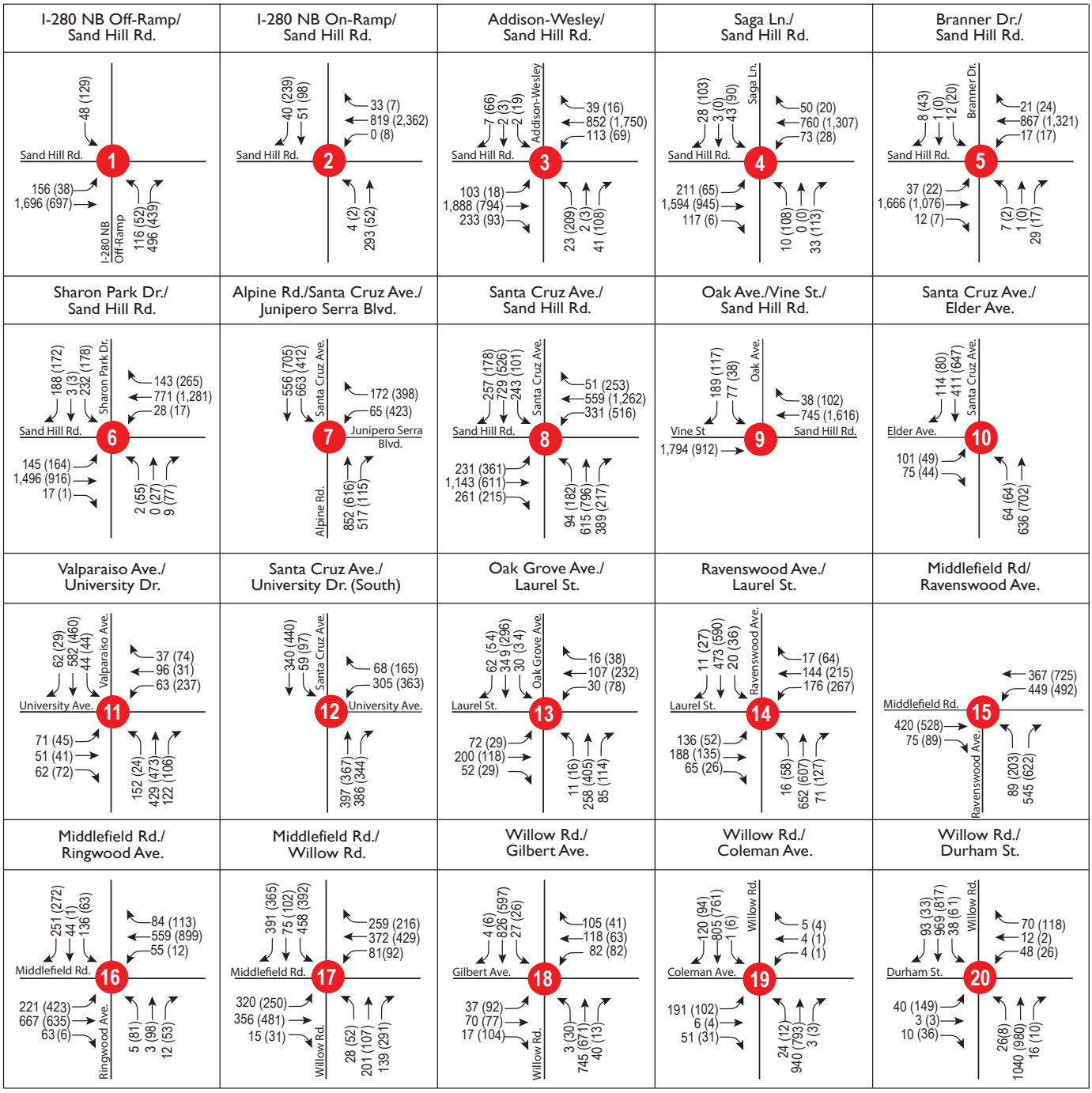
Daily Traffic Volumes

Forecast daily traffic volumes on study segments under background conditions are shown in Appendix 3.3-2, which contains tables that show the existing and forecast traffic volumes for each study segment under all scenarios. Daily traffic volumes under background conditions are shown in the column headed "forecast background." This column shows the volumes on study segments after Menlo Park's approved projects have been constructed. In addition, this scenario reflects traffic that is expected to be added in the region between 2013 and 2020. By comparing this column with existing volumes, the growth related to these background projects can be seen.

Peak-Hour Traffic Volumes

Forecasts of peak-hour traffic volumes under background conditions at each study intersection were based on anticipated changes in peak-hour traffic volumes resulting from approved projects in Menlo Park. Utilizing the MPM model, this forecast also incorporates anticipated changes in the jobs/housing balance in adjacent cities and throughout the region by 2020 that affect peak-hour traffic patterns.

Figures 3.3-10 through 3.3-12 illustrate forecast peak-hour vehicle turning movement volumes under background conditions at each study intersection.



LEGEND

Study Intersection

AM (PM) Peak Hour Traffic Volumes

Source: TJKM, 2016.

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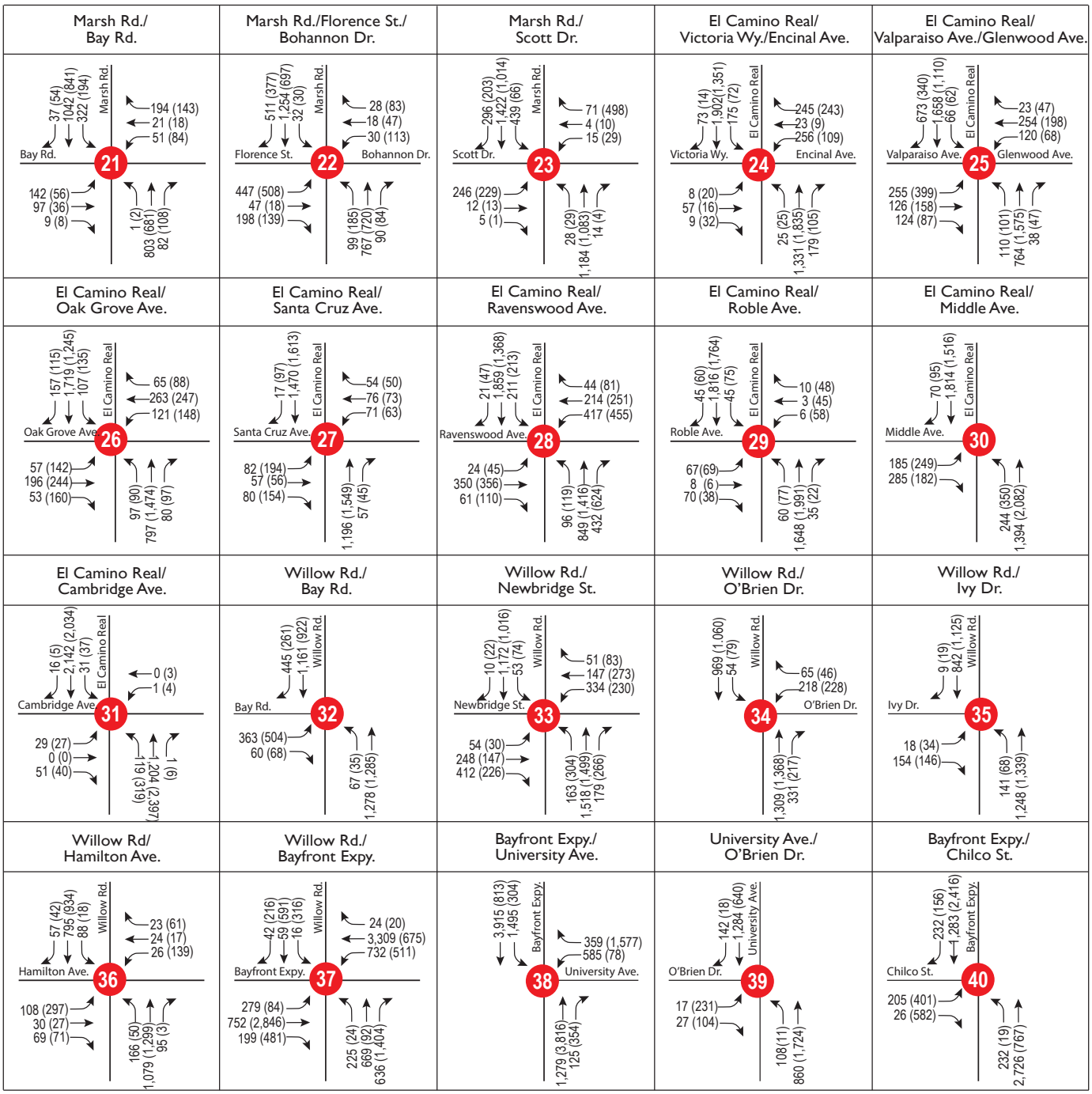
Figure 3.3-10
Background Conditions Traffic Volumes
Facebook Campus Expansion Project Draft EIR



LEGEND

Study Intersection

AM (PM) Peak Hour Traffic Volumes

Source: TJKM, 2016.

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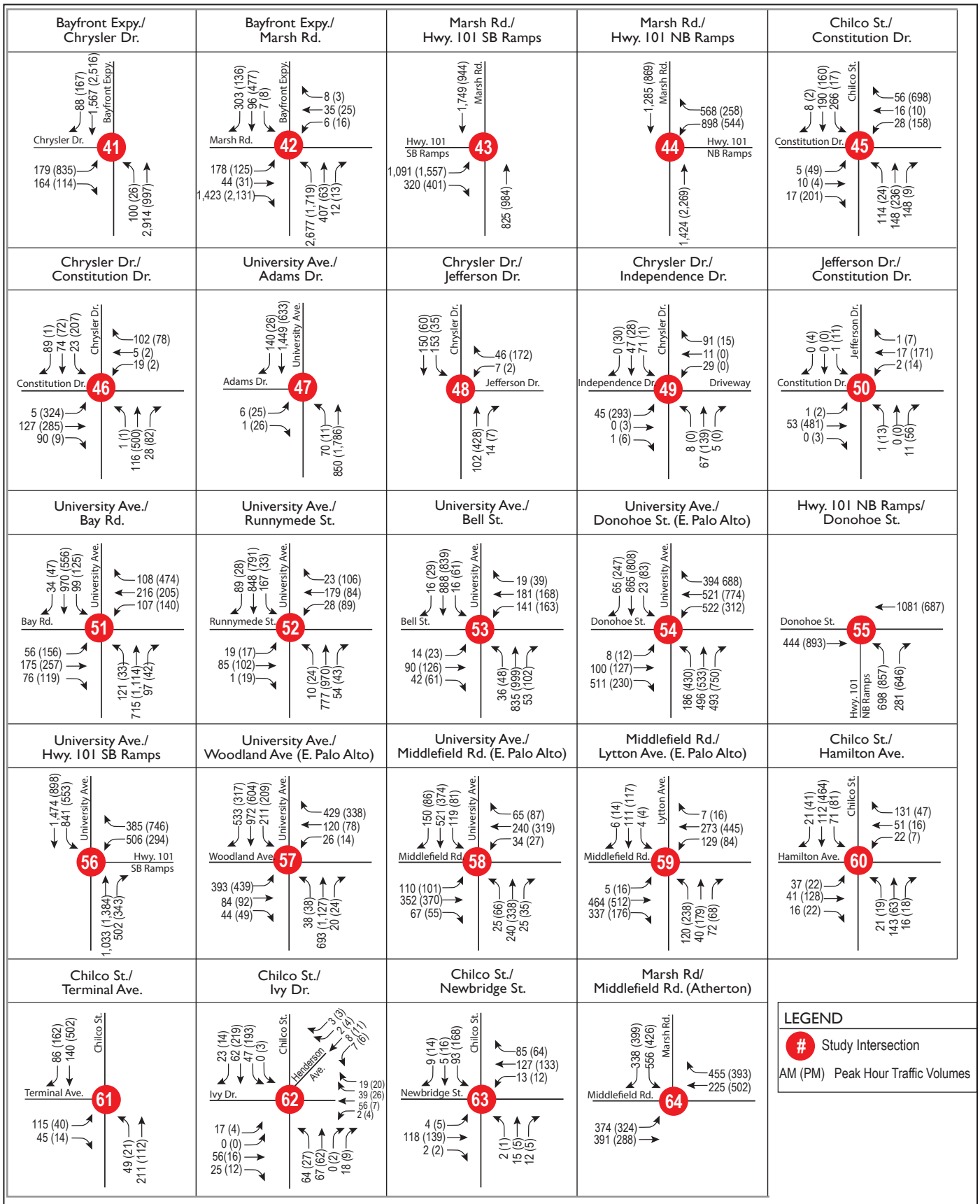
Figure 3.3-11
Background Conditions Traffic Volumes
Facebook Campus Expansion Project Draft EIR



Source: TJKM, 2016.

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Figure 3.3-12
Background Conditions Traffic Volumes
Facebook Campus Expansion Project Draft EIR

Background Conditions Intersection LOS Findings

Figure 3.3-13 illustrates the peak-hour LOS for each study intersection under background conditions without the Project. Average delay for each intersection is summarized in Appendix 3.3-1. The following 21 study intersections would operate unacceptably under background conditions:

- Sand Hill Road and the I-280 northbound on-ramp (study intersection #2) – p.m.
- Middlefield Road and Ravenswood Avenue (#15) – p.m.
- Willow Road and Middlefield Road (#17) – a.m. and p.m.
- Willow Road and Gilbert Avenue (#18) – p.m.
  - During the p.m. peak hour, this finding reflects unserved demand.
- Willow Road and Coleman Avenue (#19) – p.m.
  - During the p.m. peak hour, this finding reflects unserved demand.
- Willow Road and Durham Street (#20) – a.m. and p.m.
  - During both the a.m. and p.m. peak hours, this finding reflects unserved demand.
- Willow Road and Bay Road (#32) – a.m. and p.m.
  - During both peak hours, this finding reflects delay due to unserved demand and downstream queues (southbound approaching the US 101 ramps during the a.m. peak hour, and northbound approaching the Willow/Bayfront intersection during the p.m. peak hour).
- Willow Road and Newbridge Street (#33) – a.m.
  - During the a.m. peak hour, this finding reflects delay from downstream queues (southbound approaching the US 101 ramps).
- Willow Road and O'Brien Drive (#34) – a.m.
  - The LOS finding reflects unserved demand due to upstream and downstream congestion during the a.m. peak hour.
- Willow Road and Ivy Drive (#35) – a.m.
  - The LOS finding reflects unserved demand due to upstream and downstream congestion during the a.m. peak hour.
- Willow Road and Hamilton Avenue (#36) – a.m. and p.m.
  - The LOS finding reflects unserved demand due to upstream and downstream congestion during both peak hours.
- Willow Road and Bayfront Expressway (#37) – a.m. and p.m.
  - During the p.m. peak hour, this finding reflects unserved demand that affects northbound right-turn movements.
- University Avenue and Bayfront Expressway (#38) – a.m. and p.m.
  - During the a.m. peak hour, this finding reflects unserved demand that affects westbound left-turn movements.
- Chilco Street and Constitution Drive (#45) – p.m.
- University Avenue and Adams Drive (#47) – a.m. and p.m.

- University Avenue and Bay Road (#51) – p.m.
- University Avenue and Donohoe Street (#54) – a.m. and p.m.
- University Avenue and US 101 southbound ramps (#56) – a.m. and p.m.
- University Avenue and Woodland Avenue (#57) – a.m. and p.m.
- Middlefield Road and Lytton Avenue (#59) – p.m.
- Bayfront Expressway and Building 20 entrance (#65) – p.m.

Of these 21 locations, 17 are consistent with the operating levels identified under existing conditions. The other four intersections that degrade to unacceptable levels with added traffic under background conditions are Middlefield Road and Ravenswood Avenue (#15), Chilco Street and Constitution Drive (#45), Middlefield Road and Lytton Avenue (#59), and Bayfront Expressway and Building 20 entrance (#65).

Background plus-Project Conditions

Project Components

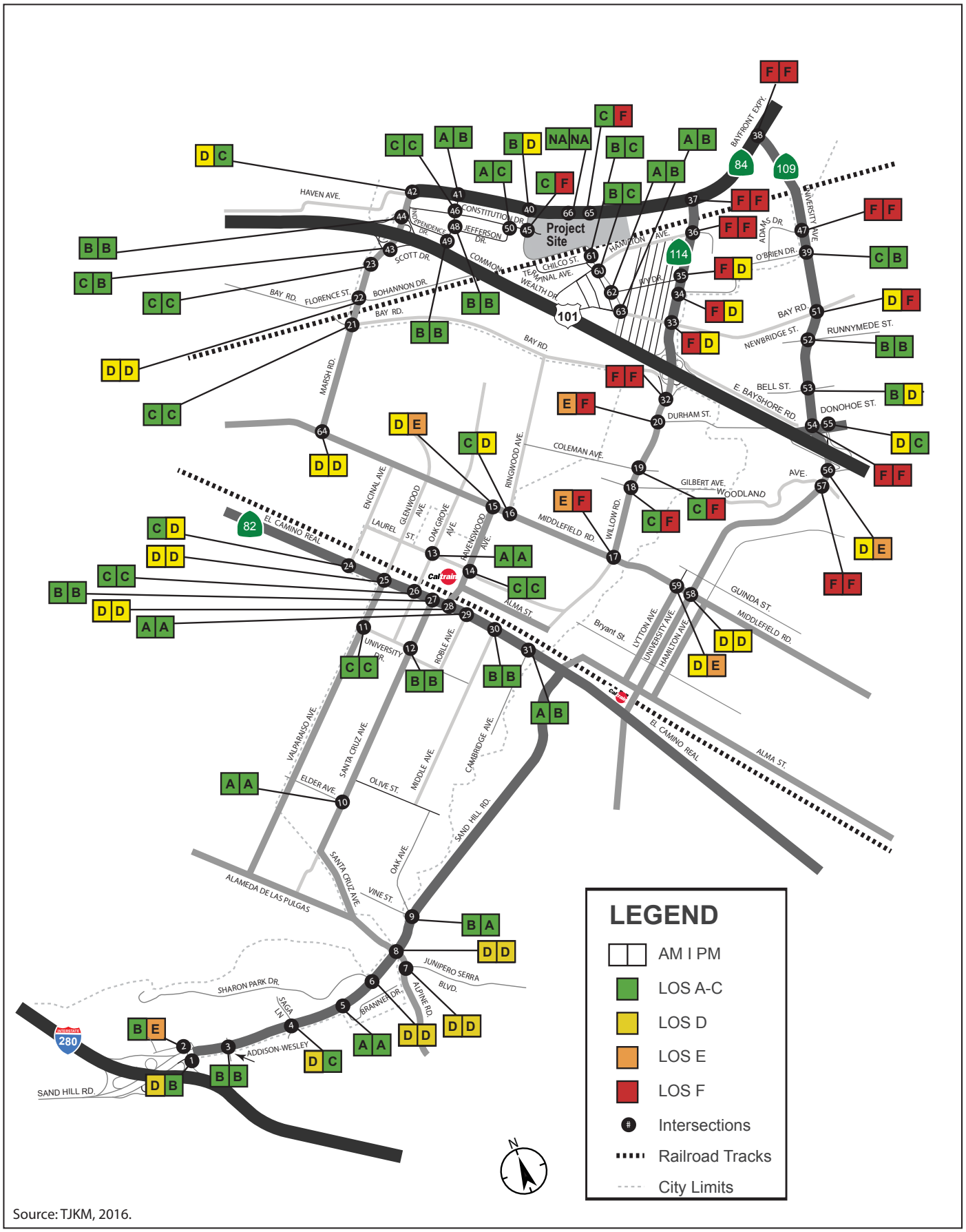
The Project location, site plan, and characteristics are described in Chapter 2 *Project Description*, including detailed descriptions of the site access, circulation, and parking components. The Project Sponsor has identified vehicular, transit, bicycle, and pedestrian routes within the Project site as well as emergency vehicle access routes that would link with Building 20 and ultimately Buildings 10–19, allowing employees and vehicles to circulate within the overall Campus.

The Project site is located in Menlo Park and bounded by Bayfront Expressway to the north, Chilco Street to the west and south, and Facebook Building 20 to the east. Regional highways that provide access to the Project site include US 101, approximately 0.3 mile to the southwest, and SR 84, immediately adjacent to the north. The Menlo Park Caltrain station is located approximately 2 miles south of the Project site, providing weekday service from San Francisco to Gilroy and weekend service from San Francisco to San José.

The existing Facebook Campus consists of Buildings 10–19, located north of SR 84, and Building 20, located adjacent to the Project site to the east. Buildings 10–19 can accommodate approximately 6,600 employees, while Building 20 can accommodate approximately 2,800 employees at full occupancy. The Project would replace other existing buildings with two new office buildings (Buildings 21 and 22) and a limited-service hotel. Building 21 would accommodate 3,400 employees, and Building 22 would accommodate 3,000 employees. One existing office building (Building 23) would remain.

The Project site is currently accessible from one all-way stop sign–controlled driveway at the intersection of Chilco Street and Constitution Drive. There is also an emergency vehicle access point between the eastern end of the Project site and the adjacent Building 20. The Project would provide additional motor vehicle access by installing a signalized intersection on Bayfront Expressway, adjacent to proposed Building 21. In addition, the existing right-turn-only intersection from Bayfront Expressway to Building 20 would provide access to the Project site.

A proposed bicycle/pedestrian bridge over Bayfront Expressway would allow for public access to the Bay Trail and Bedwell Bayfront Park (Bayfront Park) from the Project Site and the Belle Haven neighborhood. Frontage improvements, including bicycle and pedestrian improvements, along Chilco Street are being implemented by the Project Sponsor as a separate project.



Source: TJKM, 2016.

Graphics ... 00296.15 (5-18-2016)

Figure 3.3-13
Intersection LOS – Background Conditions
Facebook Campus Expansion Project Draft EIR

Facebook currently offers shuttle bus service to its employees, including long-distance regional service and service to/from nearby Caltrain stations. A shuttle stop would be located on the north side of Building 21.

A TDM program would be implemented as part of the Project. The TDM program would be designed to provide alternatives to single-occupancy automobile travel to and from the Project site as well as between the Project site and the existing Facebook Campus. Facebook currently implements a TDM program, which has evolved over time to respond to employee preferences and will continue to evolve to meet the trip caps, at its existing facilities. Key ongoing elements included in the TDM program are listed below.

- Subsidized Caltrain Go-Passes and Caltrain station shuttles.
- Employee commuter shuttle bus services/intern shuttles.
- Campus bike-share program for employees.
- Bicycle amenities, such as bike shops, lockers, a towel service, bicycle pumps, self-repair stations, and loaner bikes.
- Vanpool program for groups of employees to share rides to and from work.
- Educational and promotional events to encourage employees to use alternative modes of travel.
- Rideshare program that allows users to find other drivers or passengers who are traveling along the same route.
- Emergency ride home for employees.
- Car-share service on Campus.
- Electric vehicle parking.

Proposed Parking Supply Ratio

The existing parking supply for Buildings 10–19 includes approximately 3,450 spaces in surface lots; Building 20 has approximately 1,710 parking spaces. The Project would provide 3,533 additional parking spaces, as summarized in Table 3.3-5, thereby increasing the total parking supply to 8,693 parking spaces for Buildings 10–23 and the proposed hotel. The proposed parking supply for each of the office buildings equates to a parking supply ratio of 3.16 motor vehicle parking spaces per thousand gross square feet (gsf) of building space.

Project Trip Cap

Buildings 10–19 and Building 20 are currently subject to vehicle trip caps, with a monitoring and enforcement policy that limits the number of morning (7:00 to 9:00 a.m.) and evening (4:00 to 6:00 p.m.) peak-period and daily vehicle trips to and from each of these respective sites. The vehicle trip caps for Buildings 10–19 and Building 20 were developed and approved during prior entitlement processes. The City of Menlo Park continuously monitors compliance to ensure conformance, based on counts at all Facebook driveways and outlined in the respective approvals. At the time this document was prepared (April 2016), Facebook was in compliance with the trip caps at Buildings 10–19 and Building 20.

Table 3.3-5. Proposed Motor Vehicle Parking Supply

Location	Motor Vehicle Parking Spaces	Building Size (gsf)	Parking Spaces per 1,000 gsf
Existing Parking to Remain			
Building 10–19	3,450	1,000,000	3.45
Building 20	1,710	433,555	3.94
Total (existing to remain)	*5,160*	*1,433,555*	*3.60*
Project Parking			
Building 21	1,476	512,900	2.88
Building 22	1,294	449,500	2.88
Building 23	518	180,100	2.88
Hotel	245	174,800	1.40
Project Total	***3,533***	***1,317,300***	***2.68***
Total Facebook Campus (with Project)	**8,693**	**2,750,855**	***3.16***

As part of the Project, the Project Sponsor is proposing to implement a vehicle trip cap and monitoring program for the Project (Buildings 21, 22, and the proposed hotel) that would incorporate the existing vehicle trip cap at Building 20 and permitted vehicle trip generation for Building 23. The proposed vehicle trip cap is based on a rate of 0.394 vehicle trip per Facebook employee during each 2-hour peak commute period and up to 2.273 daily vehicle trips per employee, consistent with the trip caps for Buildings 10–20. The trip generation rates for Facebook employees account not only for trips generated by the employees but also trips generated by typical numbers of contractors, interns, visitors, delivery personnel, and other non-Facebook workers.

Building 23 is not currently subject to a trip cap; however, a permitted level of traffic generation was previously identified, based on the building's prior use that allowed up to 3,745 daily vehicle trips, 525 a.m. peak-hour vehicle trips, and 840 p.m. peak-hour vehicle trips. In developing the proposed combined trip cap for the Project and Buildings 20 and 23, the Project Sponsor reduced the number of peak-hour vehicle trips generated by Building 23 to 425 during both peak hours. The trip cap also includes up to 1,784 daily vehicle trips that could be generated by the proposed hotel and up to 140 peak-hour vehicle trips, consistent with the Institute of Transportation Engineers (ITE) trip generation rates for a 200-room hotel. As proposed, the combined trip cap for the Project and Buildings 20 and 23 would allow up to:

- 4,499 vehicle trips during the 2-hour morning peak period (7:00 to 9:00 a.m.), including 3,100 a.m. peak-hour vehicle trips
- 4,511 vehicle trips during the 2-hour afternoon peak period (4:00 to 6:00 p.m.), including 3,100 p.m. peak-hour vehicle trips
- 26,438 daily vehicle trips

Buildings 10–19 are not included in the Project trip cap but remain subject to a separate trip cap for the buildings with prior approval.

Approved trip caps for Buildings 10–20 and permitted trips for Buildings 23 currently allow up to 25,128 daily vehicle trips, including 3,117 a.m. peak-hour vehicle trips and 3,432 p.m. peak-hour vehicle trips. Under the Project trip cap for Buildings 20–23 and the hotel, total allowable trip generation for both Campuses (Buildings 10–23 and the hotel) would increase to 41,457 daily vehicle trips, including 4,920 vehicle trips during both the a.m. and p.m. peak hours. The Project trip cap would, therefore, allow a net increase of 16,329 daily vehicle trips, including 1,803 a.m. peak-hour vehicle trips and 1,488 p.m. peak-hour vehicle trips.

Table 3.3-6 summarizes the proposed net increase in the number of allowable vehicle trips under the Project.

Table 3.3-6. Net Vehicle Trip Generation with Project

Existing and Proposed Trip Caps	A.M. Peak-Hour Vehicle Trips	P.M. Peak-Hour Vehicle Trips	Daily Vehicle Trips
Existing Vehicle Trip Caps (without Project)			
Buildings 10–19	1,820	1,820	15,000
Building 20	772	772	6,364
Building 23	525	840	3,764
Total Permitted Vehicle Trips (without Project)	*3,117*	*3,432*	*25,128*
Proposed Vehicle Trip Caps (with Project)			
Buildings 10–19	1,820	1,820	15,000
Buildings 20–23 and Hotel (with Project trip cap)	3,100	3,100	26,457
Total Permitted Vehicle Trips (with Project)	*4,920*	*4,920*	*41,457*
Net Vehicle Trips with Project	***1,803***	***1,488***	***16,329***

Given the amount of office space to be provided, the Project vehicle trip cap would equate to a rate of 1.88 peak-hour vehicle trips per 1,000 gsf of office space (excluding the 134 a.m. and 140 p.m. peak-hour trips that would be generated by the hotel site) during both the a.m. and p.m. peak hours. Similarly, the existing trip cap for Buildings 10–19 equates to a rate of 1.82 peak-hour vehicle trips per 1,000 gsf of office space during both the a.m. and p.m. peak hours.

The Project vehicle trip cap is based on a rate of 0.4 vehicle trip per employee, given the potential number of employees, during the 2-hour peak commute periods and 2.27 daily vehicle trips per employee. The existing trip cap allows 70 percent of the 2-hour trips to occur within a single 1-hour period, thus equating to 0.28 vehicle trip per employee during a single 1-hour period.

Background plus-Project Traffic Volumes and LOS

This section provides an analysis of background plus-Project traffic conditions, based on the maximum allowable vehicle trip generation under the trip cap. By utilizing the MPM model, the forecast accounts for the resulting change in both the local and regional balance of housing and jobs, which could affect travel patterns.

Daily Traffic Volumes and Roadway Segment Analysis

Daily traffic volumes with Project traffic, added to background conditions, are shown in Appendix 3.1-2. Given the City of Menlo Park criteria, the Project traffic would result in potentially significant impacts on 21 of the 87 roadway segments. The roadway segment volume thresholds do not reflect the true

capacity of each segment but, rather, a quality-of-life standard to minimize traffic added to residential streets. The affected segments include nine out of 30 arterial study segments, 10 out of 50 collector street study segments, and two out of seven local street study segments. The 21 affected study segments are located on the following 13 streets within Menlo Park:

- Adams Drive
- Alameda de las Pulgas
- Alpine Road
- Cambridge Avenue
- Constitution Drive
- Hamilton Drive
- Ivy Drive
- Marsh Road
- Middlefield Road
- Newbridge Street
- Oak Grove Avenue
- Sand Hill Road
- Santa Cruz Avenue

Peak-Hour Traffic Volumes

Peak-hour traffic volumes under background plus-Project conditions at each study intersection were forecast utilizing the MPM model and based on net peak-hour vehicle trip generation under the Project trip cap.

The following intersection improvements, which would be constructed as part of the Project, were incorporated into the LOS analysis:

- **Bayfront Expressway and Proposed Building 21 Entrance (Study Intersection #66):** A proposed signalized intersection on Bayfront Expressway, east of Chilco Street, that would provide additional motor vehicle access to the Project site. The proposed lane configuration would include one westbound left-turn lane and one eastbound right-turn lane from Bayfront Expressway for vehicles entering the Project site and two outbound lanes for vehicles exiting the Project site to Bayfront Expressway (one right-turn lane and one left-turn lane).

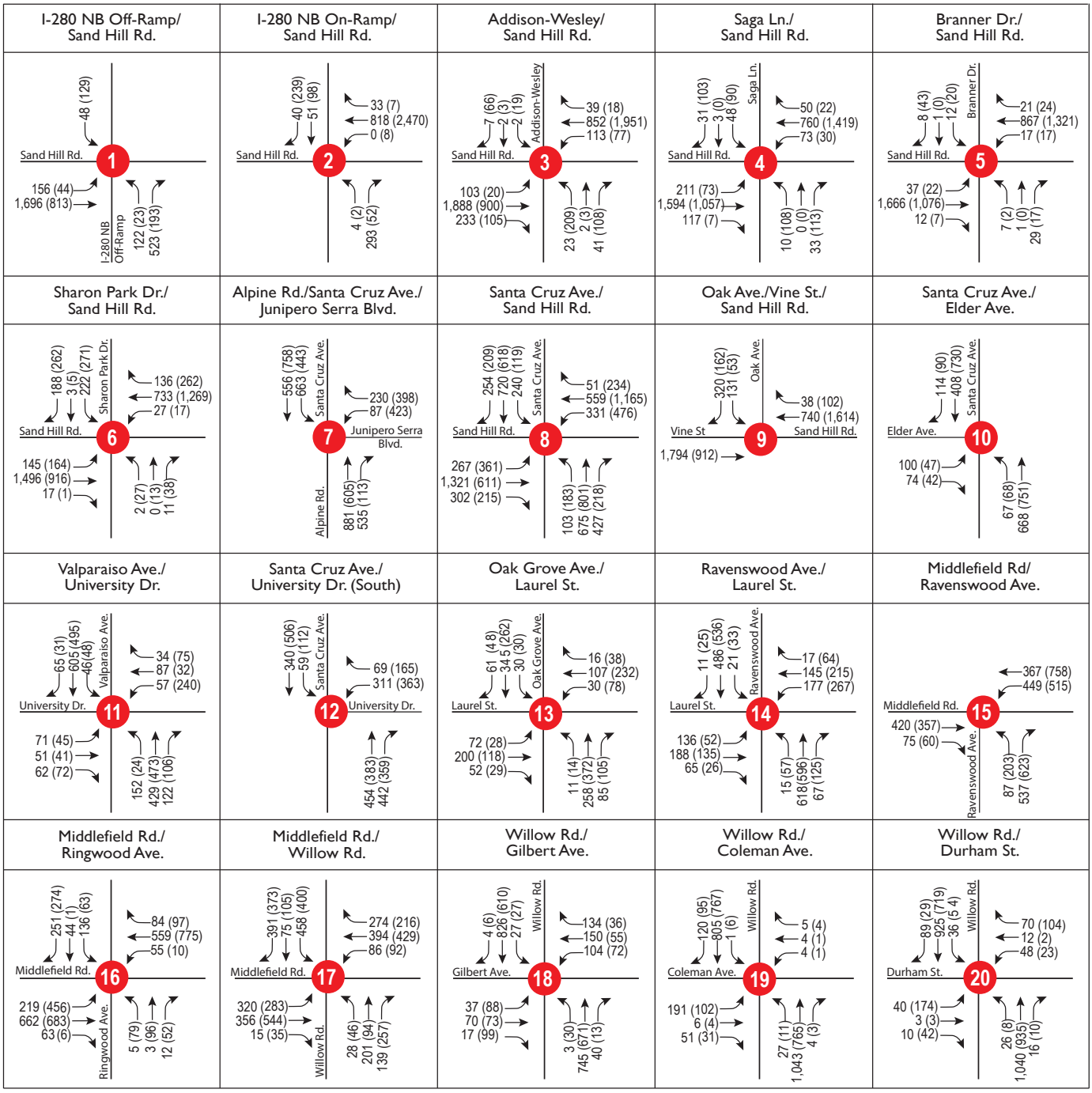
No modifications are proposed to the stop-controlled Chilco Street and Constitution Drive intersection (study intersection #45) under the Project. Lane configurations, signal timings, and pedestrian paths at the remaining study intersections would remain consistent with background conditions.

The anticipated net change in peak-hour traffic volumes at each study intersection under background plus-Project conditions was determined through use of the MPM model. This methodology takes into account the anticipated effect of the Project on regional and local travel patterns resulting from the change in the local and regional jobs/housing balance that would occur given the proposed increase in the number of jobs at the Project site.

Figures 3.3-14 through 3.3-16 illustrates the forecast peak-hour vehicle turning movement volumes at each study intersection under background plus-Project conditions. The forecast peak-hour traffic volumes reflect the anticipated net change that would result from the Project.

Background plus-Project Conditions Intersection LOS Findings

The peak-hour LOS for each study intersection under background plus-Project conditions is illustrated in Figure 3.3-17 and summarized in Appendix 3.3-1. The following 24 study intersections would operate unacceptably under background plus-Project conditions:



LEGEND

Study Intersection

AM (PM) Peak Hour Traffic Volumes

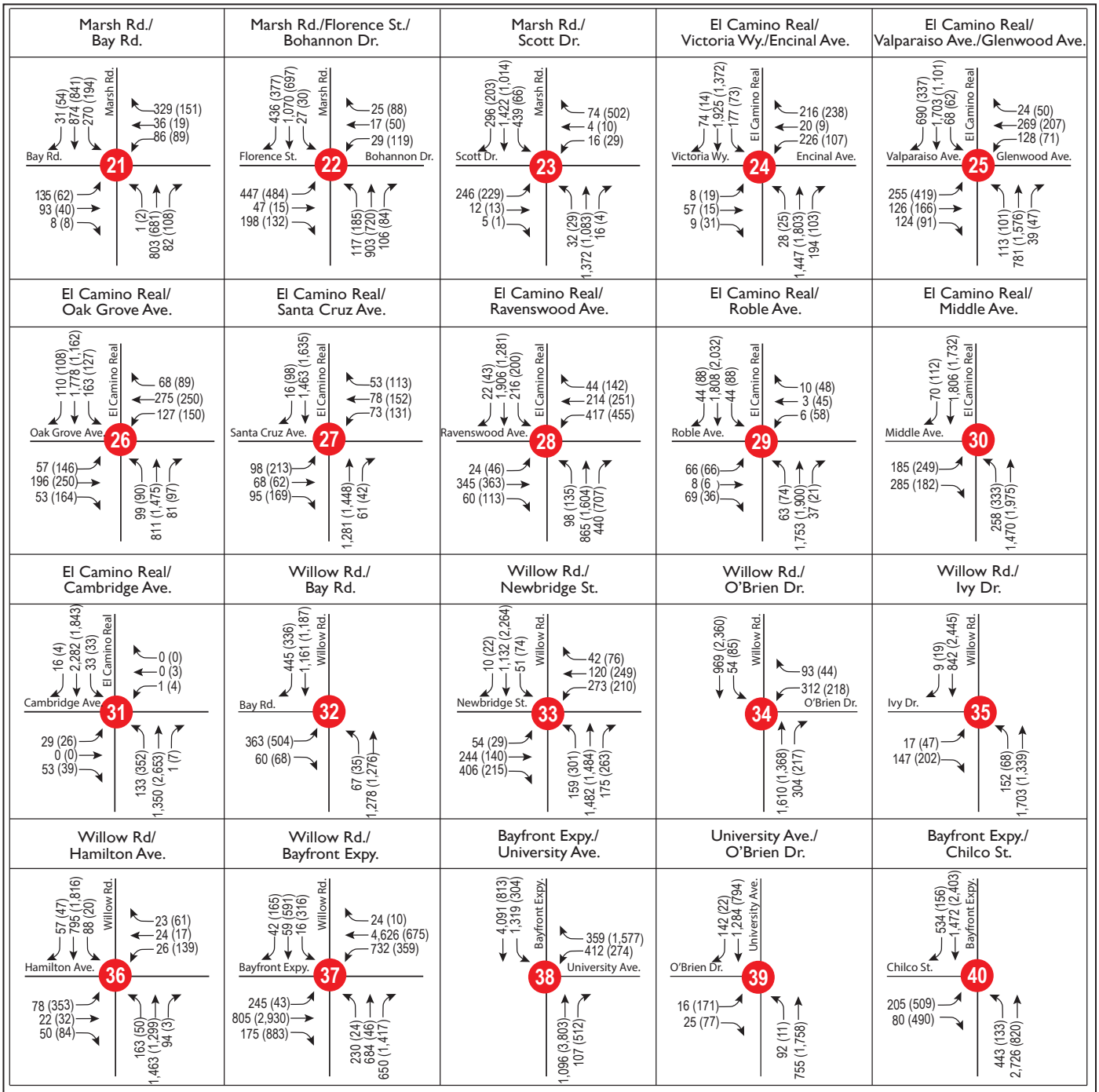
Source: TJKM, 2016.

Graphics ... 00296.15 (5-18-2016)

Figure 3.3-14

Background plus Project Conditions Traffic Volumes

Facebook Campus Expansion Project Draft EIR



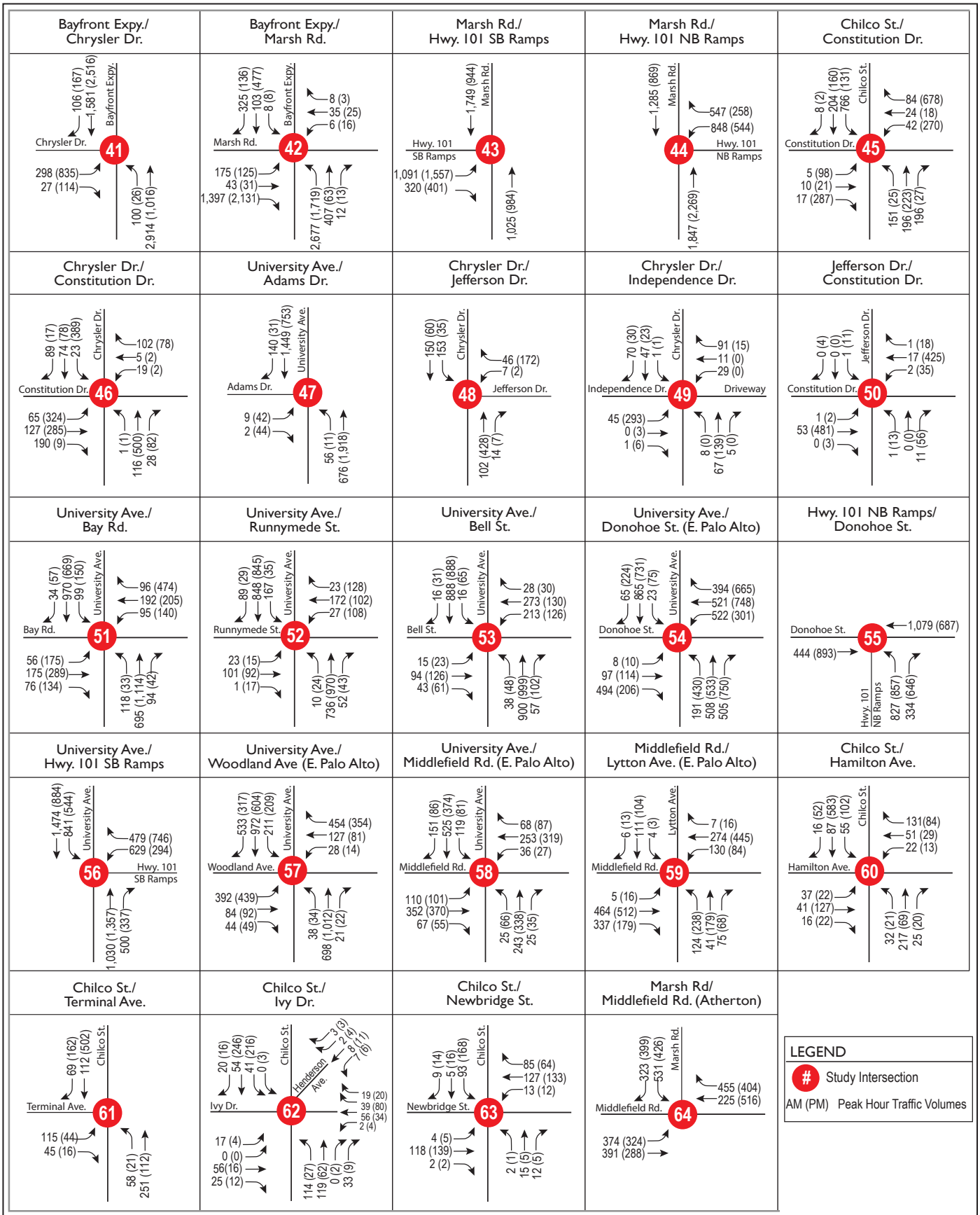
LEGEND

#	Study Intersection
AM (PM)	Peak Hour Traffic Volumes

Source: TJKM, 2016.

Graphics ... 00296.15 (5-18-2016)

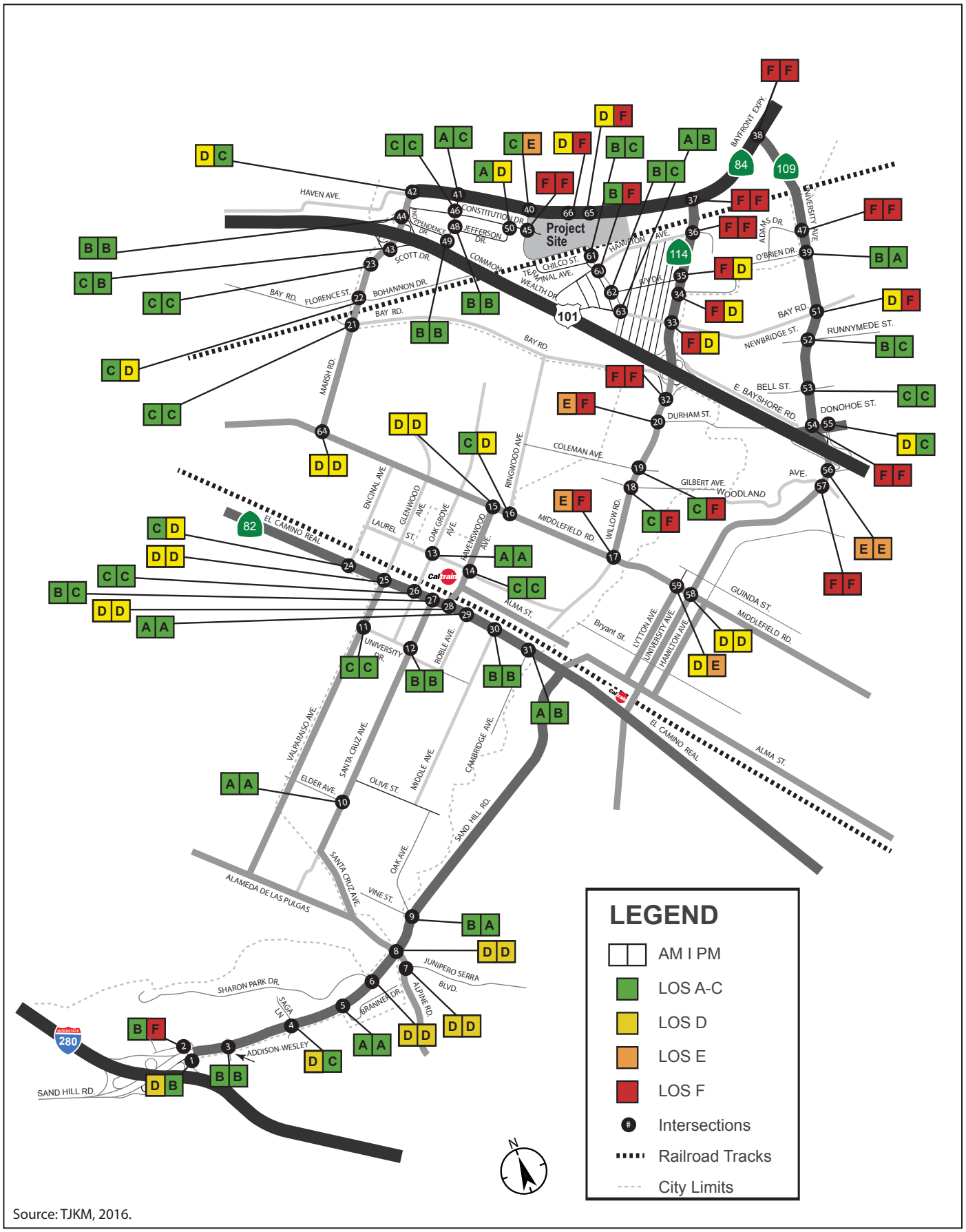
Figure 3.3-15
Background plus Project Conditions Traffic Volumes
Facebook Campus Expansion Project Draft EIR



Source: TJKM, 2016.

Graphics ... 00296.15 (5-18-2016)

Figure 3.3-16
Background plus Project Conditions Traffic Volumes
Facebook Campus Expansion Project Draft EIR



Source: TJKM, 2016.

Graphics ... 00296.15 (5-18-2016)

Figure 3.3-17
Intersection LOS – Background plus Project Conditions
Facebook Campus Expansion Project Draft EIR

- Sand Hill Road and the I-280 northbound on-ramp (study intersection #2) – p.m.
- Willow Road and Middlefield Road (#17) – a.m. and p.m.
- Willow Road and Gilbert Avenue (#18) – p.m.
  - During the p.m. peak hour, this finding reflects unserved demand.
- Willow Road and Coleman Avenue (#19) – p.m.
  - During the p.m. peak hour, this finding reflects unserved demand.
- Willow Road and Durham Street (#20) – a.m. and p.m.
  - During both the a.m. and p.m. peak hours, this finding reflects unserved demand.
- Willow Road and Bay Road (#32) – a.m. and p.m.
  - During both peak hours, this finding reflects delay due to unserved demand and downstream queues (southbound approaching the US 101 ramps during the a.m. peak hour, and northbound approaching the Willow/Bayfront intersection during the p.m. peak hour).
- Willow Road and Newbridge Street (#33) – a.m.
  - During the a.m. peak hour, this finding reflects delay from downstream queues (southbound approaching the US 101 ramps).
- Willow Road and O'Brien Drive (#34) – a.m.
  - The LOS finding reflects unserved demand due to upstream and downstream congestion during the a.m. peak hour.
- Willow Road and Ivy Drive (#35) – a.m.
  - The LOS finding reflects unserved demand due to upstream and downstream congestion during the a.m. peak hour.
- Willow Road and Hamilton Avenue (#36) – a.m. and p.m.
  - the LOS finding reflects unserved demand due to upstream and downstream congestion during the a.m. peak hour.
- Willow Road and Bayfront Expressway (#37) – a.m. and p.m.
- University Avenue and Bayfront Expressway (#38) – a.m. and p.m.
  - During the a.m. peak hour, this finding reflects unserved demand that affects the westbound left-turn movement.
- Chilco Street and Bayfront Expressway (#40) – p.m.
- Chilco Street and Constitution Drive (#45) – a.m. and p.m.
- University Avenue and Adams Drive (#47) – a.m. and p.m.
- Jefferson Drive and Constitution Drive (#50) – p.m.
- University Avenue and Bay Road (#51) – p.m.
- University Avenue and Donohoe Street (#54) – a.m. and p.m.
- University Avenue and US 101 Southbound Ramps (#56) – a.m. and p.m.

- University Avenue and Woodland Avenue (#57) – a.m. and p.m.
- Middlefield Road and Lytton Avenue (#59) – p.m.
- Chilco Street and Hamilton Avenue (#60) – p.m.
- Bayfront Expressway and Building 20 Entrance (#65) – p.m.
- Bayfront Expressway and Proposed Building 21 Entrance (#66) – p.m.

Of these 24 locations, 20 are consistent with the operating levels identified under background conditions. The other four intersections that degrade to unacceptable levels with added traffic from the Project are Chilco Street and Bayfront Expressway (#40), Jefferson Drive and Constitution Drive (#50), Chilco Street and Hamilton Avenue (#60), and Bayfront Expressway and the proposed Building 21 entrance (#66). In addition, the Chilco Street and Constitution Drive intersection (#45), which already operates unacceptably under background conditions during the p.m. peak hour, degrades to unacceptable LOS F during the a.m. peak hour with the addition of Project traffic.

Impacts and Mitigation Measures

Impact TRA-1: Impacts on Peak-Hour Traffic at Study Intersections under Background Plus-Project Conditions. Increases in traffic associated with the Project would result in increased delay during the peak hour, causing significant and unavoidable impacts on the operation of study intersections. (SU)

The Project is not anticipated to increase average vehicle delay to a level that would exceed the significance threshold at the locations listed below, which operate unacceptably; therefore, Project impacts on these intersections would be less than significant under background plus-Project conditions:

- Willow Road and Middlefield Avenue (#17)
- Willow Road and Gilbert Avenue (#18)
- Willow Road and Coleman Avenue (#19)
- Willow Road and Durham Street (#20)
- Willow Road and Bay Road (#32)
- Willow Road and Newbridge Street (#33)
- Willow Road and O'Brien Drive (#34)
- Willow Road and Ivy Drive (#35)
- University Avenue and Bay Road (#51)
- University Avenue and Donohoe Street (#54)
- Middlefield Road and Lytton Avenue (#59)

AM Peak Hour

During the a.m. peak hour, Project traffic would cause operations at the following intersections to degrade to a level that would be below their LOS standard, resulting in potentially significant impacts:

- Chilco Street and Constitution Drive (#45)
- Bayfront Expressway and Building 20 entrance (#65)

The intersections listed below would operate unacceptably during the a.m. peak hour under existing and background conditions. Project traffic would cause additional delay that would exceed the impact threshold, resulting in potentially significant impacts.

- Willow Road and Bayfront Expressway (#37)
- University Avenue and US 101 southbound ramps (#56)
- University Avenue and Woodland Avenue (#57)

At the following study intersections on Bayfront Expressway, potential impacts on westbound through movements would occur during the a.m. peak hour because of queue lengths at the westbound left-turn pocket that would exceed storage capacity, resulting in potentially significant impacts:

- Bayfront Expressway and the proposed Building 21 entrance (#66)

PM Peak Hour

During the p.m. peak hour, Project traffic would cause operations at the following intersections to degrade to a level that would be below their LOS standard, resulting in potentially significant impacts:

- Chilco Street and Bayfront Expressway (#40)
- Chilco Street and Constitution Drive (#45)
- Jefferson Drive and Constitution Drive (#50)
- Chilco Street and Hamilton Avenue (#60)
- Bayfront Expressway and Building 20 entrance (#65)
- Bayfront Expressway and the proposed Building 21 entrance (#66)

The following intersections would operate unacceptably under background conditions, and the addition of traffic associated with the Project during the p.m. peak hour would cause additional delay that would exceed the significance threshold, resulting in potentially significant impacts:

- Sand Hill Road and I-280 northbound on-ramp (#2)
- Willow Road and Hamilton Avenue (#36)
- Willow Road and Bayfront Expressway (#37)
- Bayfront Expressway and University Avenue (#38)
- University Avenue and Adams Drive (#47)
- University Avenue and US 101 southbound ramps (#56)

MITIGATION MEASURES. Two types of mitigation are provided to address potentially significant peak-hour impacts on study intersections, increase capacity, and reduce travel demand, as summarized below. Additional details on each measure follow later in this section. Mitigation Measure TRA-1.1 includes intersection and/or roadway capacity improvements to produce additional traffic capacity, where feasible, and mitigate peak hour LOS impacts. Mitigation Measure TRA-1.2 would reduce the share of allowable vehicle trips that could occur during a single peak hour to 50 percent of the 2-hour trip cap. If applied to both the Project and retroactively to the approved trip caps for Buildings 10-20, this measure could reduce the net peak hour vehicle trips under the Project by more than 75 percent. However, impacts on certain study intersections would remain ***significant and unavoidable***.

TRA-1.1 Provide Increased Traffic Capacity to Address Project Impacts on Peak-Hour LOS under Background Plus-Project Conditions. Mitigation Measure TRA-1.1 identifies potential measures to mitigate or reduce Project impacts, where feasible.

a. Sand Hill Road and I-280 northbound on-ramp (#2)

During the p.m. peak hour, the intersection of Sand Hill Road and the I-280 northbound on-ramp (study intersection #2) operates unacceptably at LOS E under existing and background conditions, reflecting the delay experienced by westbound vehicles when approaching I-280. Traffic associated with the Project would increase average delay to approximately 19 seconds, exceeding the impact threshold of 4 seconds for Caltrans intersections. The increased delay could be mitigated by modifying signal timing during the p.m. peak hour to increase the allocation of green time to the westbound approach (by up to 10 seconds during the p.m. peak hour). However, as described below, this mitigation would not be necessary under background plus-Project conditions because Mitigation Measure TRA-1.2 (discussed below) would modify the Project trip cap to limit the number of vehicle trips that could occur during a single peak hour (see Mitigation Measure TRA-1.2).

With implementation of Mitigation Measure TRA-1.2, the net increase in the number of vehicle trips resulting from the Project during the p.m. peak hour would be reduced by more than 90 percent. Therefore, with Mitigation Measure TRA-1.2, the change in delay would not be anticipated to exceed 4 seconds, and the impact would be reduced to a ***less-than-significant*** level. (LTS/M)

b. Willow Road and Hamilton Avenue (#36)

During the p.m. peak hour, the intersection would be anticipated to operate unacceptably at LOS F under both background and background plus-Project conditions. Project traffic would increase delay and exceed the City threshold of 0.8 second for critical movements. The increase in delay reflects a forecast increase in left-turn volumes related to vehicles from the Project site traveling through residential neighborhoods via Chilco Street and Hamilton Avenue to by-pass eastbound delay on the segment of Bayfront Expressway where it approaches Willow Road.

Although the provision of an eastbound left-turn lane on Hamilton Avenue where it approaches Willow Road would reduce the delay, this potential mitigation is not recommend because it would encourage cut-through traffic via Chilco Street and Hamilton Avenue, potentially affecting the Belle Haven neighborhood. Therefore, to avoid facilitating the use of Chilco Street and Hamilton Avenue as cut-through routes in the adjacent residential neighborhood, mitigating this traffic impact is not recommended, consistent with City policies that discourage cut-through traffic in residential neighborhoods. Other mitigation measures are discussed below (TRA-3.1 and TRA-3.2) to discourage cut-through traffic in the Belle Haven neighborhood. Mitigation Measure TRA-1.2 (also described below) would reduce the impact, but the net change in delay would still be likely to exceed the 0.8-second threshold for critical movements. The peak-hour traffic impact would remain ***significant and unavoidable***. (SU)

c. Bayfront Expressway and Willow Road (#37)

Given the applicable criteria for state-controlled intersections that operate at LOS E or F, a significant impact would occur if the combination of Project and future traffic would increase average delay by 4 seconds or more. The net change in average delay from existing conditions, under both background and background plus-Project conditions,

would exceed the 4-second threshold. Furthermore, the addition of Project trips would result in a net change between background and background plus-Project conditions that would also exceed the 4-second threshold.

During the a.m. and p.m. peak hours, approximately 70 percent of Dumbarton Bridge vehicle trips pass through this intersection (more than 4,500 vehicles during each peak hour under existing conditions). Similarly, the majority of allowable peak-hour vehicle trips to/from the Project site and Buildings 10–20 under the trip caps would also pass through this intersection because there are few viable alternative routes to/from most directions (particularly for trips to/from the south) and limited access points to both Campuses. As a result, the volume of conflicting movements at this intersection would increase significantly under background conditions because of the significant increase in conflicting movements. The addition of Project traffic would increase average delay by more than 80 seconds during the a.m. peak hour and more than 20 seconds during the p.m. peak hour, thereby exceeding the applicable impact threshold. Physical improvement options to expand approach capacity would be constrained given the proximity of the Dumbarton rail tracks and adjacent wetlands. Similarly, signal timing, which is necessary to accommodate the high volume of peak-direction traffic to/from the Dumbarton Bridge, would limit the viability of some mitigation options.

During the a.m. peak hour, the Project impact would be greatest in the northbound direction on Willow Road, affecting northbound through and northbound left-turn movements when approaching Bayfront Expressway from Willow Road. During the p.m. peak hour, the Project impact would be greatest in the eastbound direction on Bayfront Expressway when approaching the intersection with Willow Road because of the high volume of bridge approach traffic. In addition, during the p.m. peak hour, mitigation options at this intersection would ultimately be affected by downstream capacity limitations at the entrance to the Dumbarton Bridge.

Localized queuing and delays in the p.m. peak hour may be minimized by extending the eastbound right-turn pocket from Bayfront Expressway to Willow Road. The turn pocket should be extended toward the Building 20 entrance to maximize queue storage for motorists who wish to turn right to access US 101 south. Delays for p.m. peak-hour traffic as it approaches the Dumbarton Bridge could be reduced if a dedicated receiving lane were to be provided on Bayfront Expressway for northbound right-turn movements from Willow Road. Such a mitigation, if feasible, would allow both northbound right-turn and eastbound through movements to occur concurrently. However, the mitigation would not reduce net travel time for motorists when approaching the Dumbarton Bridge, given downstream capacity at the Bayfront Expressway and University Avenue intersection. Similarly, grade separation to allow conflicting movements to occur simultaneously, if feasible, could reduce the impact on approach delay directly at the intersection but would not reduce net travel time unless accompanied by similar measures at downstream intersections.

Increasing capacity between US 101 and the Dumbarton Bridge via the Marsh Road/US 101 interchange, to provide a viable alternate route to Willow Road, could reduce the impact, if feasible and if designed to accommodate vehicles to/from the south on US 101 without increasing travel time (compared with the travel time to Willow Road). Such improvements could include one additional northbound exit lane on US 101 between Willow Road and Marsh Road and a similar measure to accommodate southbound traffic when entering US 101 via the Marsh Road intersection.

The Project Sponsor shall be required to design and construct a lengthened eastbound right-turn pocket and a dedicated receiving lane on Bayfront Expressway for northbound right-turn traffic. Because the improvements would be under Caltrans jurisdiction, the Project Sponsor would be required to coordinate with Caltrans for review and approval of the improvements. The potential mitigation options described above are not under the control of the City, and thus, the City cannot guarantee their implementation. In addition, with implementation of Mitigation Measure TRA-1.2 (described below), the net increase in the number of peak-hour vehicle trips resulting from the Project during the a.m. and p.m. peak hours would be reduced. However, the increased delay at this intersection would still be anticipated to exceed the significance threshold. Therefore, this impact would remain ***significant and unavoidable***. (SU)

d. Bayfront Expressway and University Avenue (#38)

Given the applicable criteria for state-controlled intersections that operate at LOS E or F, a significant impact would occur if the combination of Project and future cumulative traffic would increase average delay by 4 seconds or more. This intersection would be anticipated to operate at LOS F under existing, background, and background plus-Project conditions. The net change in average delay with the addition of Project traffic would not exceed the 4-second threshold. Therefore, Project trips would not significantly affect LOS, based strictly on the approach delay at the intersection. However, the Project would contribute to an increase in upstream delay, thereby affecting access to the Dumbarton Bridge, including increased eastbound delays where traffic would approach the Bayfront Expressway and Willow Road intersection under background plus-Project conditions. Given both the upstream and downstream capacity limitations on both sides of the Dumbarton Bridge corridor, including traffic congestion and capacity limitations on US 101 as well as I-880 on the east side of San Francisco Bay (Bay), peak-hour traffic volumes on the Dumbarton Bridge would not be anticipated to increase significantly. Instead, a greater portion of peak-hour traffic demand on the Dumbarton Bridge would be anticipated to occur outside of the peak hours, including some trips that would be delayed because of peak-hour congestion on connecting facilities. Grade separation that would allow conflicting movements to occur simultaneously, if feasible, would reduce delay where traffic would approach the intersection but could result in secondary impacts at downstream locations.

The Project Sponsor shall be required to initiate design concepts through a Project Study Report (PSR), or other appropriate development document, for potential future grade separation at this intersection. Because the intersection would be under Caltrans jurisdiction, the Project Sponsor would be required to coordinate with Caltrans and the City. This potential mitigation is not under the control of the City, and the impact would remain ***significant and unavoidable***. (SU)

e. Bayfront Expressway and Chilco Street (#40)

During the p.m. peak hour, the potential impact reflects increased eastbound delay on Bayfront Expressway where traffic approaches the Dumbarton Bridge due to an increase in conflicting northbound movements at Chilco Street under background plus-Project conditions. The analysis assumes that two left-turn lanes and a separate right-turn lane would be provided as planned and funded improvements. However, the intersection would be anticipated to continue to operate at an unacceptable LOS of E.

The provision of one additional eastbound lane (for a total of four through lanes) on Bayfront Expressway would mitigate the intersection impact but would not improve net vehicle delay at the approach to the Dumbarton Bridge unless accompanied by measures to reduce downstream delay. The mitigation is not be feasible given the downstream lane configurations and environmental constraints, including those related to the wetlands and marsh area north of Bayfront Expressway.

With implementation of Mitigation Measure TRA-1.2 (described below), the net increase in the number of vehicle trips resulting from the Project during the p.m. peak hour would be reduced by more than 90 percent. This intersection would be anticipated to operate acceptably at LOS D. Therefore, with Mitigation Measure TRA-1.2, the impact would be reduced to a ***less-than-significant*** level. (LTS/M)

f. Chilco Street and Constitution Drive (#45)

During the a.m. and p.m. peak hours, traffic volumes at this all-way stop-controlled intersection would increase significantly, because this intersection would serve as one of the two vehicle access points to the Project site. The intersection operates acceptably under existing conditions during both the a.m. and p.m. peak hours. The intersection would continue operating acceptably under background conditions during the a.m. peak hour but would operate unacceptably at LOS F during the p.m. peak hour, reflecting increased traffic with full occupancy of Building 23 under background conditions in combination with the additional traffic that would be generated by approved projects in the Bayfront (formerly M-2) area.

The Project would provide motor vehicle access to proposed Building 22, existing Building 23, and the proposed hotel via the Chilco Street and Constitution Drive intersection; direct motor vehicle access to proposed Building 21 would be provided from a proposed signalized intersection on Bayfront Expressway. Approximately 58 percent of the proposed parking supply would be accessed from the Chilco Street and Constitution Drive intersection. No changes to lane configurations or intersection control at the Chilco Street and Constitution Drive intersection are proposed as part of the Project. The Project would result in LOS F during the a.m. peak hour under background plus-Project conditions; southbound vehicle queues on Chilco Street, at the approach to the Project entrance, would extend onto Bayfront Expressway. During the p.m. peak hour, vehicles would experience significant delay when exiting the Project site; the delay would exceed the impact threshold. Although queuing at the intersection of Bayfront Expressway and Chilco Street in the a.m. peak hour is not considered an impact, based on the City's LOS criteria, it is a safety concern for the site. The improvements identified below were designed to mitigate this impact.

The proposed mitigation for peak-hour impacts at the intersection of Chilco Street and Constitution Drive would provide the following elements to accommodate inbound a.m. and outbound p.m. traffic movements:

- Installation of a traffic signal and signalized pedestrian crossings on all four legs of the intersection.

- Provision of three southbound lanes on the one-block segment of Chilco Street between Bayfront Expressway and Constitution Drive, including two southbound left-turn lanes to accommodate the volume of left-turning vehicles that would be entering the Project site. In addition, during the a.m. peak hour, the provision of "split-phase" signal operation on Chilco Street is recommended.
- Provision of a northbound left-turn lane on Chilco Street where it approaches Constitution Drive.
- Provision of two outbound lanes to Chilco Street for vehicles that would be exiting the Project site.

With implementation of this mitigation measure, the intersection would operate acceptably at LOS D during both peak hours. Bicycle lanes should be accommodated in the proposed improvements on Chilco Street, tying into the proposed improvements the Project Sponsor is constructing on Chilco Street as a separate project, and on Constitution Drive. These improvements are required to be operational prior to Building 22 occupancy. With these improvements, this impact would be reduced to a ***less-than-significant*** level. (LTS/M)

g. University Avenue and Adams Drive (#47)

Unacceptable LOS F occurs at this intersection under existing conditions, reflecting delay on the stop-controlled side street where it approaches University Avenue. Traffic volumes on Adams Drive where it approaches the stop sign are very low (i.e., 11 vehicle trips during the a.m. peak hour and 51 vehicles during the p.m. peak hour). Under background plus-Project conditions, the side-street approach volume is forecast to increase to 86 vehicles. However, traffic levels would remain below the threshold for warranting a traffic signal. Thus, a traffic signal is not recommended under background plus-Project conditions. The impact under background plus-Project conditions would therefore be ***significant and unavoidable***. (SU)

Installation of a traffic signal at this location would be recommended under 2040 cumulative conditions with the proposed General Plan. Therefore, if the proposed General Plan is adopted, this impact could be mitigated to less-than-significant levels (see Mitigation Measure TRA-13.1).

h. Jefferson Drive and Constitution Drive (#50)

During the p.m. peak hour, increased Project-related northbound traffic on Constitution Drive would result in an unacceptable LOS of D at one of the stop-controlled side-street approaches (i.e., the east leg of the intersection). This leg of the intersection is an existing driveway on the east side of the intersection that currently serves just 15 vehicle trips during the p.m. peak hour (primarily left turns by vehicles that exit the driveway toward Chilco Street), which is well below the level at which signalization would be considered. The volume on Jefferson Drive is similarly low, with a total of 69 vehicles turning right or left during the p.m. peak hour. The side-street approach volume from Jefferson Drive would operate at LOS C because the majority of approach vehicles would make a right turn toward Chilco Street and thus would not be delayed by northbound Project trips at this location. Therefore, because this impact would be limited to affecting a side-street driveway that serves just 15 vehicle trips during the p.m. peak hour, this impact would be ***less than significant***, and no mitigation is required. (LTS)

i. University Avenue and US 101 Southbound Ramps (#56)

During the a.m. peak hour, the intersection operates acceptably at LOS C under existing conditions and LOS D under background conditions. The addition of Project traffic would result in an unacceptable LOS of E during the a.m. peak hour at this Caltrans-controlled intersection in East Palo Alto. During the p.m. peak hour, the intersection currently operates unacceptably at LOS E under existing conditions; the net change under background plus-Project conditions would not exceed the 4-second threshold. Therefore this impact would be less than significant during the p.m. peak hour but potentially significant during the a.m. peak hour.

Mitigation Measure TRA-1.2 (described below) would reduce allowable net Project vehicle trip generation by more than 75 percent during the a.m. peak hour. This intersection would be anticipated to operate acceptably at LOS D during the a.m. peak hour. Therefore, with Mitigation Measure TRA-1.2, the impact would be reduced to a ***less-than-significant*** level. (LTS/M)

j. University Avenue and Woodland Avenue (#57)

During the a.m. peak hour, this intersection operates at LOS F under existing and background conditions. Under background plus-Project conditions, the increase in a.m. peak-hour delay compared with background conditions would exceed the applicable impact threshold for East Palo Alto intersections that operate at LOS F (i.e., delay to critical movements increases by more than 4 seconds and the critical v/c ratio increases by 0.01).

Provision of a dedicated right-turn lane on the westbound approach leg from Woodland Avenue would mitigate the impact. However, this potential mitigation is not recommend because it would encourage cut-through traffic via Woodland Avenue, potentially affecting the Willows neighborhood in Menlo Park and Woodland neighborhood in East Palo Alto. To avoid facilitating use of Woodland Avenue as a cut-through route, this potential mitigation is not recommended, consistent with City policies that discourage cut-through traffic in residential neighborhoods. In addition, because the intersection is not within the city of Menlo Park, implementation of this potential mitigation cannot be guaranteed.

Mitigation Measure TRA-1.2 (described below) would reduce the allowable net Project vehicle trip generation by more than 75 percent during the a.m. peak hour; the net change in delay to critical movements would not exceed the thresholds described above. Therefore, with Mitigation Measure TRA-1.2, the impact would be reduced to a ***less-than-significant*** level. (LTS/M)

k. Chilco Street and Hamilton Avenue (#60)

This all-way stop-controlled intersection, located within the Belle Haven neighborhood south of the Project site, would operate at an unacceptable LOS of F during the p.m. peak hour because a portion of Project vehicle trips would be anticipated to exit the site via Chilco Street southbound to Hamilton Avenue or other streets in the Belle Haven neighborhood to access Willow Road. Signalizing the intersection would improve LOS to an acceptable level.

Mitigation Measure TRA-1.2 (described below) would reduce allowable net Project vehicle trip generation during the p.m. peak hour, but this intersection would still be anticipated to operate unacceptably given the proximity to the Project entrance and the LOS standard

of C or better that applies to this intersection. However, any mitigation to improve traffic operations would encourage use of Chilco Street as a cut-through route, which conflicts with City of Menlo Park goals that aim to reduce cut-through traffic in residential neighborhoods. Therefore, to avoid facilitating use of Chilco Street and Hamilton Avenue as cut-through routes, mitigating this traffic impact by increasing capacity is not recommended, consistent with City policies that discourage cut-through traffic in residential neighborhoods. Other mitigation measures are discussed below (Mitigation Measure TRA-3.1 and TRA-3.2) to discourage cut-through traffic in the Belle Haven neighborhood. The peak-hour impact on intersection LOS is therefore ***significant and unavoidable***. (SU)

l. Bayfront Expressway and Facebook Building 20 Entrance (#65)

The intersection, which opened following the completion of Building 20 in 2015, would operate at LOS C during the a.m. peak hour and LOS F during the p.m. peak hour under background conditions. However, LOS would degrade to LOS E during the a.m. peak hour and LOS F during the p.m. peak hour under background plus-Project conditions.

During the a.m. peak hour, traffic in the single westbound left-turn lane from Bayfront Expressway (entering Building 20) would exceed storage capacity, resulting in delays for peak-direction traffic when traveling westbound on Bayfront Expressway. Provision of a two-lane left-turn pocket at the proposed adjacent entrance to the Project site at Building 21 would reduce the potential impact during the a.m. peak hour by allowing a portion of left-turn demand to use the adjacent intersection (see Mitigation Measure TRA-3.1).

During the p.m. peak hour, delay would increase for exiting eastbound vehicles traveling toward Willow Road under background plus-Project conditions. This would be caused by the high volume of eastbound vehicles traveling between the Project site and Willow Road via a short segment of Bayfront Expressway. Building 20 currently has a driveway to Willow Road that allows Project traffic to exit directly to Willow Road. Encouraging greater use of that driveway for outbound trips could help to reduce a portion of the eastbound traffic volume on Bayfront Expressway traveling toward Willow Road during the p.m. peak hour.

The a.m. peak hour impact would be reduced to less-than-significant levels by providing a two-lane westbound left-turn pocket at the adjacent intersection of Bayfront Expressway and the Building 21 entrance. However, the right-of-way along Bayfront Expressway is constrained by the wetlands located adjacent to the roadway; therefore, this mitigation measure may not be feasible. Alternatively, the Project Sponsor shall be required to conduct a micro-simulation evaluation as part of the proposal to install a new traffic signal at the proposed entrance to Building 21 and ensure that queues do not extend onto the Bayfront Expressway at either intersection (see Mitigation Measure TRA-1.1m, below). During the p.m. peak hour, the provision of one additional eastbound through lane on Bayfront Expressway would mitigate the impact but would not improve net vehicle delay where traffic approaches the Dumbarton Bridge unless accompanied by measures to reduce downstream delay. The mitigation may not be feasible given downstream capacity constraints. Furthermore, the intersection is under the jurisdiction of Caltrans; therefore, the City cannot guarantee that this improvement would be implemented.

Mitigation Measure TRA-1.2 (described below) would reduce net Project vehicle trip generation during both peak hours, but the increase in eastbound traffic on Bayfront Expressway between Chilco Street and Willow Road would still be anticipated to result in a significant impact on p.m. peak-hour LOS at this intersection. Therefore, the impact would remain ***significant and unavoidable***. (SU)

m. Bayfront Expressway and Proposed Building 21 Entrance (#66)

As part of the Project, this would be a signalized intersection, providing two outbound travel lanes, one inbound right-turn lane, and one inbound left-turn for vehicles entering the Project site from Bayfront Expressway. During the p.m. peak hour, the intersection would operate unacceptably at LOS F. During the a.m. peak hour, the intersection would operate acceptably, based on LOS, but the anticipated queue length for vehicles entering the site via the single proposed westbound left-turn lane (from Bayfront Expressway to the Building 21 entrance) would exceed storage capacity, resulting in delays for westbound through traffic on Bayfront Expressway.

The proposed mitigation to reduce a.m. peak-hour impacts on Bayfront Expressway and the Project impact at the entrance to Building 20 is the provision of a two-lane left-turn pocket for northbound vehicles that would enter Building 21 from Bayfront Expressway. However, the right-of-way along Bayfront Expressway is constrained by the wetlands located adjacent to the roadway; therefore, this mitigation measure may not be feasible. Alternatively, the Project Sponsor shall be required to conduct a micro-simulation evaluation as part of the proposal to install a new traffic signal at this location and ensure that queues do not extend onto Bayfront Expressway at either intersection (see Mitigation Measure TRA-1.1l, above) while maintaining an acceptable intersection LOS of D or better. With the proposed mitigation, if feasible, the impact would be ***less than significant*** during the a.m. peak hour.

During the p.m. peak hour, the provision of one additional eastbound through lane on Bayfront Expressway would mitigate the impact but would not improve net vehicle delay where traffic approaches the Dumbarton Bridge unless accompanied by measures to reduce downstream delay. This potential mitigation is unlikely to be feasible given downstream capacity constraints.

Mitigation Measure TRA-1.2 (described below) would reduce net Project trip generation by more than 75 percent during the a.m. peak hour and more than 90 percent during the p.m. peak hour; the volume of inbound and outbound vehicle trips via the proposed Building 21 driveway would be reduced by approximately 30 percent during both peak hours. With Mitigation Measure TRA-1.2, the impact would be ***less than significant*** during the p.m. peak hour. Because the feasibility of the a.m. peak-hour mitigation described above has not yet been confirmed, the impact would remain ***significant and unavoidable.*** (SU)

TRA-1.2: Reduce the Peak-Hour Share of Allowable Vehicle Trips under the Trip Cap for Both the Project Site and Buildings 10–19 to No More than 50 Percent of Allowable Vehicle Trips during Each 2-Hour Peak Commute Period. The Project trip cap, as proposed, would allow up to 69 percent of vehicle trips within each 2-hour peak commute period to enter or exit the site within a single peak hour. Similarly, the approved vehicle trip caps for Buildings 10–20 currently allow up to 70 percent of permitted vehicle trips within each 2-hour peak commute period to occur within a single hour.

The proposed mitigation would reduce the maximum number of allowable peak-hour vehicle trips to no more than 50 percent of the 2-hour peak-period vehicle trip cap for both the Project site and Buildings 10–19. Table 3.3-7 compares potential peak 1-hour vehicle trips under the Project with the proposed mitigation. As shown, the proposed mitigation would reduce the total volume of allowed peak-hour vehicle trips to the Project site and Buildings 10–19 by 28 percent.

Table 3.3-7. Proposed Mitigation Measure TRA-1.2 – Reduction in Peak-Hour Vehicle Trip Cap

Existing and Proposed Vehicle Trip Caps	Project Vehicle Trip Cap (including Buildings 10–19)		Vehicle Trip Cap with Mitigation TRA-1.2	
	Two-hour Trip Cap	Peak-Hour Trips	Two-hour Trip Cap	Peak-Hour Trips
Buildings 10–19	2,600	1,820	2,600	1,300
Buildings 20–23 and Hotel (with Project trip cap)	4,511	3,100	4,511	2,255
Total Vehicle Trip Caps (with Project)	**7,111**	**4,920**	**7,111**	**3,555**
Portion of 2-hour trip cap within one peak hour		*69%*		*50%*
Peak-hour vehicle trip reduction with mitigation (total of Buildings 10–19, 20–23, and hotel)				28%

Table 3.3-8 compares net peak-hour vehicle trip generation under the Project with the proposed mitigation. As shown, the Project would generate 1,803 a.m. and 1,488 p.m. peak-hour vehicle trips. With this mitigation, the net increase in the number of peak-hour vehicles resulting from the Project would be reduced to 438 a.m. and 123 p.m. peak-hour vehicle trips. The proposed mitigation would, therefore, reduce the net increase in the number of peak-hour vehicle trips resulting from the Project by more than 75 percent during the a.m. peak hour and more than 90 percent during the p.m. peak hour.

Table 3.3-8. Net Peak-Hour Vehicle Trip Comparison with Mitigation Measure TRA-1.2

Existing and Proposed Vehicle Trip Caps	A.M. Peak-Hour Vehicle	P.M. Peak-Hour Vehicle
Existing Vehicle Trip Caps (without Project)		
Buildings 10–19	1,820	1,820
Building 20	772	772
Building 23	525	840
Total Permitted Vehicle Trips (without Project)	*3,117*	*3,432*
Proposed Vehicle Trip Caps (with Project)		
Buildings 10–19	1,820	1,820
Buildings 20–23 and Hotel (with Project trip cap)	3,100	3,100
Total Permitted Vehicle Trip (with Project)	*4,920*	*4,920*
Net Vehicle Trips with Project (unmitigated)	***1,803***	***1,488***
Proposed Vehicle Trip Caps (with Mitigation TRA-1.2)		
Buildings 10–19	1,300	1,300
Buildings 20–23 and Hotel	2,255	2,255
Total Vehicle Trip Caps (with MitigationTRA-1.2)	*3,555*	*3,555*
Net Peak-Hour Vehicle Trips with Project and Mitigation TRA-1.2	***438***	***123***
Percent Reduction in Peak-Hour Project Vehicle Trips	***76%***	***91%***

Table 3.3-9 compares the rate of vehicle trip generation per 1,000 gsf of office space, with and without the proposed mitigation, with that of a typical suburban general office and corporate headquarters site. As shown, typical suburban office and corporate headquarter sites generate between 1.41 and 1.56 peak-hour vehicle trips per 1,000 gsf. Without the mitigation, the Project would generate up to 1.88 peak-hour vehicle trips per 1,000 gsf. With the mitigation, the Project would generate up to 1.37 vehicle trips per 1,000 gsf.

Table 3.3-9. Vehicle Trip Generation Comparison (Size of Office Space)

		Vehicle Trips per 1,000 gsf		
Project Comparison		**A.M. Peak Hour**	**P.M. Peak Hour**	**Daily**
Buildings 20–23 (unmitigated)		1.88	1.88	15.15
Buildings 20–23 (with mitigation TRA 1.2)		1.37	1.37	15.15
Comparison with ITE Trip Generation Rates (vehicle trips per 1,000 gsf)				
Land Use Category	ITE Code	A.M. Peak Hour	P.M. Peak Hour	Daily
General Office	710	1.56	1.49	11.03
Corporate Headquarters	714	1.52	1.41	7.98

As described in Mitigation Measure TRA-1.1, the reduction in the number of net peak-hour vehicle trips under Mitigation Measure TRA-1.2 would result in less-than-significant impacts on peak-hour LOS at the following study intersections under background plus-Project conditions:

- TRA-1.1a: Sand Hill Road and I-280 Northbound On-Ramp (#2)
- TRA-1.1e: Bayfront Expressway and Chilco Street (#40)
- TRA-1.1i: University Avenue and US 101 Southbound Ramps (#56)
- TRA-1.1j: University Avenue and Woodland Avenue (#57)

Mitigation Measure TRA-1.2 would reduce Project traffic and net vehicle delay at the remaining eight study intersections with significant background plus-Project LOS impacts (as described in Mitigation Measures TRA-1.1b, c, d, f, g, k, l, and m). However, increased delay would still exceed significance thresholds; therefore, the mitigation described in Impact TRA-1.1 would still be required with Mitigation Measure TRA-1.2 in place. In addition, as described below under the analysis of cumulative 2040 existing General Plan plus-Project conditions (see Mitigation Measure TRA-10.1), the reduction in the number of net peak-hour vehicle trips under Mitigation Measure TRA-1.2 would result in less-than-significant impacts at the following intersections under cumulative 2040 existing General Plan plus-Project conditions:

- TRA-10.1h: Chrysler Drive and Constitution Drive (#46)
- TRA-10.1j: University Avenue and US 101 Southbound Ramps (#56)
- TRA-10.1l: University Avenue and Bay Road (#51)

Impact TRA-2: Impacts on Routes of Regional Significance under Background Plus-Project Conditions. Some Routes of Regional Significance would operate at or below their LOS threshold with the addition of Project trips, and Project traffic would exceed the allowable 1 percent threshold, resulting in significant and unavoidable impacts. (SU)

The following Routes of Regional Significance would operate at or below their LOS threshold with the addition of Project trips, and Project traffic would exceed the allowable 1 percent threshold, resulting in ***potentially significant*** impacts on the following San Mateo County CMP roadway segments:

- Bayfront Expressway between US 101 and Marsh Road
- Bayfront Expressway between Willow Road and University Avenue
- Bayfront Expressway between University Avenue and the county line
- US 101 north of Marsh Road
- US 101 south of Willow Road

MITIGATION MEASURE. Mitigation Measure TRA-1.2 (described above) would reduce allowable net Project vehicle trip generation by more than 75 percent during the a.m. peak hour and more than 90 percent during the p.m. peak hour. In addition, Mitigation Measure TRA-2.1 would implement improvements to Routes of Regional Significance to address background plus-Project effects. However, the Project impact on the following Routes of Regional Significance would remain ***significant and unavoidable****:*

- Bayfront Expressway between US 101 and Marsh Road
- Bayfront Expressway between Willow Road and University Avenue
- Bayfront Expressway between University Avenue and the County line
- US 101 north of Marsh Road
- US 101 south of Willow Road

TRA-2.1: Implement Improvements to Routes of Regional Significance to Address Background Plus-Project Effects. Providing additional travel lanes would increase segment capacity but would not be feasible on all segments given available right-of-way widths and both downstream and downstream capacity limitations on facilities such as US 101 and the Dumbarton Bridge. In addition, the routes are under the control of Caltrans, and the City cannot guarantee mitigation.

Impact TRA-3: Increase in Daily Traffic Volumes on Roadway Segments under Background Plus-Project Conditions. Increases in daily traffic associated with the Project under near-term plus-Project Conditions would result in increased ADT volumes on Project area roadway segments, resulting in significant and unavoidable impacts. (SU)

The Project would generate up to 16,329 net daily vehicle trips during a typical weekday under the proposed trip cap. Based on the criteria for significance, 21 roadway segments, located on the following 14 streets, would be significantly affected by the forecast increase in daily traffic volumes under background plus-Project conditions:

- Adams Drive
- Alameda de las Pulgas
- Alpine Road
- Cambridge Avenue
- Chilco Street
- Constitution Drive
- Hamilton Drive
- Ivy Drive
- Marsh Road
- Middlefield Road
- Newbridge Street
- Oak Grove Avenue
- Sand Hill Road
- Santa Cruz Avenue

Roadway improvements are needed to mitigate impacts of the Project on study roadways under background plus-Project conditions. A typical mitigation measure would be to widen the road in order to add travel lanes and the capacity needed to accommodate the increase in the number of net daily trips. However, increasing the capacity of the roadway would require additional rights-of-way, which would affect local property owners. It is also considered infeasible. Furthermore, the widening of roadways can lead to other effects, such as induced travel demand (e.g., more vehicles on the roadway because of increased capacity on a particular route), air quality degradation, increases in noise associated with motor vehicles, and reductions in transit use (less congestion or reduced driving time may make driving more attractive than transit travel). Wider roadways also result in the degradation of bicycle and pedestrian facilities, including increased intersection crossing times. There is also a quality-of-life aspect to roadway planning because congestion, mobility, air quality, and noise impacts affect the quality of life for local residents, commuters, employees, and businesses in the area. Neighborhoods as well as commercial business centers are affected by roadway projects. Thus, although traffic may increase on certain roadways by varying percentages, it should be viewed as more than an LOS or traffic operations issue.

MITIGATION MEASURES. Partial mitigation measures are identified to reduce the impacts of the Project on daily roadway segments under near-term plus-Project conditions. However, even with these measures, it would not be possible to fully mitigate impacts on study segments without eliminating most of the daily vehicle trips generated by the Project. Therefore, the impact would remain ***significant and unavoidable.***

TRA-3.1: Provide Measures to Reduce Cut-Through Traffic in the Belle Haven Neighborhood via Chilco Street (South of the Dumbarton Rail Corridor), Newbridge Street, and Ivy Drive. The Project Sponsor shall provide measures to prevent cut-through traffic, which could include prohibiting left-turns from the Project site to Chilco Street during the p.m. peak period. The provision of physical traffic-calming measures could also be included where such measures would not affect emergency access and/or transit service, subject to community and City approval. Because community members and other potentially affected stakeholders may be affected by such improvements, the Project Sponsor shall fund a Neighborhood Traffic Plan to identify appropriate measures for reducing cut-through traffic.

TRA-3.2: Provide Multi-Modal Improvements on Study Segments that Could Be Affected by Increased ADT. The Project Sponsor shall provide measures to improve mobility options (e.g., walking, bicycling, transit), consistent with the City's Complete Streets goals, which would help to offset the effect of daily traffic generated by the Project. In particular, such measures could include pedestrian enhancements across Willow Road at Hamilton Drive, Ivy Drive, and Newbridge Street as well as at other affected study segment locations. These measures are discussed further under Impacts TRA-4 and TRA-5.

Impact TRA-4: Pedestrian Connections under Background Plus-Project Conditions. The Project would result in a lack of adequate pedestrian connections to the area circulation system under background plus-Project conditions, resulting in a potentially significant impact. (LTS/M)

The Project would provide pedestrian connections to immediately adjacent sidewalks, and a proposed bicycle/pedestrian bridge over Bayfront Expressway would allow for public access to the Bay Trail and Bayfront Park from the Project site and the Belle Haven neighborhood. Frontage improvements, including bicycle and pedestrian improvements, along Chilco Street are being implemented by the Project Sponsor in partnership with the City as separate a project that is already under construction. Frontage improvements are typically required by property owners as redevelopment occurs. Along Chilco Street, the planned improvements are to be located on the northeast side of the street between Terminal Avenue and Constitution Drive. These include a continuous pedestrian pathway and a Class IV separated bikeway, lighting, and landscaping. The improvements will be phased to expedite construction.

Other pedestrian facilities in the immediate vicinity are limited; gaps in the area sidewalk network would remain within a short distance of the Project site. No sidewalks are provided on Constitution Drive, immediately west of the Project site, which provides a connection to the Bayfront (formerly M-2) area, resulting in ***potentially significant*** impacts.

MITIGATION MEASURE. Mitigation Measure TRA-4.1 would result in ***less-than-significant*** impacts on pedestrian facilities.

TRA-4.1: Provide External Pedestrian Connections to the Area Circulation System and adjacent Land Uses. The proposed mitigation would include providing and/or contributing to the cost of pedestrian improvements to eliminate gaps in the sidewalk network in key areas that provide access routes to and from the Project site. The improvements outlined below were selected to provide an immediate connection to the Project site.

a. Constitution Drive

The Project Sponsor shall construct sidewalks along one side of Constitution Drive between Chilco Street and Chrysler Drive and pedestrian crosswalks and curb ramps at Chilco Street and Constitution Drive as well as Jefferson Drive and Constitution Drive. Construction of sidewalk and crossing improvements along this section of Constitution Drive, in conjunction with other planned and funded sidewalk construction in the area, will provide continuous pedestrian access from the Project site to the Bayfront (formerly M-2) area.

Impact TRA-5: Bicycle Connections under Background Plus-Project Conditions. The Project would result in a lack of adequate bicycle connections to the area's circulation system under background plus-Project conditions, resulting in potentially significant impacts. (LTS/M)

As part of the Project, a proposed bicycle/pedestrian bridge over Bayfront Expressway would be provided to allow public access to the Bay Trail and Bayfront Park from the Project site and the Belle Haven neighborhood. Frontage improvements, including bicycle and pedestrian improvements, along Chilco Street are being implemented in partnership with the City by the Project Sponsor as a separate project that is already under construction. Frontage improvements are typically required by property owners as redevelopment occurs. Along Chilco Street, the planned improvements are to be located on the northeast side of the street between Terminal Avenue and Constitution Drive. These include a continuous pedestrian pathway and a Class IV separated bikeway, lighting, and landscaping. The improvements will be phased to expedite construction. However, gaps would remain in the existing and planned bicycle routes that would most likely be used as key access routes to the Project site. Continuous

bicycle facilities are not provided between the US 101 overcrossing at Ringwood Avenue/Market Place, nor on segments of Willow Road that provide bicycle access to the Project site, including the US 101 overcrossing, resulting in ***potentially significant*** impacts.

MITIGATION MEASURE. The following mitigation measure has been identified to provide an immediate connection to the Project site. Implementation of Mitigation Measure TRA-5.1 would result in ***less-than-significant*** impacts.

TRA-5.1: *Provide Bicycle Connections to the Area Circulation System and adjacent Land Uses.* The recommended mitigation would include providing and/or contributing to the cost of bicycle improvements to eliminate gaps in the bicycle network that would most likely be used as a key access route to the Project site, including bicycle connections to and from the Menlo Park Caltrain station.

a. Hamilton Avenue

The Project Sponsor shall install bicycle boulevard treatments on Hamilton Avenue between Chilco Street and the pedestrian/bicycle overcrossing of US 101. Bicycle boulevards generally include treatments to facilitate travel by bicyclists. Typical treatments generally include stop-sign modifications, lane markings, signage, and wayfinding elements. This designation is consistent with the street classification proposed in the ConnectMenlo draft Circulation Element.

b. Northbound Access to the Project Site for Bicyclists

The Project Sponsor shall provide facilities for northbound bicyclists to cross Willow Road and access the Project site, thereby minimizing vehicle/bicycle conflicts. Such facilities may include a two-stage left-turn queue box, or similar improvements, to accommodate northbound left-turn movements for bicyclists at the Willow Road/Hamilton Drive intersection from the curbside bicycle lane, in conjunction with a Class I pathway or similar improvements for northbound bicyclists to the travel on the west side of Willow Road between Hamilton Avenue and the Project site.

Impact TRA-6: Pedestrian and/or Bicycle/Vehicle Conflicts. The Project design would cause increased potential for pedestrian and/or bicycle/vehicle conflicts, resulting in potentially significant impacts. (LTS/M)

The Project site plan includes elements that could increase the potential for bicycle/vehicle and pedestrian/vehicle conflicts. The Project proposes to facilitate internal pedestrian and bicycle circulation through use of emergency vehicle access (EVA) lanes and internal drive aisles, which could result in conflicts with on-campus tram and shuttle vehicles as well as vehicles that may be attempting to access parking spaces. This would result in ***potentially significant*** impacts.

MITIGATION MEASURE. Implementation of Mitigation Measure TRA-6.1 would result in ***less-than-significant*** impacts.

TRA-6.1: Refine the Project Design to Minimize Conflicting Movements between Bicycles, Pedestrians, and Other Travel Modes within the Project Site. The design for bicycle and pedestrian crossings, similar to the design at the Building 20 driveway, should direct bicycle and pedestrian traffic to the signalized intersection at Bayfront Expressway to avoid conflicts with motor vehicles and shuttle buses at uncontrolled crossings. The Project Sponsor shall work to minimize conflicts to the satisfaction of the transportation manager prior to approval of the site plan for construction.

Impact TRA-7: Increased Demand for Transit Services under Background Plus-Project Conditions. The Project would result in less-than-significant demand for transit services under background plus-Project conditions. (LTS)

The Project would provide a private shuttle bus service for employees to travel to/from regional transit stations, such as the Menlo Park and Palo Alto Caltrain stations, and regional locations outside of Menlo Park in San Francisco, the South Bay, and the East Bay. Therefore, the Project is not anticipated to result in a substantial increase in regional public transit ridership that cannot be accommodated by existing regional transit services. However, the Project could result in some increases in local transit demand on existing local routes within Menlo Park and East Palo Alto that do not currently serve the Project site directly, including SamTrans Route 281, which terminates in the adjacent Belle Haven neighborhood. Regardless, the Project impact is anticipated to be ***less than significant*** given the provision of shuttle bus service to the site, and no mitigation is required.

Impact TRA-8: Delay for Public Transit Vehicles under Background Plus-Project Conditions. The Project would result in significant and unavoidable delays for public transit vehicles under background plus-Project conditions. (SU)

Potential impacts on AC Transit's Dumbarton bus service would occur because of the potential for increased approach delays. To reduce delays, capacity-enhancing measures such as transit signal pre-emption or queue-jump lanes could be provided on some approach segments. Additionally, the Project Sponsor provided funding for SamTrans to conduct the Dumbarton Transportation Corridor Study,[2] which is currently under way and anticipated to be completed in approximately 1 year. The study is anticipated to recommend a phased program of operational and infrastructure improvements to enhance mobility between Alameda, San Mateo, and Santa Clara Counties. The study will examine opportunities to improve auto, transit, bicycle, pedestrian, and other uses for the Dumbarton Bridge and the Dumbarton rail bridge, including enhancements to Dumbarton Express Bus (DBX) commuter service. The study will also identify ways to enhance rail bridge safety on the Bay's waterways and provide connectivity to commuter and intercity rail services. (e.g., by recommending options for preserving and repurposing the rail bridge). Through connections to Capitol Corridor, Altamont Commuter Express, Amtrak, and Caltrain, commuters from the South Bay could travel to destinations in the East Bay, the Central Valley, and beyond. However, recommendations from this study were not available when this document was being prepared. The Project Sponsor shall continue to collaborate with the City, SamTrans, and AC Transit to develop potential transit system improvements following completion of the Dumbarton Transportation Corridor Study. Because the provision of measures to reduce delay cannot be guaranteed at this time, this impact is ***significant and unavoidable***. (SU)

Impact TRA-9: Impacts on VMT. VMT per employee generated by the Project would not exceed a level 15 percent below the regional average VMT per employee. (LTS)

Information published as part of the 2013 Plan Bay Area EIR was reviewed to determine average weekday VMT per capita within the nine-county Bay Area region. This average trip length is used to determine the relevant standard or threshold for addressing a potentially significant VMT impact, following the *Revised Proposal on Updates to the CEQA Guidelines on Evaluating Transportation Impacts in CEQA.*[3]

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[2] San Mateo County Transit District. 2016. *Dumbarton Transportation Corridor Study*. Available: <http://www.samtrans.com/Planning/Planning_and_Research/DumbartonTransportationCorridorStudy.html>. Accessed: May 6, 2016.

[3] Governor's Office of Planning and Research. 2016. *Revised Proposal on Updates to the CEQA Guidelines on Evaluating Transportation Impacts in CEQA.* Implementing Senate Bill 743 (Steinberg, 2013). January 20. Available: https://www.opr.ca.gov/docs/Revised_VMT_CEQA_Guidelines_Proposal_January_20_2016.pdf. Accessed: May 6, 2016.

As summarized in Table 3.3-10, below, the regional average was calculated to be 20.8 miles per employee. The significance threshold is defined as a 15 percent reduction below the regional average, or 17.7 miles per employee. The Project Sponsor provided information about travel patterns and the characteristics of existing sites that operate adjacent to the Project site in order to estimate VMT per employee. Mode share for employees was determined with use of cordon counts, shuttle ridership counts, and onsite passenger interviews. To collect self-reported data regarding travel characteristics, the information was supplemented with data about workers' place of residence (at the city or zip code level to ensure employee privacy), visitor and delivery trip logs, and a housing and transportation survey. The information was analyzed to determine the average number of miles traveled by employees, vendors and contractors, and visitors, resulting in an average weekday VMT of 15.6 miles per employee.

Table 3.3-10. Project-Generated VMT Comparison

Area	Daily VMT per Employee
Nine-county Bay Area Regional Average	20.8
Threshold: 15% below Nine-County Bay Area Regional Average	17.7
Project	15.6

Because the Project's daily VMT per Employee of 15.6 miles is below the threshold of 17.7 miles, the Project's impact is considered ***less than significant,*** and no mitigation is required.

Cumulative 2040 Conditions

This section evaluates cumulative (2040) conditions without the Project under the current General Plan. The cumulative conditions assume that all approved and pending projects in Menlo Park are constructed and occupied, along with the additional development capacity in the Bayfront (formerly M-2) area, based on the 1994 General Plan Land Use Element and existing zoning. This current buildout potential under the General Plan is estimated to be approximately 2 million gsf for non-residential uses.

Cumulative 2040 Existing General Plan Conditions

This section evaluates baseline cumulative conditions for the Project and assumes that all approved and pending projects in Menlo Park are constructed and occupied, along with the additional development capacity in the Bayfront area, based on the 1994 General Plan Land Use Element. Full occupancy of Buildings 10–20 and Building 23 is also assumed, similar to background conditions. Table 3.3-11 summarizes the anticipated number of residents and jobs for this scenario.

Table 3.3-11. Cumulative 2040 Existing General Plan Growth (Without Project)

Analysis Scenario	Dwelling Units	Residents	Non-residential Development (gsf)	Jobs
Existing Conditions	13,100	32,900	14,600,000	30,900
Cumulative 2040 Existing General Plan	15,380	38,780	18,173,000	41,200
Net Increase	***2,280***	***5,880***	***3,543,000***	***10,300***

Traffic Volumes and LOS (Cumulative 2040 Existing General Plan Conditions)

The growth assumptions regarding dwelling units, residents, non-residential development, and jobs summarized in Table 3.3-11 were used to develop traffic forecasts for daily, a.m., and p.m. peak hours under 2040 conditions. The MPM model, which was used to develop the forecasts, accounts for changes in residential and non-residential land use patterns under cumulative conditions more accurately than other forecasting methods.

Daily Traffic Volumes

Forecast daily traffic volumes under cumulative 2040 existing General Plan conditions are shown in Appendix 3.3-2, which contains daily volume tables that show the forecast traffic volumes for each study segment under all scenarios.

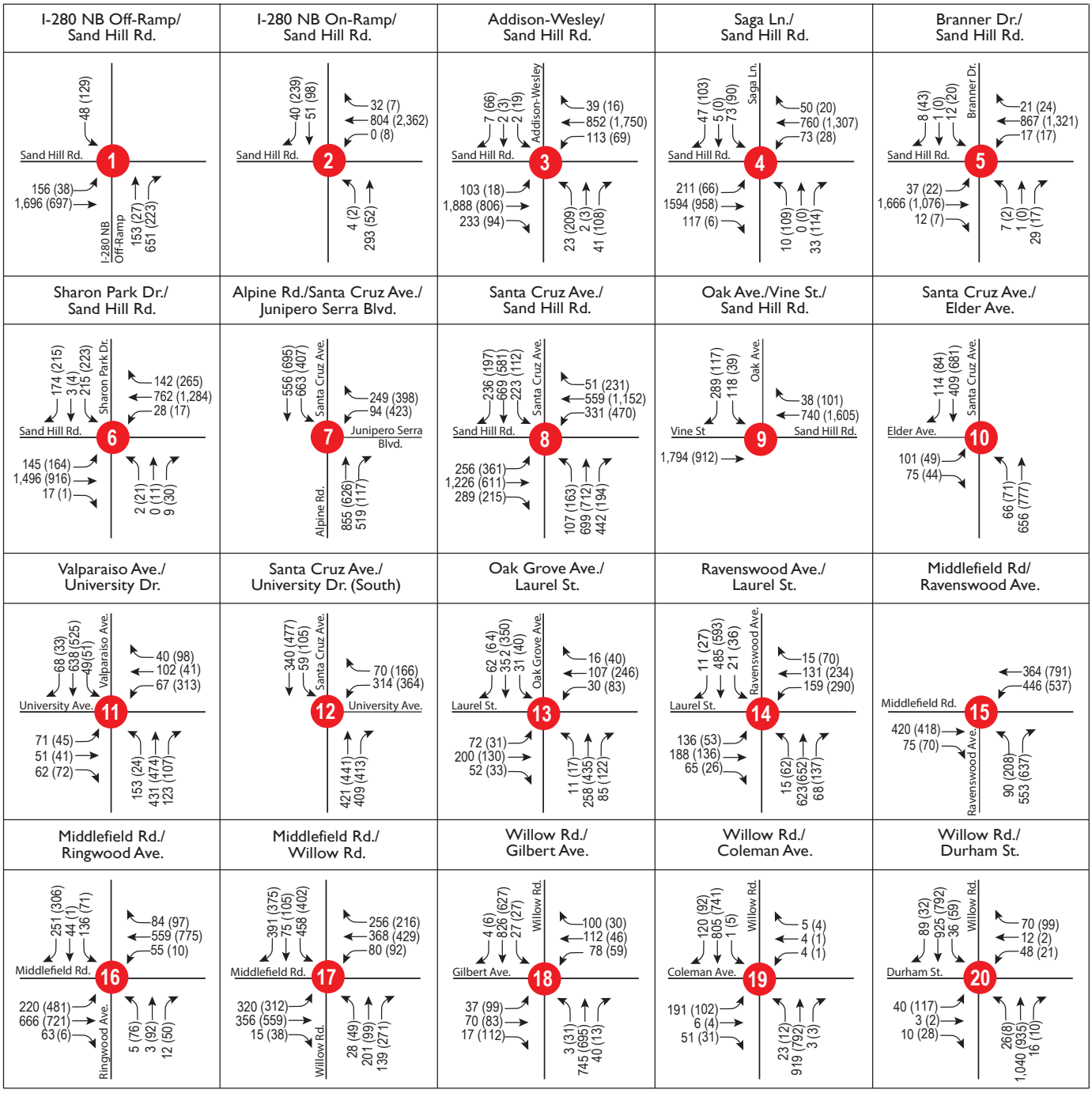
Peak-Hour Traffic Volumes

Forecasts of peak-hour traffic volumes under cumulative 2040 existing General Plan conditions at each study intersection were based on anticipated land use changes, as described above. By utilizing the MPM model, this forecast also incorporates anticipated changes to the jobs/housing balance in adjacent cities and throughout the region by 2040 that will affect peak-hour traffic patterns. Figures 3.3-18 through 3.3-20 illustrate forecast peak-hour vehicle turning movement volumes, lane geometry, and traffic controls at each study intersection under cumulative 2040 existing General Plan conditions. Detailed LOS calculations are contained in Appendix 3.3-4.

Cumulative 2040 Existing General Plan (No-Project) Conditions Intersection LOS Findings

Figure 3.3-21 illustrates the peak-hour LOS for each study intersection; tables that summarize the delay for each intersection are provided in Appendix 3.3-1. The following 22 study intersections would operate unacceptably under cumulative 2040 existing General Plan conditions without the Project:

- Sand Hill Road and the I-280 northbound off-ramp (study intersection #1) – a.m.
- Sand Hill Road and the I-280 northbound on-ramp (study intersection #2) – p.m.
- Willow Road and Middlefield Road (#17) – a.m. and p.m.
- Willow Road and Gilbert Avenue (#18) – p.m.
    - During the p.m. peak hour, this finding reflects unserved demand.
- Willow Road and Coleman Avenue (#19) – p.m.
    - During the p.m. peak hour, this finding reflects unserved demand.
- Willow Road and Durham Street (#20) – a.m. and p.m.
    - During both the a.m. and p.m. peak hours, this finding reflects unserved demand.
- El Camino Real and Ravenswood Avenue (#28) – a.m.
- Willow Road and Bay Road (#32) – a.m. and p.m.
    - During both peak hours, this finding reflects delay due to unserved demand and downstream queues (southbound approaching the US 101 ramps during the a.m. peak hour and northbound approaching the Willow/Bayfront intersection during the p.m. peak hour).



LEGEND

Study Intersection

AM (PM) Peak Hour Traffic Volumes

Source: TJKM, 2016.

Graphics ... 00296.15 (5-18-2016)

Figure 3.3-18

Cumulative 2040 Existing General Plan Conditions Traffic Volumes

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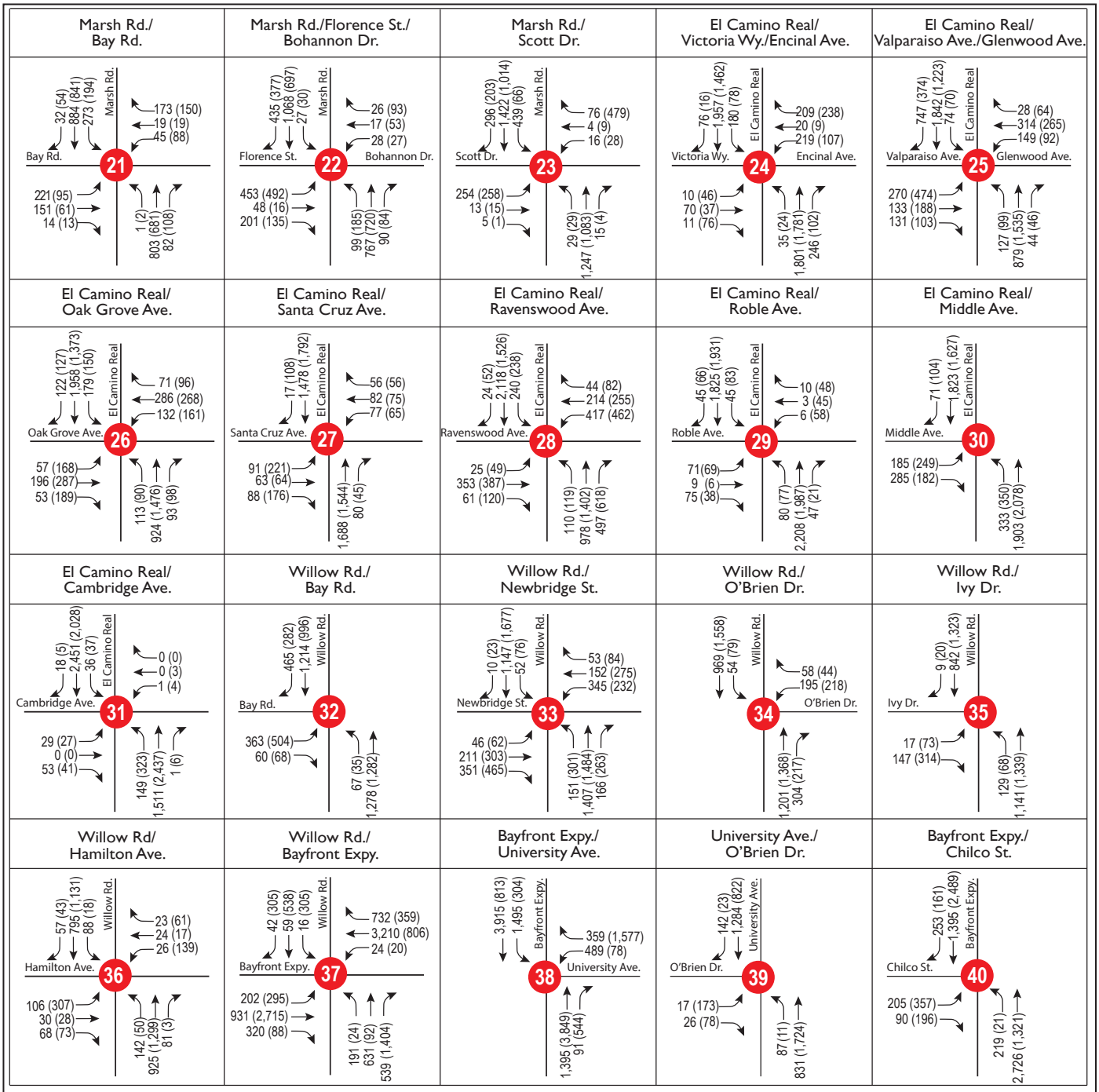


LEGEND

Study Intersection

AM (PM) Peak Hour Traffic Volumes

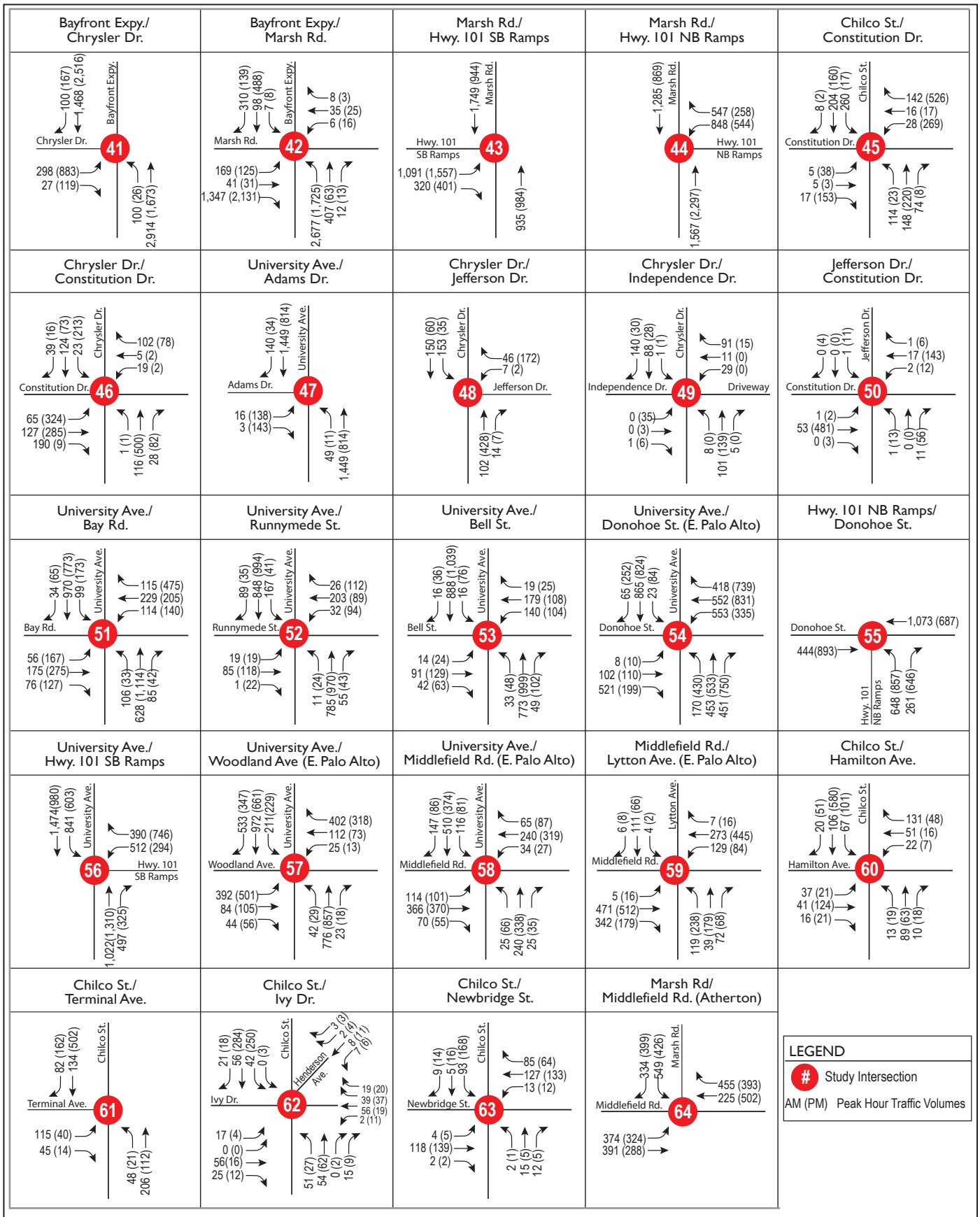
Source: TJKM, 2016.

Graphics ... 00296.15 (5-18-2016)

Figure 3.3-19

Cumulative 2040 Existing General Plan Conditions Traffic Volumes

Facebook Campus Expansion Project Draft EIR



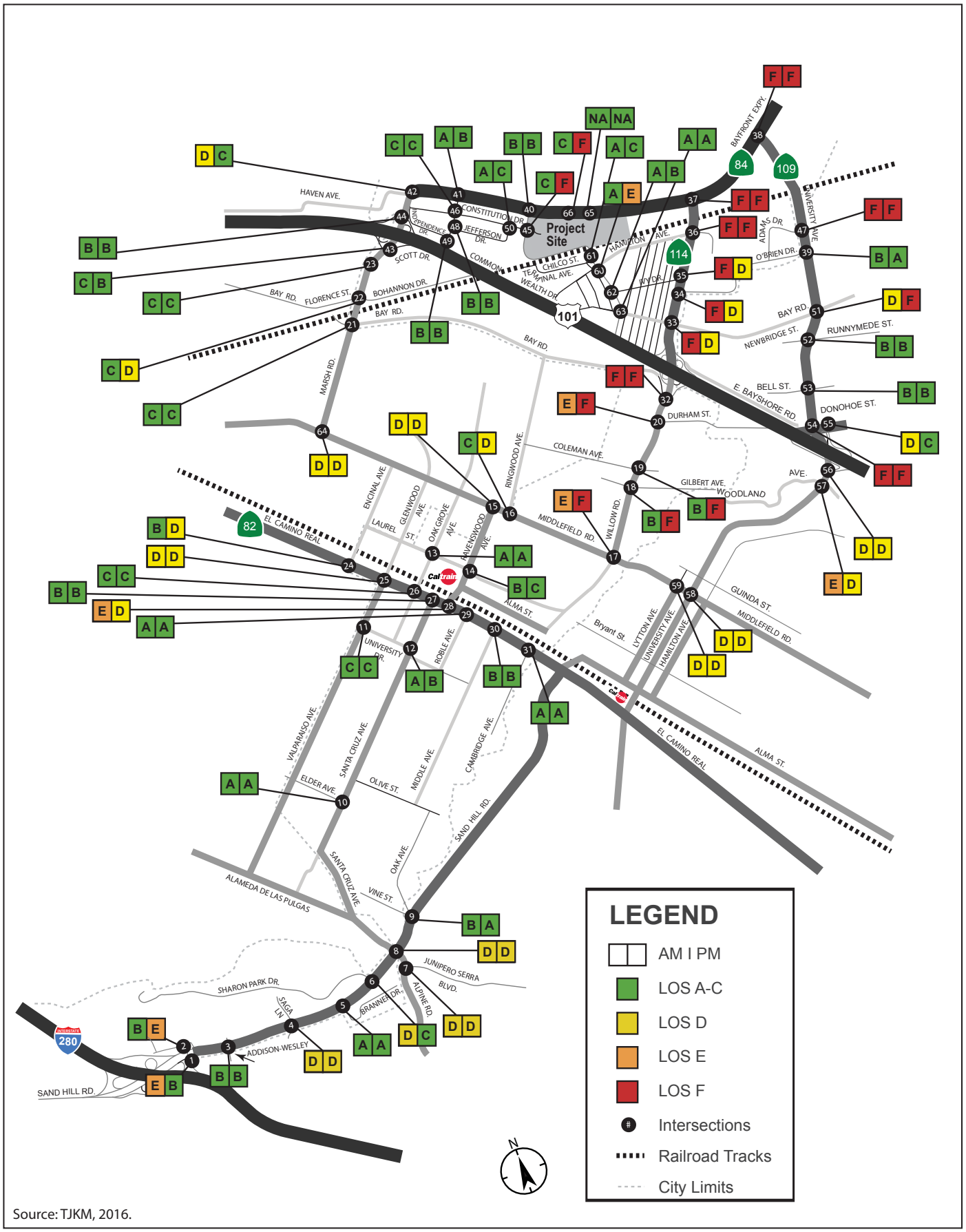
Source: TJKM, 2016.

Graphics ... 00296.15 (5-18-2016)

Figure 3.3-20

Cumulative 2040 Existing General Plan Conditions Traffic Volumes

Facebook Campus Expansion Project Draft EIR



Source: TJKM, 2016.

Graphics ... 00296.15 (5-18-2016)

Figure 3.3-21
Intersection LOS – Cumulative 2040 Existing General Plan Conditions
Facebook Campus Expansion Project Draft EIR

- Willow Road and Newbridge Street (#33) – a.m.
  - During the a.m. peak hour, this finding reflects delay from downstream queues (southbound approaching the US 101 ramps).
- Willow Road and O'Brien Drive (#34) – a.m.
  - The LOS finding reflects unserved demand due to upstream and downstream congestion during the a.m. peak hour.
- Willow Road and Ivy Drive (#35) – a.m.
  - The LOS finding reflects unserved demand due to upstream and downstream congestion during the a.m. peak hour.
- Willow Road and Hamilton Avenue (#36) – a.m. and p.m.
  - The LOS finding reflects unserved demand due to upstream and downstream congestion during the a.m. peak hour.
- Willow Road and Bayfront Expressway (#37) – a.m. and p.m.
  - During the p.m. peak hour, this finding reflects unserved demand that affects the northbound right-turn movements.
- University Avenue and Bayfront Expressway (#38) – a.m. and p.m.
  - During the a.m. peak hour, this finding reflects unserved demand that affects the westbound left-turn movement.
- Chilco Street and Constitution Drive (#45) – p.m.
- University Avenue and Adams Drive (#47) – a.m. and p.m.
- University Avenue and Bay Road (#51) – p.m.
- University Avenue and Donohoe Street (#54) – a.m. and p.m.
- University Avenue and Woodland Avenue (#57) – a.m. and p.m.
- Middlefield Road and Lytton Avenue (#59) – p.m.
- Chilco Street and Hamilton Avenue (#60) – p.m.
- Bayfront Expressway and Building 20 entrance (#65) – p.m.

Of these 22 locations, 19 are consistent with the operating levels identified under background conditions. The three additional intersections that degrade to unacceptable levels with added traffic under cumulative 2040 existing General Plan conditions (without the Project) are Sand Hill Road and the I-280 northbound off-ramp (#1), El Camino Real and Ravenswood Avenue (#28), and Chilco Street and Hamilton Avenue (#60).

Cumulative 2040 Existing General Plan plus-Project Conditions

This section evaluates cumulative (2040) conditions with the Project under the current General Plan. This scenario adds the Project to the cumulative 2040 existing General Plan conditions to determine potential cumulative impacts.

The Project, as described in Chapter 2, *Project Description*, is assumed to be in place in this scenario. The Project travel characteristics, including trip generation and distribution assumptions, and TDM program components are consistent with the description provided in the background plus-Project conditions section, above. Table 3.3-12 summarizes the anticipated number of residents and jobs for this scenario compared with the cumulative 2040 existing General Plan scenario.

Table 3.3-12. Cumulative 2040 Existing General Plan Plus-Project Growth

Analysis Scenario	Dwelling Units	Residents	Non-residential Development (gsf)	Jobs
Existing Conditions	13,100	32,900	14,600,000	30,900
Cumulative 2040 Existing General Plan	15,380	38,780	18,173,000	41,200
Cumulative 2040 Existing General Plan Plus Project	15,380	38,780	18,300,000	47,750

Traffic Volumes and LOS (Cumulative 2040 Existing General Plan plus Project)

The growth assumptions regarding dwelling units, residents, non-residential development, and jobs summarized in Table 3.3-12 formed the basis for the traffic forecasts for daily, a.m., and p.m. peak hours under the cumulative 2040 existing General Plan plus-Project conditions, which were developed with use of the MPM model.

Daily Traffic Volumes

Daily traffic volumes with Project traffic added to cumulative 2040 existing General Plan conditions are shown in Appendix 3.3-2. DTA forecasting predicts that some local and regional traffic would be rerouted to respond to congested locations. Although the Project would increase traffic volumes, sometimes the volumes would occur on streets where background traffic would shift to different locations, resulting in apparent decreases in traffic. Given the City of Menlo Park criteria, Project traffic would result in potentially significant impacts on 21 of the 87 roadway segments.

The roadway segment volume thresholds do not reflect the true capacity of each segment but, rather, a quality-of-life standard to minimize added traffic on residential streets. The affected study segments are located along the following streets within Menlo Park:

- Adams Drive
- Alameda de las Pulgas
- Alpine Road
- Cambridge Avenue
- Constitution Drive
- Hamilton Drive
- Ivy Drive
- Marsh Road
- Middlefield Road
- Newbridge Street
- Oak Grove Avenue
- Sand Hill Road
- Santa Cruz Avenue

Peak Hour Traffic Operations

Forecasts of peak-hour traffic volumes under cumulative 2040 existing General Plan plus-Project conditions at each study intersection were based on the MPM model. Lane configurations, signal timings, and peak-hour turning movement volumes would remain consistent under background plus-Project conditions. Figures 3.3-22 to 3.3-24 illustrate the forecast peak-hour vehicle turning movement volumes at each study intersection under cumulative 2040 existing General Plan plus-Project conditions. The forecast peak-hour traffic volumes reflect the anticipated net change that would result from the Project.

Cumulative 2040 Existing General Plan plus-Project Conditions Intersection LOS Findings

The peak-hour LOS for each study intersection under cumulative 2040 existing General Plan plus-Project conditions is illustrated in Figure 3.3-25. Detailed LOS tables are provided in Appendix 3.3-1.

The following 25 study intersections would operate unacceptably under cumulative 2040 existing General Plan plus-Project conditions:

- Sand Hill Road and the I-280 northbound off-ramp (study intersection #1) – a.m.
- Sand Hill Road and the I-280 northbound on-ramp (study intersection #2) – p.m.
- Willow Road and Middlefield Road (#17) – a.m. and p.m.
- Willow Road and Gilbert Avenue (#18) – p.m.
    - During the p.m. peak hour, this finding reflects unserved demand.
- Willow Road and Coleman Avenue (#19) – p.m.
    - During the p.m. peak hour, this finding reflects unserved demand.
- Willow Road and Durham Street (#20) – a.m. and p.m.
    - During both the a.m. and p.m. peak hours, this finding reflects unserved demand.
- El Camino Real and Glenwood Avenue (#25) – a.m.
- El Camino Real and Ravenswood Avenue (#28) – a.m.
- Willow Road and Bay Road (#32) – a.m. and p.m.
    - During both peak hours, this finding reflects delay due to unserved demand and downstream queues (southbound approaching the US 101 ramps during the a.m. peak hour and northbound approaching the Willow/Bayfront intersection during the p.m. peak hour).
- Willow Road and Newbridge Street (#33) – a.m.
    - During the a.m. peak hour, this finding reflects delay from downstream queues (southbound approaching the US 101 ramps).
- Willow Road and O'Brien Drive (#34) – a.m.
    - The LOS finding reflects unserved demand due to upstream and downstream congestion during the a.m. peak hour.
- Willow Road and Ivy Drive (#35) – a.m.
    - The LOS finding reflects unserved demand due to upstream and downstream congestion during the a.m. peak hour.

- Willow Road and Hamilton Avenue (#36) – a.m. and p.m.
    - The LOS finding reflects unserved demand due to upstream and downstream congestion during the a.m. peak hour.
- Willow Road and Bayfront Expressway (#37) – a.m. and p.m.
- University Avenue and Bayfront Expressway (#38) – a.m. and p.m.
    - During the a.m. peak hour, this finding reflects unserved demand that affects the westbound left-turn movement.
- Chilco Street and Constitution Drive (#45) – a.m. and p.m.
- Chrysler Drive and Constitution Drive (#46) – p.m.
- University Avenue and Adams Drive (#47) – a.m. and p.m.
- University Avenue and Bay Road (#51) – p.m.
- University Avenue and Donohoe Street (#54) – a.m. and p.m.
- University Avenue and US 101 southbound ramps (#56) – a.m. and p.m.
- University Avenue and Woodland Avenue (#57) – a.m. and p.m.
- Chilco Street and Hamilton Avenue (#60) – p.m.
- Bayfront Expressway and Building 20 entrance (#65) – p.m.
- Bayfront Expressway and proposed Building 21 entrance (#66) – p.m.

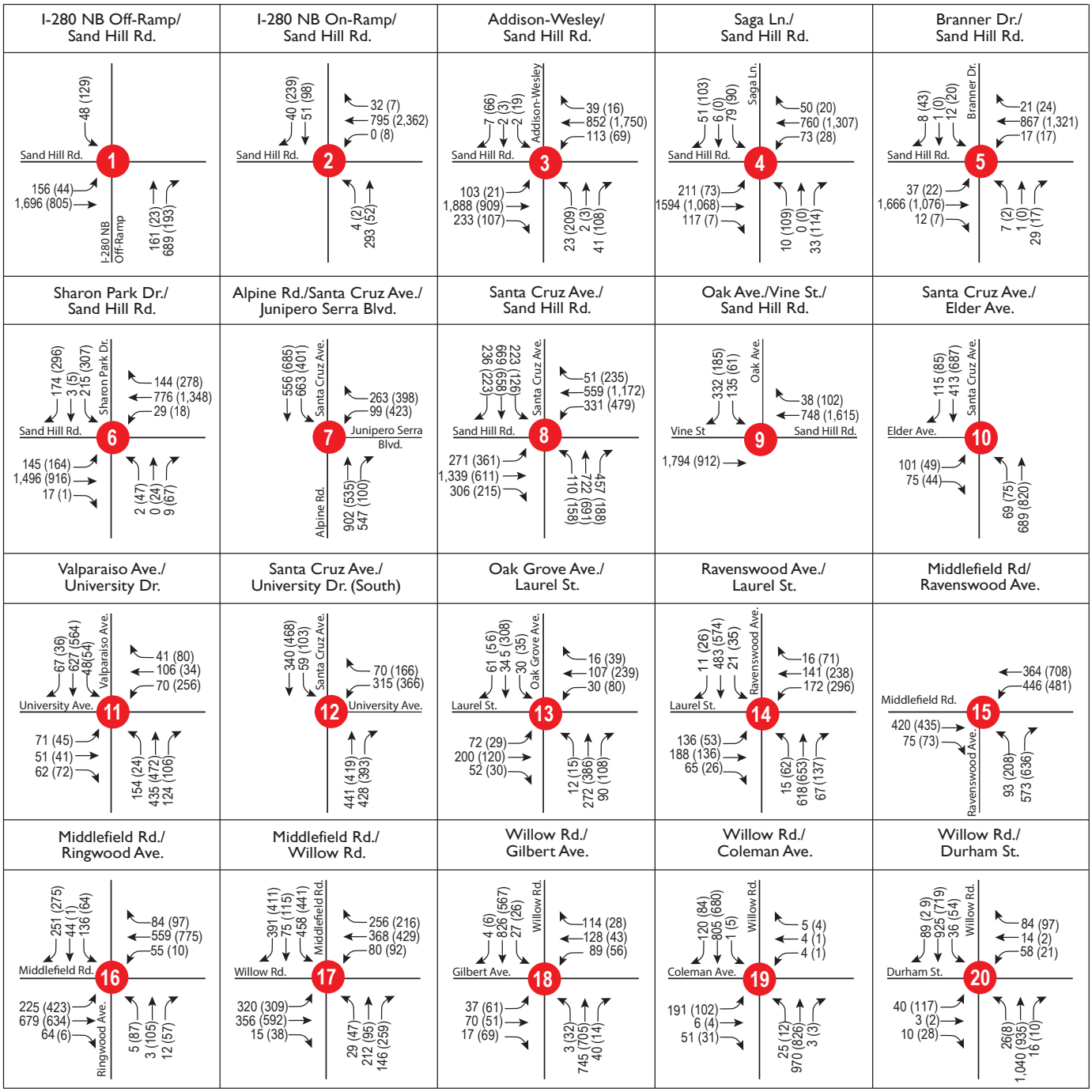
Of these 25 locations, 21 are consistent with the operating levels identified under cumulative 2040 existing General Plan conditions without the Project. The other four intersections that would degrade to unacceptable levels with added traffic from the Project are El Camino Real and Glenwood Avenue (#25), Chrysler Drive and Constitution Drive (#46), University Avenue and the US 101 southbound ramps (#56), and Bayfront Expressway and the proposed Building 21 entrance (#66). In addition, the Chilco Street and Constitution Drive (#45) intersection operates unacceptably during the p.m. peak hour without the Project; it would degrade to LOS F during the a.m. peak hour with the addition of Project traffic.

Cumulative Impacts and Mitigation Measures

Impact TRA-10: Peak-Hour Traffic Impacts at Intersections under Cumulative 2040 Existing General Plan Plus-Project Conditions. Increases in peak-hour vehicle traffic associated with the Project would result in increased delays during AM and PM peak hours, causing significant and unavoidable impacts on the operation of study intersections under cumulative 2040 conditions with the existing General Plan. (SU)

The Project is not anticipated to result in an increase in average vehicle delay that would exceed the significance threshold at the locations listed below. Therefore, Project impacts on these intersections would be less than significant under cumulative 2040 existing General Plan plus-Project conditions:

- Sand Hill Road and the I-280 northbound on-ramp (#2)
- Willow Road and Middlefield Road (#17)
- Willow Road and Gilbert Avenue (#18)



LEGEND

Study Intersection

AM (PM) Peak Hour Traffic Volumes

Source: TJKM, 2016.

Graphics ... 00296.15 (5-18-2016)

Figure 3.3-22

Cumulative 2040 Existing General Plan plus Project Conditions Traffic Volumes

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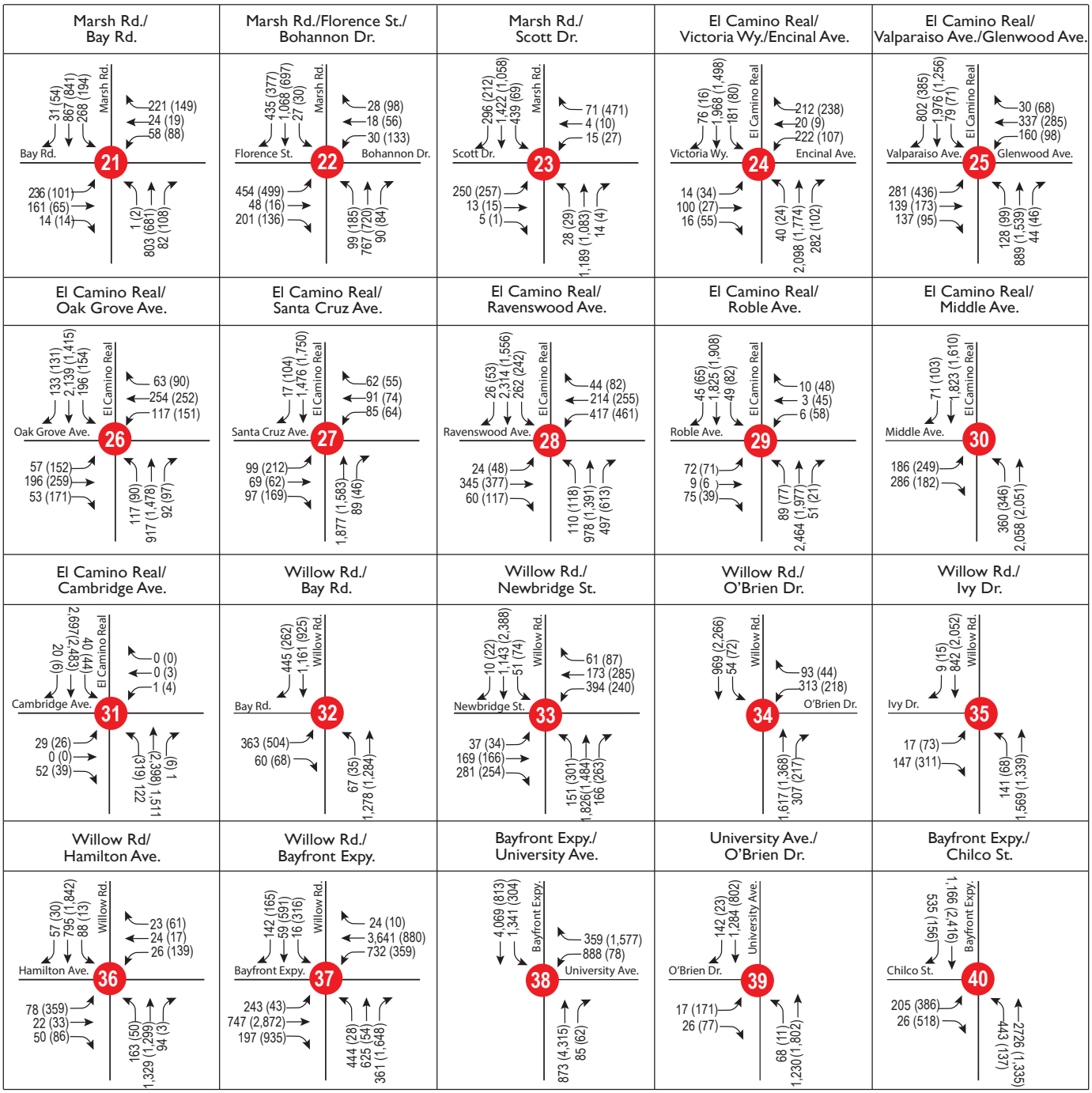


LEGEND

Study Intersection

AM (PM) Peak Hour Traffic Volumes

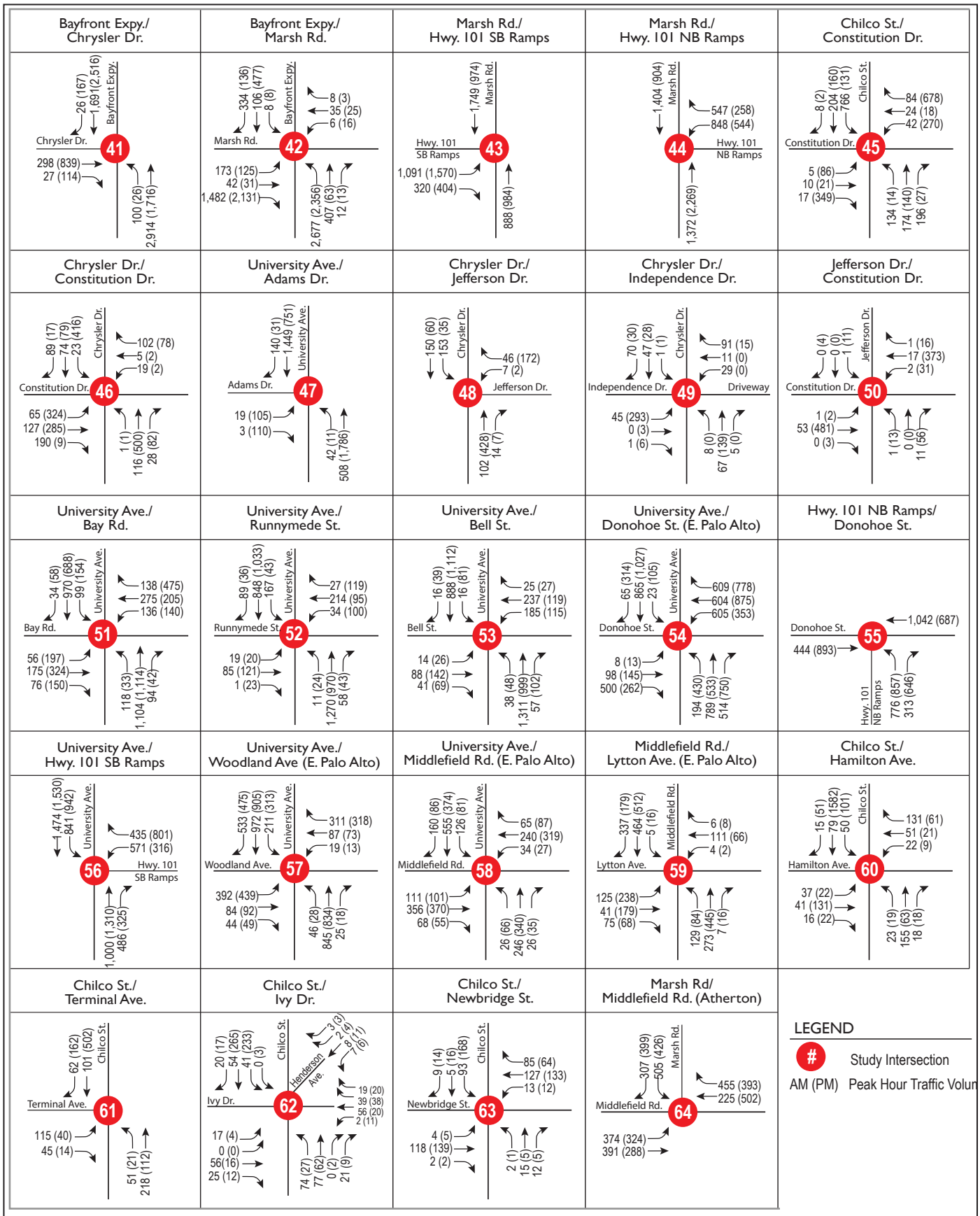
Source: TJKM, 2016.

Graphics ... 00296.15 (5-18-2016)

Figure 3.3-23

Cumulative 2040 Existing General Plan plus Project Conditions Traffic Volumes

Facebook Campus Expansion Project Draft EIR



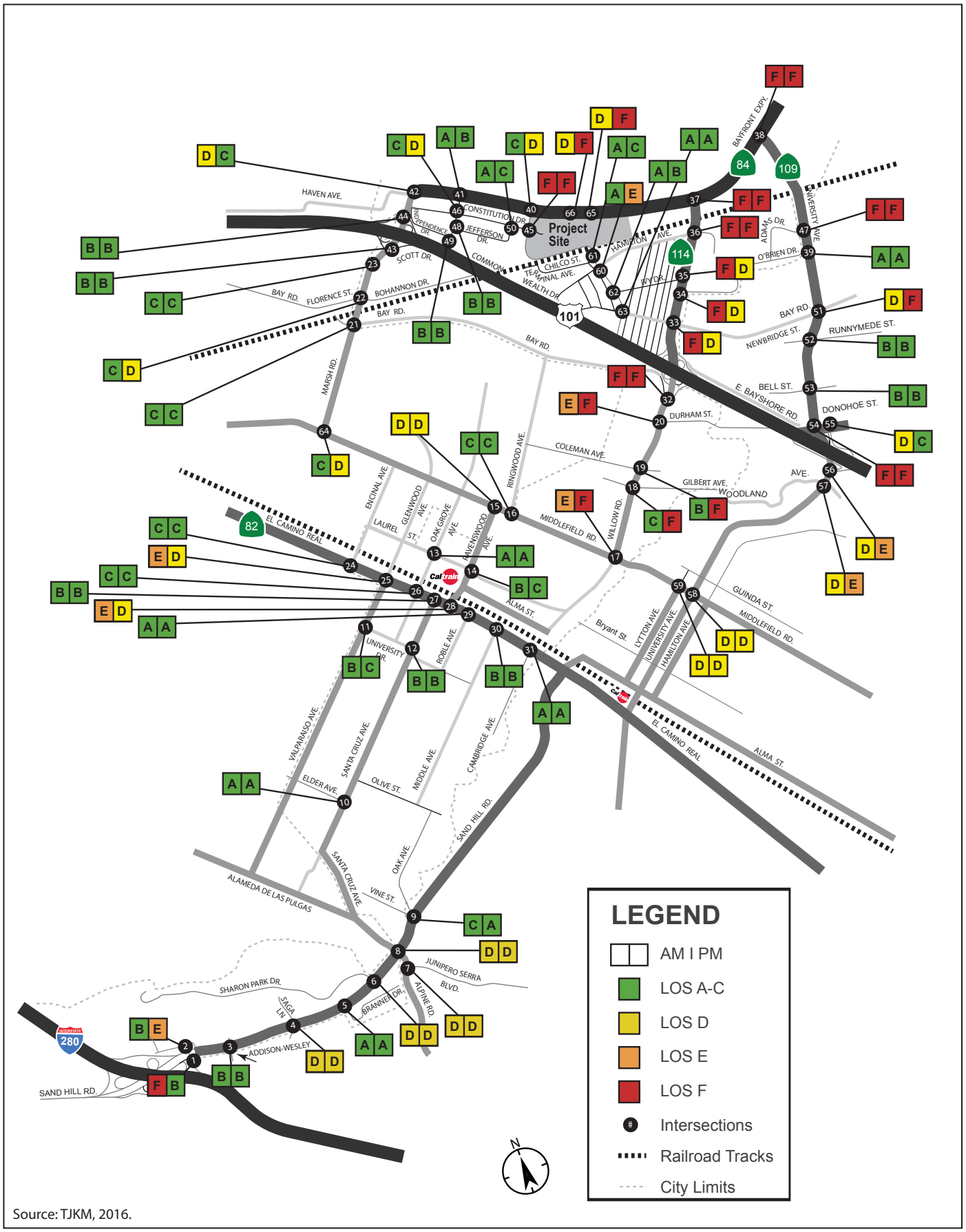
Source: TJKM, 2016.

Graphics ... 00296.15 (5-18-2016)

Figure 3.3-24

Cumulative 2040 Existing General Plan plus Project Conditions Traffic Volumes

Facebook Campus Expansion Project Draft EIR



Source: TJKM, 2016.

Graphics ... 00296.15 (5-18-2016)

Figure 3.3-25

Intersection LOS – Cumulative 2040 Existing General Plan plus Project Conditions

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- Willow Road and Coleman Avenue (#19)
- Willow Road and Durham Street (#20)
- Willow Road and Bay Road (#32)
- Willow Road and Newbridge Street (#33)
- Willow Road and O'Brien Drive (#34)
- Willow Road and Ivy Drive (#35)

AM Peak Hour

During the a.m. peak hour, the following intersections would operate acceptably under cumulative 2040 existing General Plan conditions without the Project, but the addition of traffic associated with the Project would result in an unacceptable LOS under cumulative 2040 existing General Plan plus-Project conditions:

- El Camino Real and Glenwood Avenue (#25)
- Chilco Street and Constitution Drive (#45)

The following intersections operate unacceptably under cumulative 2040 existing General Plan conditions, and the addition of Project traffic during the a.m. peak hour under cumulative 2040 existing General Plan plus-Project conditions would cause additional delay that would exceed the significance threshold and trigger a potentially significant impact:

- Sand Hill Road and the I-280 northbound off-ramp (#1)
- El Camino Real and Ravenswood Avenue (#28)
- Willow Road and Hamilton Avenue (#36)
- Willow Road and Bayfront Expressway (#37)
- University Avenue and Bay Road (#51)
- University Avenue and Donohoe Street (#54)

At the following study intersections on Bayfront Expressway, potential impacts on westbound through movements would occur during the a.m. peak hour because queue lengths for westbound left-turn pockets would exceed storage capacity, resulting in ***potentially significant*** impacts:

- Bayfront Expressway and the Building 20 entrance (#65)
- Bayfront Expressway and the proposed Building 21 entrance (#66)

PM Peak Hour

During the p.m. peak hour, the following intersections would operate acceptably under cumulative 2040 conditions without the Project, but the addition of traffic associated with the Project would result in an unacceptable LOS under cumulative 2040 plus-Project conditions:

- Chrysler Drive and Constitution Drive (#46)
- University Avenue and the US 101 southbound ramps (#56)
- University Avenue and Woodland Avenue (#57)

The following intersections operate unacceptably under cumulative 2040 existing General Plan conditions. The addition of Project traffic during the p.m. peak hour under cumulative 2040 existing General Plan plus-Project conditions would cause additional delay that would exceed the significance threshold and trigger a ***potentially significant*** impact:

- Willow Road and Hamilton Avenue (#36)
- Willow Road and Bayfront Expressway (#37)
- Bayfront Expressway and University Avenue (#38)
- Chilco Street and Constitution Drive (#45)
- Chrysler Drive and Constitution Drive (#46)
- University Avenue and Adams Drive (#47)
- University Avenue and Donohoe Street (#54)
- University Avenue and Woodland Avenue (#57)
- Chilco Street and Hamilton Avenue (#60)
- Bayfront Expressway and the Building 20 entrance (#65)
- Bayfront Expressway and the Proposed Building 21 entrance (#66)

MITIGATION MEASURES. As described below, two types of mitigation are provided to address potentially significant impacts on study intersections under cumulative 2040 existing General Plan plus-Project conditions, increasing capacity and reducing travel demand, similar to background plus-Project conditions. Where measures are consistent with those identified under background plus-Project conditions, the prior measure number is referenced. In addition Mitigation Measure TRA-1.2, above, would reduce the peak hour share of allowable vehicle trips. Regardless, impacts would remain ***significant and unavoidable*** at certain study intersections.

TRA-10.1: Provide Increased Traffic Capacity to Address Project Impacts on Peak-Hour LOS under Cumulative 2040 Existing General Plan plus-Project Conditions. Mitigation Measure TRA-10.1 identifies potential measures to mitigate or reduce Project impacts where feasible.

a. Sand Hill Road and the I-280 Northbound Off-Ramp (#1)

During the a.m. peak hour, the eastbound intersection of Sand Hill Road and the I-280 northbound off-ramp (study intersection #1) operates at LOS D under existing conditions. It would operate unacceptably at LOS E under cumulative 2040 existing General Plan conditions without the Project and degrade further to LOS F with the addition of Project trips, reflecting traffic delay while exiting I-280 northbound.

With implementation of Mitigation Measure TRA-1.2, the net increase in the number of peak-hour vehicle trips resulting from the Project during the a.m. peak hour would be reduced by more than 75 percent. With Mitigation Measure TRA-1.2, the intersection would operate at LOS E, and the net change in delay resulting from the Project would be reduced to less than 4 seconds. Therefore, with Mitigation Measure TRA-1.2, the Project contribution to the impact at this location under 2040 existing General Plan plus-Project conditions would be reduced to a ***less-than-significant*** level. (LTS/M)

b. El Camino Real and Glenwood Avenue (#25)

During the a.m. peak hour, traffic associated with the Project would result in an unacceptable LOS of E under cumulative 2040 existing General Plan plus-Project conditions.

The provision of a dedicated right-turn lane on Glenwood Avenue, where it approaches El Camino Real, is identified in the City's TIF program. The Project Sponsor's payment of the TIF shall partially mitigate this impact. The provision of one additional through lane on Glenwood Avenue would be needed to improve LOS to an acceptable LOS of D and fully mitigate this impact. However, the provision of an additional through lane is not feasible given the right-of-way constraints. Therefore, this impact would be considered ***significant and unavoidable*** under cumulative 2040 existing General Plan plus-Project conditions. (SU)

c. El Camino Real and Ravenswood Avenue-Menlo Avenue (#28)

During the a.m. peak hour, traffic associated with the Project would result in an unacceptable LOS under cumulative 2040 existing General Plan plus-Project conditions. Potential mitigation would be to provide a right-turn pocket on Menlo Avenue, where it approaches El Camino Real, and a third through lane on El Camino Real in both the northbound and southbound directions. These measures are identified in the City's TIF program. The Project Sponsor's payment of the TIF shall mitigate this impact. With implementation of this mitigation measure, the intersection would operate acceptably, and the impact would be reduced to a ***less-than-significant*** level. (LTS/M)

d. Willow Road and Hamilton Avenue (#36)

The Project impact was identified under background plus-Project conditions (see TRA-1.1b). No additional feasible mitigation measures were identified to reduce this peak-hour traffic impact, which would remain ***significant and unavoidable***. (SU)

e. Bayfront Expressway and Willow Road (#37)

The Project impact was identified under background plus-Project conditions. Additional delay would occur during the a.m. peak hour under cumulative 2040 existing General Plan plus-Project conditions. As discussed in Mitigation Measure TRA-1.1c, no additional feasible mitigation measures were identified to reduce this impact, which would remain ***significant and unavoidable***. (SU)

f. Bayfront Expressway and University Avenue (#38)

The Project impact was identified under background plus-Project conditions. Additional delay would occur under cumulative 2040 existing General Plan plus-Project conditions, triggering an impact during both the a.m. and p.m. peak hours. As discussed in Mitigation Measure TRA-1.1d, no additional feasible mitigation measures were identified to reduce this impact, which would remain ***significant and unavoidable***. (SU)

g. Chilco Street and Constitution Drive (#45)

This impact, identified under background plus-Project conditions, pertains to the design of the Project entrance, as described above in Mitigation Measure TRA-1.1f. With implementation of this mitigation measure, the intersection would operate acceptably, and this impact would be reduced to a ***less-than-significant*** level. (LTS/M)

h. Chrysler Drive and Constitution Drive (#46)

During the p.m. peak hour, the intersection of Chrysler Drive and& Constitution Drive (study intersection #46) operates acceptably at LOS C under cumulative 2040 existing General Plan conditions without the Project. Traffic associated with the Project would cause LOS to degrade to an unacceptable LOS of D during the p.m. peak hour under cumulative 2040 existing General Plan plus-Project conditions.

With implementation of Mitigation Measure TRA-1.2, the net increase in the number of peak-hour vehicle trips resulting from the Project during the p.m. peak hour would be reduced by more than 90 percent, and the intersection would operate acceptably at LOS C. Therefore, with Mitigation Measure TRA-1.2, the Project impact at this location under 2040 existing General Plan plus-Project conditions would be reduced to a ***less-than-significant*** level. (LTS/M)

i. University Avenue and Adams Drive (#47)

The Project impact was identified under background plus-Project conditions. Additional delay would occur under cumulative 2040 existing General Plan plus-Project conditions, triggering an impact during both the a.m. and p.m. peak hours (see Mitigation Measure TRA-1.1g). This impact would remain ***significant and unavoidable*** under existing General Plan plus-Project conditions. (SU)

Installation of a traffic signal at this location would be recommended under 2040 cumulative conditions with the proposed General Plan. Therefore, if the proposed General Plan is adopted, this impact could be mitigated to a less-than-significant level (see Mitigation Measure TRA-13.1i).

j. University Avenue and Bay Road (#51)

The Project was identified to have a potential impact during the p.m. peak hour under cumulative 2040 existing General Plan plus-Project conditions. With implementation of Mitigation Measure TRA-1.2, the net increase in the number of peak-hour vehicle trips resulting from the Project during the p.m. peak hour would be reduced by more than 90 percent. With Mitigation Measure TRA-1.2, the change in delay would not be anticipated to exceed 4 seconds, and the impact would be reduced to a ***less-than-significant*** level. (LTS/M)

k. University Avenue and Donohoe Street (#54)

This state-controlled intersection located adjacent to the US 101 northbound ramps in East Palo Alto operates at LOS F under existing conditions during both the a.m. and p.m. peak hours. The addition of Project traffic under cumulative 2040 existing General Plan plus-Project conditions would result in additional delay that would exceeding the 4-second significance threshold during both peak hours.

With implementation of Mitigation Measure TRA-1.2, the net increase in the number of peak-hour vehicle trips resulting from the Project would be substantially reduced, but the increase in delay would still be anticipated to exceed the 4-second significance threshold.

Potential mitigation options are limited given the proximity of adjacent freeway ramp intersections and recent development near the intersection. The provision of additional westbound lane capacity on Donohoe Street, including an extended dual left-turn pocket, dedicated through lane, and dual right-turn lanes, would reduce delay but would not be

feasible given the right-of-way limitations, including proximity to the adjacent property on the northeastern corner and the relatively short block length to the upstream US 101 northbound off-ramp. Similarly, providing a southbound right-turn lane on University Avenue and lengthening the northbound turn pockets, if feasible, would reduce delay but would most likely be constrained by adjacent land uses and proximity to the US 101 overpass and two northbound on-ramps. Furthermore, because the intersection is not under the control of the City of Menlo Park, implementation of potential mitigation to reduce peak-hour delay at this location, even if feasible options were available, cannot be guaranteed. This impact is therefore considered ***significant and unavoidable***. (SU)

l. University Avenue and US 101 Southbound Ramps (#56)

Additional delay would occur under cumulative 2040 existing General Plan plus-Project conditions, triggering a potential impact during the p.m. peak hour.

With implementation of Mitigation Measure TRA-1.2, the net increase in the number of peak-hour vehicle trips resulting from the Project during the p.m. peak hour would be reduced by more than 90 percent. Therefore, with Mitigation Measure TRA-1.2, the change in delay would not be anticipated to exceed 4 seconds, and the impact would be reduced to a ***less-than-significant*** level. (LTS/M)

m. University Avenue and Woodland Avenue (#57)

The Project impact was identified under background plus-Project conditions. Additional delay would occur under cumulative 2040 existing General Plan plus-Project conditions, triggering an impact during the p.m. peak hour.

With implementation of Mitigation Measure TRA-1.2, the net increase in the number of peak-hour vehicle trips resulting from the Project during the p.m. peak hour would be reduced by more than 90 percent Therefore, with Mitigation Measure TRA-1.2, the change in delay would not be anticipated to exceed 4 seconds, and the impact would be reduced to a ***less-than-significant*** level. (LTS/M)

n. Chilco Street and Hamilton Avenue (#60)

The Project impact was identified under background plus-Project conditions. Additional delay would occur under cumulative 2040 existing General Plan plus-Project conditions, triggering an impact during the p.m. peak hour. As discussed in Mitigation TRA-1.1k, no additional feasible mitigation measures were identified to reduce this impact, which would remain ***significant and unavoidable***. (SU)

o. Bayfront Expressway and Building 20 Entrance (#65)

The Project impact was identified under background plus-Project conditions. Additional delay would occur under cumulative 2040 existing General Plan plus-Project conditions, triggering an impact during the p.m. peak hour. As discussed in Mitigation Measure TRA-1.1l, no additional feasible mitigation measures were identified to reduce this impact, which would remain ***significant and unavoidable*** during the p.m. peak hour. (SU)

p. Bayfront Expressway and Proposed Building 21 Entrance (#66)

The Project impact was identified under background plus-Project conditions. Additional delay would occur under cumulative 2040 existing General Plan plus-Project conditions, triggering an impact during the a.m. and p.m. peak hours. As discussed in Mitigation

Measure TRA-1.1m, no additional feasible mitigation measures were identified to reduce this impact, which would remain ***significant and unavoidable*** during the a.m. peak hour. (SU)

Impact TRA-11: Impacts on Routes of Regional Significance under Cumulative 2040 Existing General Plan Plus-Project Conditions. Some Routes of Regional Significance would operate at or below their LOS threshold with the addition of Project trips, and Project traffic would exceed the allowable 1 percent threshold, resulting in significant and unavoidable impacts. (SU)

The following Routes of Regional Significance would operate at or below their LOS threshold with the addition of Project trips, and Project traffic would exceed the allowable 1 percent threshold, resulting in ***significant*** impacts:

- Bayfront Expressway between US 101 and Marsh Road
- Bayfront Expressway between Willow Road and University Avenue
- Bayfront Expressway between University Avenue and the county line
- US 101 north of Marsh Road
- US 101 south of Willow Road

MITIGATION MEASURE. As described in Mitigation Measure TRA-2.1, providing additional travel lanes, if feasible, would increase segment capacity but would not be feasible on all segments given available right-of-way widths and both downstream and downstream capacity limitations on facilities such as US 101 and the Dumbarton Bridge. In addition, the routes are under the control of Caltrans and not the City; therefore, mitigation cannot be guaranteed. No feasible mitigation measures were identified, and therefore, the Project impact on regional Routes of Regional Significance would remain ***significant and unavoidable***.

Impact TRA-12: Increase in Daily Traffic Volumes on Roadway Segments under Cumulative 2040 Existing General Plan Plus-Project Conditions. Increases in daily traffic under existing General Plan plus-Project conditions would result in increased ADT volumes on Project area roadway segments, resulting in significant and unavoidable impacts. (SU)

The Project would generate up to 16,329 net daily vehicle trips during a typical weekday under the proposed trip cap. Given the criteria for significance, 21 of the 87 roadway segments would experience significant impacts because of Project traffic. This is the same number, and same locations, shown in the background plus-Project evaluation.

A typical mitigation measure would be to widen the road in order to add travel lanes and the capacity needed to accommodate the increase in the number of net daily trips. However, increasing the capacity of the roadway would require additional rights-of-way, which would affect local property owners. It is also considered infeasible. Furthermore, the widening of roadways can lead to other effects, such as induced travel demand (e.g., more vehicles on the roadway because of increased capacity on a particular route), air quality degradation, increases in noise associated with motor vehicles, and reductions in transit use (less congestion or reduced driving time may make driving more attractive than transit travel). Wider roadways also result in the degradation of bicycle and pedestrian facilities, including increased intersection crossing times. There is also a quality-of-life aspect to roadway planning because congestion, mobility, air quality, and noise impacts affect the quality of life for local residents, commuters, employees, and businesses in the area. Neighborhoods as well as commercial business

centers are affected by roadway projects. Thus, although traffic may increase on certain roadways by varying percentages, it should be viewed as more than an LOS or traffic operation issue. Impacts would be ***significant***.

MITIGATION MEASURES. See Mitigation Measures TRA-3.1 and TRA-3.2 for partial mitigation measures to offset segment impacts. Because it would not be feasible to fully mitigate impacts on study segments, this cumulative impact would remain ***significant and unavoidable***.

Cumulative 2040 Proposed General Plan plus-Project Conditions

This section evaluates cumulative (2040) conditions with the Project in addition to the proposed update to the General Plan (ConnectMenlo). This scenario is based on the anticipated maximum development potential under the proposed General Plan. The Project, as described in Chapter 2, *Project Description*, is assumed to be in place in this scenario. Project travel characteristics, including trip generation, distribution assumptions, and TDM program components, are consistent with the description provided in the background plus-Project conditions section, above.

Proposed Land Use Changes

The proposed ConnectMenlo Land Use Element frames the type and scale of potential development that may occur over the next 20 years, particularly in the Bayfront (formerly M-2) area. ConnectMenlo also includes an update to City Zoning Ordinance provisions for the Bayfront area to implement the updated General Plan programs as well as design standards for development. An extensive community engagement process has been and will continue to be conducted as part of the update to the General Plan.

The proposed Land Use Element identifies a maximum level of potential development that could be accommodated under ConnectMenlo, consisting of approximately 2.3 million additional gsf of non-residential building space and 4,500 additional multi-family dwelling units beyond what is already possible under the existing General Plan. Table 3.3-13 provides a comparison of potential 2040 development under the existing and proposed General Plans, including the Project.

Table 3.3-13. Cumulative 2040 Proposed General Plan Growth

Analysis Scenario	Dwelling Units	Residents	Non-residential Development (gsf)	Jobs
Existing Conditions	13,100	32,900	14,600,000	30,900
Cumulative 2040 Existing General Plan (without Project)	15,380	38,780	18,173,000	41,200
Cumulative 2040 Existing General Plan (including Project)	15,380	38,780	18,300,000	47,750
Cumulative 2040 Proposed General Plan (including Project)	19,880	50,350	20,600,000	53,250

About 1.4 million gsf of the new non-residential development would be concentrated in the area between Willow Road and University Avenue (primarily for new and expanded life sciences uses). About 2,000 of the additional dwelling units would be located in that same area, with another 1,000 units in the Jefferson Drive area and 1,500 units on the Facebook East Campus on the north side of Bayfront Expressway. Non-residential development could also include ground-floor retail in a number of locations and roughly 500,000 gsf for three hotels, one in the Haven Avenue area, one in the Jefferson Drive area, and one on the Facebook West Campus. It is estimated that the anticipated development would increase the number of jobs in the Bayfront area by about 5,500 and beyond the amount accommodated by the current General Plan.

Traffic Volumes and LOS (2040 Proposed General Plan)

The growth assumptions regarding dwelling units, residents, non-residential development, and jobs formed the basis of traffic forecasts for daily, a.m., and p.m. peak hours under cumulative 2040 proposed General Plan conditions, which were developed using the MPM model.

Daily Traffic Volumes

Forecast daily traffic volumes under cumulative 2040 proposed General Plan conditions are shown in Appendix 3.3-2, which contains daily volume tables that show forecast traffic volumes for each study segment under all scenarios.

Peak-Hour Traffic Operations

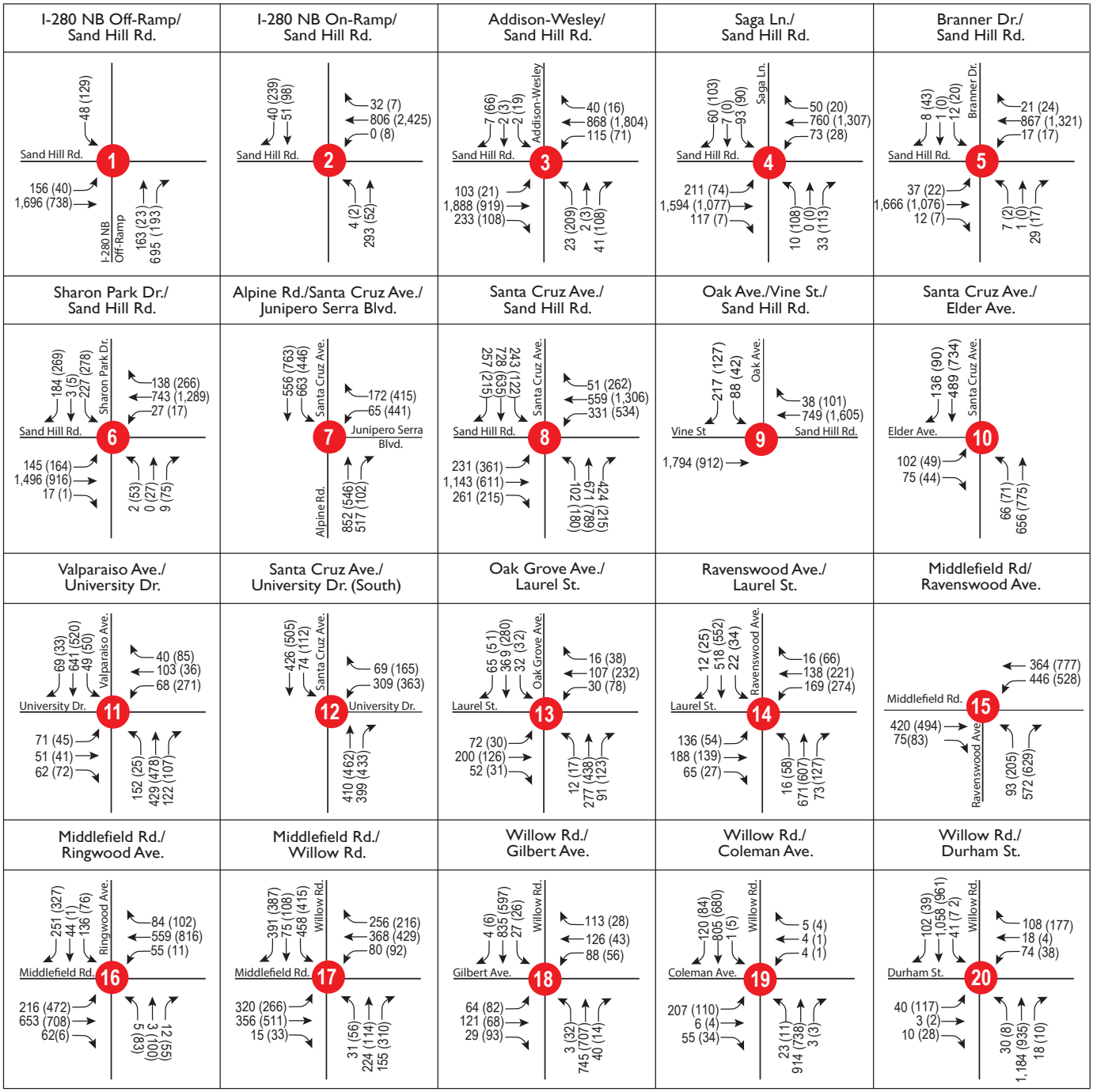
Forecasts of peak-hour traffic volumes under cumulative 2040 proposed General Plan conditions at each study intersection were based on anticipated land use changes, as described above. By utilizing the MPM model, this forecast also incorporates anticipated changes to the jobs/housing balance in adjacent cities and throughout the region by 2040 that will affect peak-hour traffic patterns. Figures 3.3-26 through 3.3-28 illustrate the forecast peak-hour vehicle turning movement volumes, lane geometry, and traffic controls at each study intersection under cumulative 2040 proposed General Plan conditions. The forecast peak-hour traffic volumes include vehicle trips that would result from the Project.

Cumulative 2040 Proposed General Plan Conditions Intersection LOS Findings

Figure 3.3-29 illustrates the peak-hour LOS for each study intersection under cumulative 2040 proposed General Plan conditions (including the Project). Tables that summarize the delay for each intersection are provided in Appendix 3.3-1. Detailed LOS calculations are contained in Appendix 3.3-4.

The following 23 study intersections would operate unacceptably under cumulative 2040 proposed General Plan conditions:

- Sand Hill Road and the I-280 northbound off-ramp (study intersection #1) – a.m.
- Sand Hill Road and the I-280 northbound on-ramp (study intersection #2) – p.m.
- Willow Road and Middlefield Road (#17) – a.m. and p.m.
- Willow Road and Gilbert Avenue (#18) – p.m.
    - During the p.m. peak hour, this finding reflects unserved demand.
- Willow Road and Coleman Avenue (#19) – p.m.
    - During the p.m. peak hour, this finding reflects unserved demand.



LEGEND

Study Intersection

AM (PM) Peak Hour Traffic Volumes

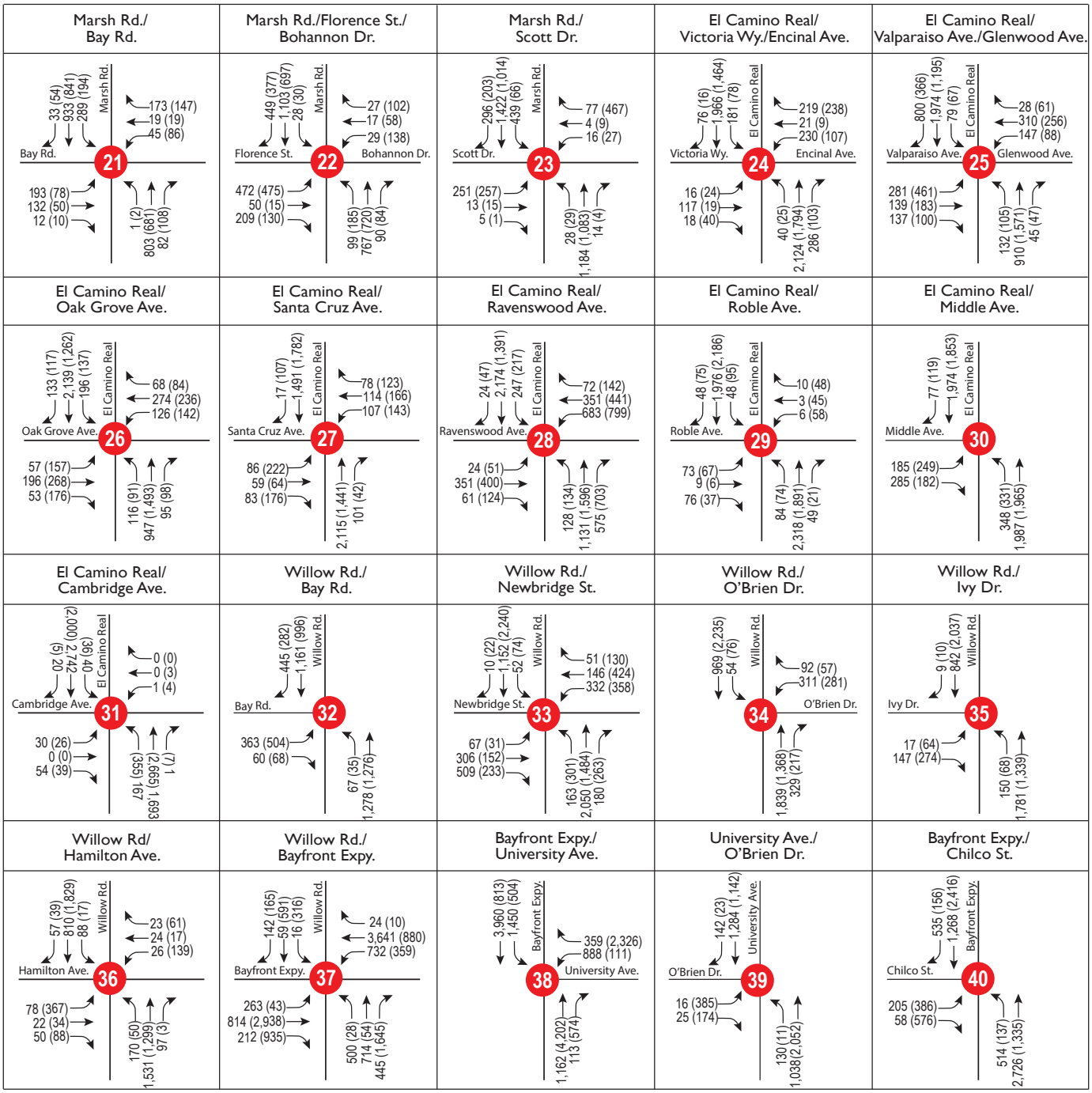
Source: TJKM, 2016.

Graphics ... 00296.15 (5-18-2016)

Figure 3.3-26

Cumulative 2040 Proposed General Plan Conditions Traffic Volumes

Facebook Campus Expansion Project Draft EIR



LEGEND

Study Intersection

AM (PM) Peak Hour Traffic Volumes

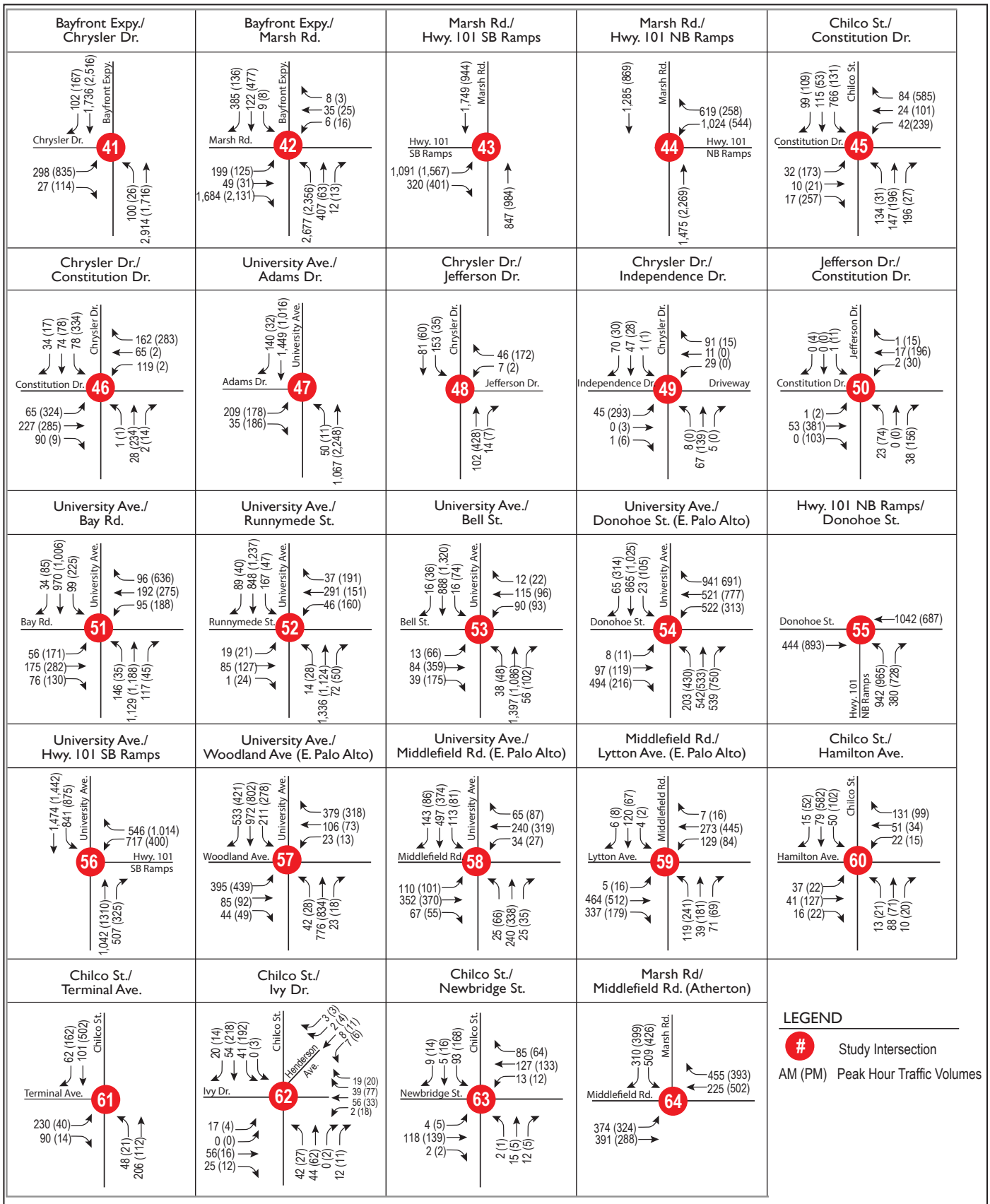
Source: TJKM, 2016.

Graphics ... 00296.15 (5-18-2016)

Figure 3.3-27

Cumulative 2040 Proposed General Plan Conditions Traffic Volumes

Facebook Campus Expansion Project Draft EIR



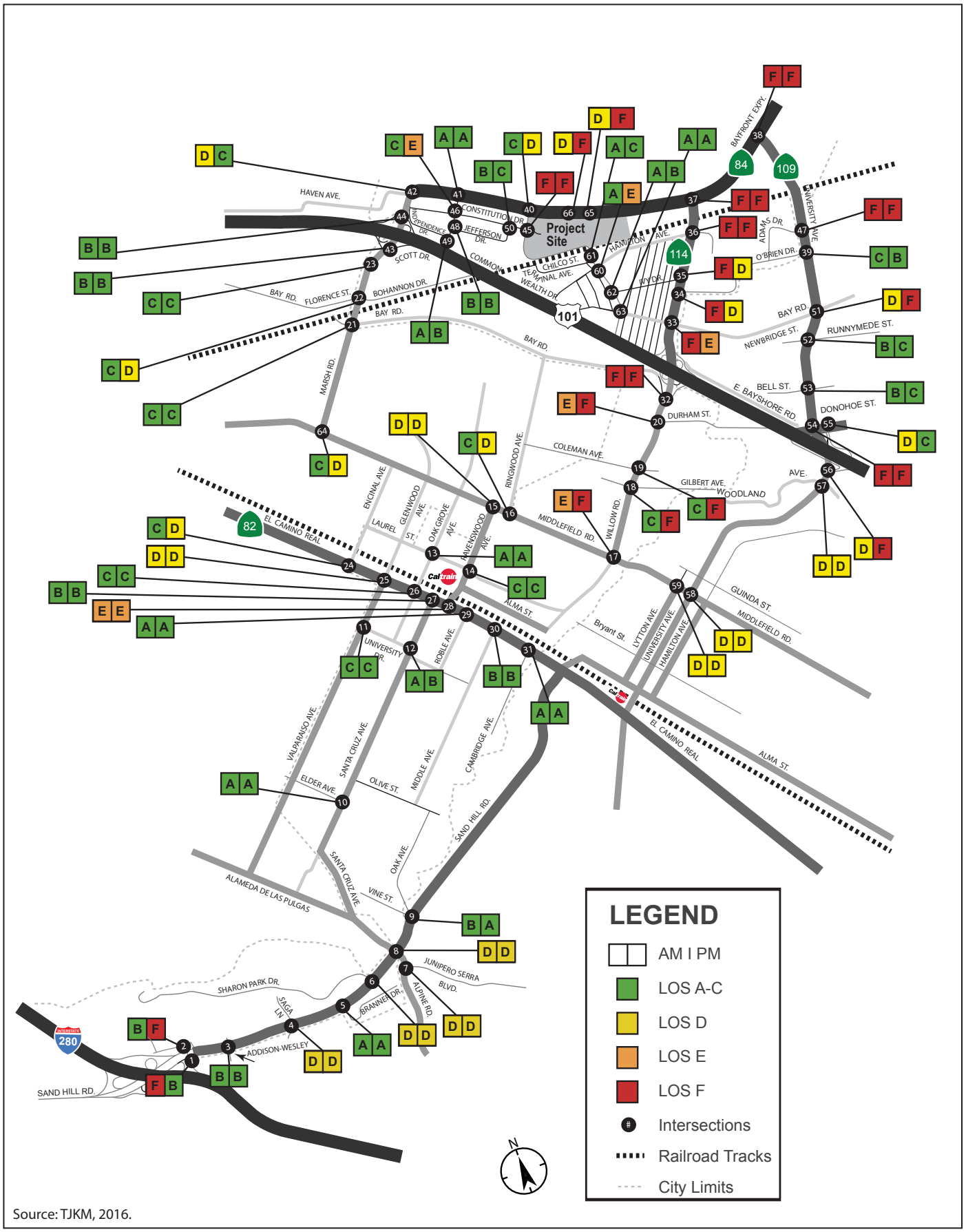
Source: TJKM, 2016.

Graphics ... 00296.15 (5-18-2016)

Figure 3.3-28

Cumulative 2040 Proposed General Plan Conditions Traffic Volumes

Facebook Campus Expansion Project Draft EIR



Source: TJKM, 2016.

Graphics ... 00296.15 (5-18-2016)

Figure 3.3-29
Intersection LOS – Cumulative 2040 Proposed General Plan Conditions
Facebook Campus Expansion Project Draft EIR

- Willow Road and Durham Street (#20) – a.m. and p.m.
  - During both the a.m. and p.m. peak hours, this finding reflects unserved demand.
- El Camino Real and Ravenswood Avenue (#28) – a.m. and p.m.
- Willow Road and Bay Road (#32) – a.m. and p.m.
  - During both peak hours, this finding reflects delay due to unserved demand and downstream queues (southbound approaching the US 101 ramps during the a.m. peak hour and northbound approaching the Willow/Bayfront intersection during the p.m. peak hour).
- Willow Road and Newbridge Street (#33) – a.m. and p.m.
- Willow Road and O'Brien Drive (#34) – a.m.
  - The LOS finding reflects unserved demand due to upstream and downstream congestion during the a.m. peak hour.
- Willow Road and Ivy Drive (#35) – a.m.
  - The LOS finding reflects unserved demand due to upstream and downstream congestion during the a.m. peak hour.
- Willow Road and Hamilton Avenue (#36) – a.m. and p.m.
  - The LOS finding reflects unserved demand due to upstream and downstream congestion during the a.m. peak hour.
- Willow Road and Bayfront Expressway (#37) – a.m. and p.m.
- University Avenue and Bayfront Expressway (#38) – a.m. and p.m.
  - During the a.m. peak hour, this finding reflects unserved demand that affects the westbound left-turn movement.
- Chilco Street and Constitution Drive (#45) – a.m. and p.m.
- Chrysler Drive and Constitution Drive (#46) – p.m.
- University Avenue and Adams Drive (#47) – a.m. and p.m.
- University Avenue and Bay Road (#51) – p.m.
- University Avenue and Donohoe Street (#54) – a.m. and p.m.
- University Avenue and US 101 Southbound Ramps (#56) – a.m. and p.m.
- Chilco Street and Hamilton Avenue (#60) – p.m.
- Bayfront Expressway and Building 20 Entrance (#65) – p.m.
- Bayfront Expressway and Proposed Building 21 Entrance (#66) – p.m.

Each of these 23 locations was also identified as operating unacceptably under cumulative 2040 existing General Plan plus-Project conditions.

Under cumulative 2040 existing General Plan plus-Project conditions, a significant and unavoidable impact was identified at the El Camino Real and Glenwood Avenue intersection (#25), but intersection LOS would improve to acceptable under cumulative 2040 conditions with the proposed General Plan.

Cumulative Impacts and Mitigation Measures (with Proposed General Plan)

Impact TRA-13: Peak-Hour Traffic Impacts at Intersections under Cumulative 2040 Proposed General Plan Conditions. Increases in peak-hour vehicle traffic associated with the Project would contribute to increased delays during the a.m. and p.m. peak hours in 2040 under the proposed General Plan (ConnectMenlo), causing a significant and unavoidable impact on the operation of study intersections. (SU)

Given the net change in average delay resulting from the Project under both background plus-Project and 2040 existing General Plan plus-Project conditions, the addition of Project traffic would have very little effect on average delay at the locations listed below. Project traffic would not be anticipated to result in increased vehicle delay that would exceed significance thresholds under cumulative 2040 proposed General Plan conditions:

- Sand Hill Road and the I-280 northbound on-ramp (#2)
- Willow Road and Middlefield Road (#17)
- Willow Road and Gilbert Avenue (#18)
- Willow Road and Coleman Avenue (#19)
- Willow Road and Durham Street (#20)
- Willow Road and Bay Road (#32)
- Willow Road and Newbridge Street (#33)
- Willow Road and O'Brien Drive (#34)
- Willow Road and Ivy Drive (#35)

AM Peak Hour

The following intersections would experience increased delay during the a.m. peak hour under cumulative 2040 proposed General Plan conditions. The Project's contribution to impacts related to increased delay, compared with cumulative 2040 existing General Plan plus-Project conditions, would be ***potentially significant***.

- Sand Hill Road and the I-280 northbound off-ramp (#1)
- El Camino Real and Ravenswood Avenue (#28)
- Willow Road and Hamilton Avenue (#36)
- Willow Road and Bayfront Expressway (#37)
- University Avenue and Bayfront Expressway (#38)
- Chilco Street and Constitution Drive (#45)
- University Avenue and Adams Drive (#47)
- University Avenue and Donohoe Street (#54)

PM Peak Hour

The following intersections would experience increased delay during the p.m. peak hour under cumulative 2040 proposed General Plan conditions. The Project's contribution to impacts related to increased delay, compared with cumulative 2040 existing General Plan plus-Project conditions, would be ***potentially significant***.

- El Camino Real and Ravenswood Avenue (#28)
- Willow Road and Hamilton Avenue (#36)
- University Avenue and Bayfront Expressway (#38)
- Chilco Street and Constitution Drive (#45)
- Chrysler Drive and Constitution Drive (#46)
- University Avenue and Adams Drive (#47)
- University Avenue and Bay Road (#51)
- University Avenue and the US 101 southbound ramps (#56)
- Chilco Street and Hamilton Avenue (#60)
- Bayfront Expressway and Facebook Building 20 entrance (#65)
- Bayfront Expressway and Proposed Building 21 entrance (#66)

MITIGATION MEASURES. As described in Impact TRA-1, two types of mitigation are described to address potentially significant impacts on study intersections, increasing capacity and reducing travel demand, as summarized below. Additional details on each measure follow later in this section. Where measures are consistent with those identified under background plus-Project conditions, the prior measure number is referenced. Mitigation Measure TRA-13.1 below identifies potential measures to mitigate or reduce Project impacts. In addition, Mitigation Measure TRA-1.2 would reduce the peak-hour share of allowable vehicle trips. Regardless, impacts would be ***significant and unavoidable*** at certain study intersections.

TRA-13.1: Increase Traffic Capacity to Address Impacts on Peak-Hour LOS under Cumulative 2040 Proposed General Plan Conditions. This measure describes the types of mitigation measures that would be necessary to mitigate impacts at each affected location to less than significant.

a. Sand Hill Road and I-280 Northbound Off-Ramp (#1)

   This a.m. peak-hour impact was identified under cumulative 2040 existing General Plan plus-Project conditions (see Impact TRA-10.1a) and mitigated to less-than-significant levels with the peak-hour trip reduction described under Mitigation Measure TRA-1.2. Average delay would change by less than 1 second under the proposed General Plan, and impact findings would remain consistent with cumulative 2040 General Plan plus-Project conditions. The Project impact would, therefore, remain ***less than significant*** with Mitigation Measure TRA-1.2 under cumulative 2040 proposed General Plan conditions. (LTS/M)

b. El Camino Real and Ravenswood Avenue-Menlo Avenue (#28)

   The intersection would operate unacceptably during both the a.m. and p.m. peak hours under cumulative 2040 proposed General Plan conditions. As described above under Mitigation Measure TRA-10.1c, the provision of a right-turn pocket on Menlo Avenue,

where it approaches El Camino Real, and a third through lane on El Camino Real is identified in the City's TIF program. The Project Sponsor's payment of the TIF shall mitigate this impact to a ***less-than-significant*** level. (LTS/M)

c. Willow Road and Hamilton Avenue (#36)

This potential impact on p.m. peak-hour traffic operations was identified as significant and unavoidable under background plus-Project conditions (see Mitigation Measure TRA-1.1b) and would remain significant and unavoidable under cumulative 2040 existing General Plan plus-Project conditions.

Under cumulative 2040 proposed General Plan conditions, delay would further increase during the p.m. peak hour, thereby exceeding the significance threshold. Project impacts would remain ***significant and unavoidable***, as described under Mitigation Measure TRA-1.1b. (SU)

d. Bayfront Expressway and Willow Road (#37)

This potential impact on p.m. peak-hour traffic operations was identified as significant and unavoidable under background plus-Project conditions (see Mitigation Measure TRA-1.1c) and would remain significant and unavoidable under cumulative 2040 existing General Plan plus-Project conditions.

Under cumulative 2040 proposed General Plan conditions, additional delay would exceed the significance threshold (see Mitigation Measure TRA-1.1c for a discussion of potential mitigation and constraints to mitigation). Mitigation Measure TRA-1.2 would partially reduce the impact, but it would remain significant. This impact would remain ***significant and unavoidable,*** as described under Mitigation Measure 1.1c. (SU)

e. Bayfront Expressway and University Avenue (#38)

This potential impact on peak-hour traffic operations was identified as significant and unavoidable under background plus-Project conditions (see Mitigation Measure TRA-1.1d) and would remain significant and unavoidable under cumulative 2040 existing General Plan plus-Project conditions. Increased delay is anticipated during the p.m. peak hour under the proposed General Plan. This impact would remain ***significant and unavoidable,*** as described under Mitigation Measure TRA-1.1d. (SU)

f. Chilco Street and Constitution Drive (#45)

This impact, also identified under background plus-Project conditions, pertains to the design of the Project entrance (see Mitigation Measure TRA-1.1). With implementation of this Project mitigation measure, the intersection would operate acceptably and this impact would be reduced to a ***less-than-significant*** level. (LTS/M)

g. Chilco Street and Constitution Drive (#46)

This impact was also identified under cumulative 2040 existing General Plan plus-Project conditions. With implementation of Mitigation Measure TRA-1.2, the net increase in peak-hour vehicle trips resulting from the Project during the p.m. peak hour would be reduced by more than 90 percent and the Project contribution to increased delay would be less than 4 seconds. Therefore, with Mitigation Measure TRA-1.2, the Project impact at this location under 2040 proposed General Plan conditions would be reduced to a less-than-significant level. (LTS/M)

h. University Avenue and Adams Drive (#47)

LOS at this intersection reflects delay on the side-street stop-controlled approach from Adams Drive. Signalization of this intersection would be warranted under cumulative 2040 proposed General Plan conditions with buildout of ConnectMenlo, including the Project. Therefore, signalization of this intersection should be included in the City's TIF program. The Project Sponsor's payment of the TIF shall mitigate this impact, and the impact would be ***less than significant.*** (LTS/M)

i. University Avenue and Bay Road (#51)

The intersection operates at LOS F during the p.m. peak hour under existing conditions, reflecting primarily northbound traffic as it approaches the Dumbarton Bridge.

Increased delay would exceed the significance threshold under cumulative 2040 proposed General Plan conditions, reflecting added traffic to/from the other development sites (west of University Avenue and east of Willow Road) identified under the proposed General Plan. Replacement of the east/west "split-phase" signal on Bay Street with standard protected signal phases would allow eastbound and westbound pedestrian crossings to occur simultaneously and reduce p.m. peak-hour delay at this intersection. Because the intersection is not under the control of the City of Menlo Park, implementation of potential mitigation to reduce peak-hour delay at this location cannot be guaranteed.

Project traffic would occur primarily in the reverse-peak direction (southbound) during the p.m. peak hour. In addition, Mitigation Measure TRA-1.2 would reduce the net increase in the number of p.m. peak-hour vehicle trips generated by the Project by approximately 90 percent. Therefore, the Project would not result in increased p.m. peak-hour delay that would exceed the impact threshold under background plus-Project or cumulative 2040 existing General Plan plus-Project conditions.

Under cumulative 2040 proposed General Plan conditions with Mitigation Measure TRA-1.2, the Project would not be anticipated to result in additional delay to critical movements that would exceed 4 seconds, and Project trips would not result in the critical v/c ratio exceeding the impact threshold. The Project contribution to this cumulative impact would be ***less than significant*** with Mitigation Measure TRA-1.2. (LTS/M)

j. University Avenue and Donohoe Street (#54)

This state-controlled intersection located adjacent to the US 101 northbound ramps in East Palo Alto operates at LOS F under existing conditions during both the a.m. and p.m. peak hours. The addition of Project traffic under cumulate 2040 existing General Plan plus-Project conditions would result in additional delay that would exceed the 4-second significance threshold during both peak hours. Additional delay would occur under cumulative 2040 proposed General Plan conditions during the a.m. peak hour.

This impact was identified under cumulative 2040 existing General Plan plus-Project conditions (see Mitigation Measure TRA-10.1j) and would remain ***significant and unavoidable*** under cumulative 2040 proposed General Plan conditions. (SU)

k. University Avenue and the US 101 Southbound Ramps (#56)

During the p.m. peak hour, this intersection operates unacceptably at LOS E under existing conditions; it would remain at LOS E under background plus-Project and cumulative 2040 existing General Plan plus-Project conditions. With implementation of Mitigation Measure TRA-1.2, the net increase in the number of peak-hour vehicle trips resulting from the Project during the p.m. peak hour would be reduced by more than 90 percent. Therefore, with Mitigation Measure TRA-1.2, the intersection would be anticipated to operate at LOS E, consistent with existing conditions. The Project contribution to this cumulative impact would be ***less than significant*** with Mitigation Measure TRA-1.2. (LTS/M)

l. Chilco Street and Hamilton Avenue (#60)

The Project impact was identified under background plus-Project conditions and cumulative 2040 existing General Plan plus-Project conditions (see Mitigation Measure TRA-1.1k). This impact would remain ***significant and unavoidable***. (SU)

m. Bayfront Expressway and Facebook Building 20 Entrance (#65)

The Project impact was identified under background plus-Project conditions and cumulative 2040 existing General Plan plus-Project conditions (see Mitigation Measure TRA-1.1l). This impact would remain ***significant and unavoidable*** during the p.m. peak hour. (SU)

n. Bayfront Expressway and Proposed Building 21 Entrance (#66)

The Project impact was identified under background plus-Project conditions and cumulative 2040 existing General Plan plus-Project conditions (see Mitigation Measure TRA-1.1m). With the proposed mitigation, the impact would remain ***significant and unavoidable*** during the a.m. peak hour. (SU)

Impact TRA-14: Impacts on Routes of Regional Significance under Cumulative 2040 Proposed General Plan Conditions. Some Routes of Regional Significance would operate at or below their LOS threshold with the addition of Project trips. However, Project traffic would exceed the allowable 1 percent threshold, resulting in significant and unavoidable impacts. (SU)

Under cumulative 2040 proposed General Plan conditions, the Project's share of traffic volumes on regional facilities would be partially reduced compared with cumulative 2040 existing General Plan plus-Project conditions. Some regional Project trips would be diverted to other locations because of the allowances for additional housing within Menlo Park under the proposed General Plan. The provision of such housing could allow a greater share of Project employees to live close to the Project site, resulting in fewer and shorter vehicle trips. Nonetheless, the following Routes of Regional Significance would continue to operate at or below their LOS threshold under cumulative 2040 proposed General Plan conditions, and Project traffic would still be anticipated to exceed the allowable 1 percent threshold, resulting in ***significant*** impacts:

- Bayfront Expressway between US 101 and Marsh Road
- Bayfront Expressway between Willow Road and University Avenue
- Bayfront Expressway between University Avenue and the county line
- US 101 north of Marsh Road
- US 101 south of Willow Road

MITIGATION MEASURE. See Mitigation Measure TRA-2.1. Providing additional travel lanes, if feasible, would increase segment capacity but would not be feasible on all segments given the available right-of-way widths and both downstream and downstream capacity limitations on facilities such as US 101 and the Dumbarton Bridge. In addition, the routes are under the control of Caltrans; the City cannot guarantee mitigation. Therefore, the Project impact on regional Routes of Regional Significance would remain ***significant and unavoidable***.

Impact TRA-15: Increase in Daily Traffic Volumes on Roadway Segments under Cumulative 2040 Proposed General Plan Conditions. Increases in daily traffic associated with the Project under cumulative 2040 proposed General Plan conditions would result in increased ADT volumes on Project area roadway segments, resulting in significant and unavoidable impacts. (SU)

The Project would generate up to 16,329 net daily vehicle trips during a typical weekday under the proposed trip cap. Under both background plus-Project and cumulative 2040 existing General Plan plus-Project conditions, based on the criteria for significance, 21 of the 87 roadway segments would experience significant impacts, which would result from Project traffic. Under cumulative 2040 proposed General Plan conditions, which include both the Project and citywide growth under ConnectMenlo, 23 of the 87 roadway segments would have significant impacts.

A typical mitigation measure would be to widen the road in order to add travel lanes and the capacity needed to accommodate the increase in the number of net daily trips. However, increasing the capacity of the roadway would require additional rights-of-way, which would affect local property owners. It is also considered infeasible. Furthermore, the widening of roadways can lead to other effects, such as induced travel demand (e.g., more vehicles on the roadway because of increased capacity on a particular route), air quality degradation, increases in noise associated with motor vehicles, and reductions in transit use (less congestion or reduced driving time may make driving more attractive than transit travel). Wider roadways also result in the degradation of bicycle and pedestrian facilities, including increased intersection crossing times. There is also a quality-of-life aspect to roadway planning because congestion, mobility, air quality, and noise impacts affect the quality of life for local residents, commuters, employees, and businesses in the area. Neighborhoods as well as commercial business centers are affected by roadway projects. Thus, although traffic may increase on certain roadways by varying percentages, it should be viewed as more than an LOS or traffic operation issue. Impacts would be ***significant***.

MITIGATION MEASURES. See Mitigation Measures TRA-3.1 and TRA-3.2 for partial mitigation measures to offset segment impacts. Because it would not be feasible to fully mitigate impacts on study segments, this cumulative impact would remain ***significant and unavoidable*.**

3.4 Air Quality

Introduction

This section describes the environmental and regulatory setting for air quality. It also describes impacts on air quality that would result from implementation of the Project and mitigation for significant impacts where feasible and appropriate. Cumulative impacts are discussed at the end of this section. Issues identified in response to the Notice of Preparation (NOP) (Appendix 1) were considered in preparing this analysis. Applicable issues that were raised pertain to worsened traffic congestion as a result of the Project and the corresponding air pollution impacts.

Existing Conditions

Regulatory Setting

Federal

Clean Air Act and National Ambient Air Quality Standards

The Clean Air Act (CAA) was first enacted in 1963 and has been amended numerous times in subsequent years (1965, 1967, 1970, 1977, and 1990). The CAA establishes federal air quality standards, known as National Ambient Air Quality Standards (NAAQS), and specifies future dates for achieving compliance. The CAA also mandates that the state submit and implement a State Implementation Plan (SIP) for local areas not meeting those standards. The plans must include pollution control measures that demonstrate how the standards will be met.

The 1990 amendments to the CAA identify specific emission-reduction goals for areas not meeting the NAAQS. These amendments require both a demonstration of reasonable further progress toward attainment and incorporation of additional sanctions for failure to attain or meet interim milestones. The sections of the CAA that would most substantially affect the development of the Project include Title I (Nonattainment Provisions) and Title II (Mobile-Source Provisions).

Table 3.4-1 shows the NAAQS currently in effect for each criteria pollutant. The California Ambient Air Quality Standards (CAAQS) (discussed below) are also provided for reference.

Table 3.4-1. National and State Ambient Air Quality Standards[1]

Criteria Pollutant	Average Time	California Standards	National Standards[a]	
			Primary	Secondary
Ozone	1-hour	0.09 ppm	None[b]	None[b]
	8–hour	0.070 ppm	0.070 ppm	0.070 ppm
Particulate Matter (PM10)	24-hour	50 μg/m^3	150 μg/m^3	150 μg/m^3
	Annual mean	20 μg/m^3	None	None
Fine Particulate Matter (PM2.5)	24-hour	None	35 μg/m^3	35 μg/m^3
	Annual mean	12 μg/m^3	12.0 μg/m^3	15.0 μg/m^3
Carbon Monoxide	8-hour	9.0 ppm	9 ppm	None
	1-hour	20 ppm	35 ppm	None
	8-hour (Lake Tahoe)	6 ppm	None	None
Nitrogen Dioxide	Annual mean	0.030 ppm	0.053 ppm	0.053 ppm
	1-hour	0.18 ppm	0.100 ppm	None
Sulfur Dioxide[c]	Annual mean	None	0.030 ppm	None
	24-hour	0.04 ppm	0.14 ppm	None
	3-hour	None	None	0.5 ppm
	1-hour	0.25 ppm	0.075 ppm	None
Lead	30-day Average	1.5 μg/m^3	None	None
	Calendar quarter	None	1.5 μg/m^3	1.5 μg/m^3
	3-month average	None	0.15 μg/m^3	0.15 μg/m^3
Sulfates	24-hour	25 μg/m^3	None	None
Visibility Reducing Particles	8-hour	--[d]	None	None
Hydrogen Sulfide	1-hour	0.03 ppm	None	None
Vinyl Chloride	24-hour	0.01 ppm	None	None

Notes:
PM10 = particulate matter less than or equal to 10 microns in diameter.
PM2.5 = particulate matter less than or equal to 2.5 microns in diameter.
μg/m^3 = micrograms per cubic meter.
ppm = parts per million.
a. National standards are divided into primary and secondary standards. Primary standards are intended to protect public health, whereas secondary standards are intended to protect public welfare and the environment.
b. The federal 1-hour standard of 12 parts per hundred million was in effect from 1979 through June 15, 2005. The revoked standard is referenced because it was employed for such a long period and is a benchmark for State Implementation Plans.
c. The annual and 24-hour NAAQS for sulfur dioxide only apply for 1 year after designation of the new 1-hour standard to those areas that were previously nonattainment for 24-hour and annual NAAQS.
d. CAAQS for visibility reducing particles is defined by an extinction coefficient of 0.23 per kilometer – visibility of 10 miles or more due to particles when relative humidity is less than 70 percent.

[1] California Air Resources Board. 2015b. *Ambient Air Quality Standards*. Last revised: October 1, 2015. Available: <http://www.arb.ca.gov/research/aaqs/aaqs2.pdf>. Accessed: October 14, 2015.

State

California Clean Air Act and California Ambient Air Quality Standards

In 1988, the state legislature adopted the California CAA, which established a statewide air pollution control program. The California CAA requires all air districts in the state to endeavor to meet the CAAQS by the earliest practical date. Unlike the federal CAA, the California CAA does not set precise attainment deadlines. Instead, the California CAA establishes increasingly stringent requirements for areas that will require more time to achieve the standards. CAAQS are generally more stringent than the NAAQS and incorporate additional standards for sulfates, hydrogen sulfide, visibility reducing particles, and vinyl chloride. The CAAQS and NAAQS are listed together in Table 3.4-1.

The California Air Resources Board (ARB) and local air districts bear responsibility for achieving California's air quality standards, which are to be achieved through district-level air quality management plans that would be incorporated into the SIP. In California, the federal Environmental Protection Agency (EPA) has delegated authority to prepare SIPs to ARB, which, in turn, has delegated that authority to individual air districts. ARB traditionally has established state air quality standards, maintaining oversight authority in air quality planning, developing programs for reducing emissions from motor vehicles, developing air emission inventories, collecting air quality and meteorological data, and approving SIPs.

The California CAA substantially adds to the authority and responsibilities of air districts. The California CAA designates air districts as lead air quality planning agencies, requires air districts to prepare air quality plans, and grants air districts authority to implement transportation control measures. The California CAA also emphasizes the control of "indirect and area-wide sources" of air pollutant emissions. The California CAA gives local air pollution control districts explicit authority to regulate indirect sources of air pollution and to establish traffic control measures (TCMs).

State Tailpipe Emission Standards

ARB established a series of increasingly strict emission standards for new off-road diesel equipment, on-road diesel trucks, and harbor craft. New construction equipment used for the Project, including heavy-duty trucks and off-road construction equipment, would be required to comply with the standards.

Toxic Air Containment Regulation

California regulates toxic air contaminants (TACs) primarily through the Toxic Air Contaminant Identification and Control Act (Tanner Act) and the Air Toxics "Hot Spots" Information and Assessment Act of 1987 ("Hot Spots" Act). In the early 1980s, ARB established a statewide comprehensive air toxics program to reduce exposure to air toxics. The Tanner Act created California's program to reduce exposure to air toxics. The "Hot Spots" Act supplements the Tanner Act by requiring a statewide air toxics inventory, notification of people exposed to a significant health risk, and facility plans to reduce these risks.

In August 1998, ARB identified diesel particulate matter (DPM) from diesel-fueled engines as TACs. In September 2000, ARB approved a comprehensive Diesel Risk Reduction Plan to reduce emissions from both new and existing diesel-fueled engines and vehicles. The goal of the plan is to reduce DPM (respirable particulate matter) emissions and the associated health risk by 75 percent in 2010 and by 85 percent by 2020. The plan identifies 14 measures that ARB will implement over the next several years.

Local

Bay Area Air Quality Management District/2010 Clean Air Plan

The Bay Area Air Quality Management District (BAAQMD) has local air quality jurisdiction over projects in San Mateo County. Responsibilities of BAAQMD include overseeing stationary-source emissions, approving permits, maintaining emissions inventories, maintaining air quality stations, overseeing agricultural burning permits, and reviewing air quality–related sections of environmental documents required by the California Environmental Quality Act (CEQA). The air quality districts are also responsible for establishing and enforcing local air quality rules and regulations that address the requirements of federal and state air quality laws and for ensuring that NAAQS and CAAQS are met.

BAAQMD has adopted advisory emission thresholds to assist CEQA lead agencies in determining the level of significance of a project's emissions, which are outlined in its *California Environmental Quality Act Air Quality Guidelines* (CEQA Guidelines)[2]. BAAQMD has also adopted air quality plans to improve air quality, protect public health, and protect the climate. The Bay Area 2001 Ozone Attainment Plan was adopted to reduce ozone and achieve the NAAQS ozone standard, and the 2010 Clean Air Plan was adopted to provide an integrated control strategy for ozone, particulate matter (PM), TACs, and greenhouse gas (GHG) emissions. BAAQMD also adopted a redesignation plan for carbon monoxide (CO) in 1994. The redesignation plan includes strategies to ensure the continuing attainment of the NAAQS for CO in the San Francisco Bay Area Air Basin (SFBAAB).

The Project may be subject to the following district rules. This list of rules may not be all-encompassing as additional BAAQMD rules may apply to the Project as specific components are identified.

- **Regulation 2, Rule 2 (New Source Review).** This regulation contains requirements for Best Available Control Technology and emission offsets.
- **Regulation 2, Rule 5 (New Source Review of Toxic Air Contaminates).** This regulation outlines guidance for evaluating TAC emissions and their potential health risks.
- **Regulation 6, Rule 1 (Particulate Matter).** This regulation restricts emissions of PM darker than No. 1 on the Ringlemann Chart to less than three minutes in any one hour.
- **Regulation 7 (Odorous Substances).** This regulation establishes general odor limitations on odorous substances and specific emission limitations on certain odorous compounds.
- **Regulation 8, Rule 3 (Architectural Coatings).** This regulation limits the quantity of volatile organic compounds (VOCs) in architectural coatings.
- **Regulation 9, Rule 6 (Nitrogen oxides emission from natural gas-fired boilers and water heaters).** This regulation limits emissions of nitrogen oxides (NO_X) generated by natural gas-fired boilers.

[2] Bay Area Air Quality Management District. 2011. *California Environmental Quality Act Air Quality Guidelines*. May. San Francisco, CA. The BAAQMD CEQA Guidelines were challenged in court by the California Building Industry Association. Although a lower court ruling put the adoption of the guidelines on hold, with a ruling that BAAQMD had to complete a CEQA analysis to adopt the guidelines, the lower court ruling was overturned by the appellate court. The guidelines are currently under consideration by the California Supreme Court. BAAQMD at present has no recommendation to local lead agencies on the use of the 2011 guidelines. However, there is no court order constraining their use, and they are frequently employed by lead agencies when conducting CEQA reviews because the evidence in the BAAQMD 2011 guidelines still provides a substantial evidence-based approach to air quality impact analyses and BAAQMD-recommended significance thresholds.

- **Regulation 9, Rule 8 (Stationary Internal Combustion Engines).** This regulation limits emissions of NO_X and CO from stationary internal combustion engines of more than 50 horsepower.
- **Regulation 11, Rule 2 (Asbestos Demolition, Renovation and Manufacturing).** This regulation controls emissions of asbestos to the atmosphere during demolition and renovation activities.

City of Menlo Park

Local jurisdictions, such as the City of Menlo Park (City), have the authority to address air pollution issues through their land use decision-making processes. Specifically, the City is responsible for assessing the potential for and mitigating air quality problems that result from its land use decisions. The City is also responsible for the implementation of transportation control measures, as outlined in the Clean Air Plan.

In accordance with CEQA requirements and the CEQA review process, the City assesses the air quality impacts of new development projects, requires mitigation of potentially significant air quality impacts by conditioning discretionary permits, and monitors and enforces the implementation of such mitigation measures. The City uses the BAAQMD CEQA Guidelines as its guidance document for the environmental review of plans and development proposals within its jurisdiction.

City of Menlo Park General Plan. The General Plan guides development and use of land within the city. Several goals and policies would be expected to contribute to improving air quality. However, the following goal and policy from the Open Space and Conservation Element are most relevant to the Project.[3]

> **Goal OSC5:** Ensure Healthy Air Quality and Water Quality. Enhance and preserve air quality in accord with state and regional standards, and encourage the coordination of total water quality management including both supply and wastewater treatment.
>
> *Policy OSC5.1*: Air and Water Quality Standards. Continue to apply standards and policies established by the Bay Area Air Quality Management District (BAAQMD), San Mateo Countywide Water Pollution Prevention Program (SMCWPPP), and City of Menlo Park Climate Action Plan through the California Environmental Quality Act (CEQA) process and other means as applicable.

ConnectMenlo General Plan Update. The City General Plan (Land Use and Circulation Elements) and M-2 Area Zoning Update, also known as ConnectMenlo, is under way. Although not yet adopted, the following draft goal and policy in ConnectMenlo pertain to the Project and are identified for informational purposes.

> **Goal CIRC-3 Sustainable Transportation:** Increase mobility options to reduce traffic congestion, greenhouse gas emissions, and commute travel time**.**
>
> *Policy CIRC-4.2:* Local Air Pollution. Promote non-motorized transportation to reduce exposure to local air pollution, thereby reducing risks of respiratory diseases, other chronic illnesses, and premature death.

[3] City of Menlo Park. 2013. *Menlo Park General Plan, Open Space/Conservation, Noise and Safety Elements*. Adopted May 21.

Environmental Setting

Climate and Atmospheric Conditions

While the primary factors that determine air quality are the locations of air pollutant sources and the amount of pollutants emitted from those sources, meteorological conditions and topography are also important factors. Atmospheric conditions, such as wind speed, wind direction, and air temperature gradients interact with the physical features of the landscape to determine the movement and dispersal of air pollutants. Unique geographic features throughout the state define 15 air basins with distinctive regional climates.

The Project is within the SFBAAB, an area surrounded by mountains that confine the movement of air and the pollutants it contains. This area includes all of Alameda, Contra Costa, Marin, Napa, San Francisco, San Mateo, Santa Clara, the western half of Solano, and the southern half of Sonoma Counties. The regional climate within the SFBAAB is considered semi-arid and is characterized by warm summers, mild winters, infrequent seasonal rainfall, moderate daytime onshore breezes, and moderate humidity. A wide range of meteorology and emissions sources—such as dense population centers, heavy vehicular traffic, and industrial activity—primarily influence the air quality within the SFBAAB.

Air pollutant emissions within the SFBAAB are generated from stationary, area-wide, mobile, and natural sources. Stationary sources can be divided into two major subcategories: point and area sources. *Point sources* occur at an identified location and are usually associated with manufacturing and industry. Examples are boilers and combustion equipment that produce electricity or generate heat. *Area sources* consist of many smaller point sources that are widely distributed. Examples of area sources include residential and commercial water heaters, painting operations, portable generators, lawn mowers, agricultural fields, landfills, and consumer products, such as barbeque lighter fluid and hair spray. Construction activities that create fugitive dust, through activities such as excavation and grading, also contribute to area source emissions. Mobile sources refer to emissions from motor vehicles, including tailpipe and evaporative emissions, and are classified as either on-road or off-road. On-road sources may be legally operated on roadways and highways. Off-road sources include aircraft, ships, trains, and self-propelled construction equipment. Air pollutants can also be generated by the natural environment, such as when fine dust particles are pulled off the ground surface and suspended in the air during high winds.

Criteria Air Pollutants of Concern

The federal and state governments have established NAAQS and CAAQS, respectively, for six criteria pollutants: ozone (O_3), CO, lead (Pb), nitrogen dioxide (NO_2), sulfur dioxide (SO_2), and PM, which consists of PM 10 microns in diameter or less (PM10) and PM 2.5 microns in diameter or less (PM2.5).

Ozone and NO_2 are considered regional pollutants because they (or their precursors) affect air quality on a regional scale; NO_2 reacts photochemically with reactive organic gases (ROGs) to form ozone, and this reaction occurs at some distance downwind of the source of pollutants. Pollutants such as CO, SO_2, and Pb are considered to be local pollutants that tend to accumulate in the air locally. Particulate matter is considered to be a local as well as a regional pollutant.

The primary pollutants of concern in the study area are ozone (including NO_X), CO, and PM. Principal characteristics surrounding these pollutants are discussed below. TACs are also discussed, although no air quality standards exist for these pollutants.

Ozone

Ozone is a respiratory irritant that can cause severe ear, nose, and throat irritation and increases susceptibility to respiratory infections. It is also an oxidant that causes extensive damage to plants through leaf discoloration and cell damage. It can cause substantial damage to other materials as well, such as synthetic rubber and textiles.

Ozone is not emitted directly into the air but is formed by a photochemical reaction in the atmosphere. Ozone precursors, ROG and NO_X, react in the atmosphere in the presence of sunlight to form ozone. Because photochemical reaction rates depend on the intensity of ultraviolet light and air temperature, ozone is primarily a summer air pollution problem. The ozone precursors, ROG and NO_X, are mainly emitted by mobile sources and by stationary combustion equipment.

Hydrocarbons are organic gases that are made up of hydrogen and carbon atoms. There are several subsets of organic gases, including ROGs and VOCs. ROGs are defined by state rules and regulations; VOCs are defined by federal rules and regulations. For the purposes of this assessment, hydrocarbons are classified and referred to as ROGs. Both ROGs and VOCs are emitted from the incomplete combustion of hydrocarbons or other carbon-based fuels, or as a product of chemical processes. The major sources of hydrocarbons are combustion engine exhaust, oil refineries, and oil-fueled power plants; other common sources are petroleum fuels, solvents, dry-cleaning solutions, and paint (through evaporation).

The health effects of hydrocarbons result from the formation of ozone. High levels of hydrocarbons in the atmosphere can interfere with oxygen intake by reducing the amount of available oxygen though displacement. Carcinogenic forms of hydrocarbons are considered TACs. There are no separate health standards for ROGs, although some are also toxic; an example is benzene, which is both an ROG and a carcinogen.

Nitrogen Oxides

Nitrogen oxides are a family of highly reactive gases that are a primary precursor to the formation of ground-level ozone, and react in the atmosphere to form acid rain. NO_2, often used interchangeably with NO_X, is a brownish, highly reactive gas that is present in all urban environments. The major human sources of NO_2 are combustion devices, such as boilers, gas turbines, and mobile and stationary reciprocating internal combustion engines.

Combustion devices emit primarily nitric oxide (NO), which reacts through oxidation in the atmosphere to form NO_2.[4] The combined emissions of NO and NO_2 are referred to as NO_X and reported as equivalent NO_2. Because NO_2 is formed and depleted by reactions associated with ozone, the NO_2 concentration in a particular geographical area may not be representative of local NO_X emission sources.

Inhalation is the most common route of exposure to NO_2. Because NO_2 has relatively low solubility in water, the principal site of toxicity is in the lower respiratory tract. The severity of the adverse health effects primarily depends on the concentration inhaled rather than the duration of exposure. An individual may experience a variety of acute symptoms, such as coughing, difficulty breathing, vomiting, headache, and eye irritation during or shortly after exposure. After a period of approximately 4–12 hours, an exposed individual may experience chemical pneumonitis or pulmonary edema with breathing

[4] U.S. Environmental Protection Agency. 2016. *Nitrogen Dioxide (NO_2).* Last Updated: February 22, 2016. Available: <https://www3.epa.gov/airtrends/aqtrnd95/no2.html >. Accessed: March 25, 2016.

abnormalities, cough, cyanosis, chest pain, and rapid heartbeat. Severe symptomatic NO_2 intoxication after acute exposure has been linked to prolonged respiratory impairment, with such symptoms as chronic bronchitis and decreased lung function.[5]

Carbon Monoxide

CO has little effect on plants and materials, but it can have significant effects on human health. CO is a public health concern because it combines readily with hemoglobin and thus reduces the amount of oxygen transported in the bloodstream. Effects range from slight headaches to nausea to death.

Motor vehicles are the primary source of CO emissions in most areas. In the Project area, high CO levels are of greatest concern during the winter, when periods of light winds combine with the formation of ground-level temperature inversions from evening through early morning. These conditions trap pollutants near the ground, reducing the dispersion of vehicle emissions. Moreover, motor vehicles exhibit increased CO emission rates at low air temperatures. Dramatic reductions in CO levels across California, including a 50 percent decrease in statewide peak CO levels between 1980 and 2004, have been witnessed during the past several decades. These reductions are primarily a result of ARB requirements for cleaner vehicles, equipment, and fuels.[6]

Particulate Matter

Particulate matter pollution consists of very small liquid and solid particles floating in the air, which can include smoke, soot, dust, salts, acids, and metals. Particulate matter also forms when gases emitted from industries and motor vehicles undergo chemical reactions in the atmosphere. Particulate matter less than 10 microns in diameter, about $1/7^{th}$ the thickness of a human hair, is referred to as PM10. Particulate matter that is 2.5 microns or less in diameter, roughly $1/28^{th}$ the diameter of a human hair, is referred to as PM2.5. Major sources of PM10 include motor vehicles; wood burning stoves and fireplaces; dust from construction, landfills, and agriculture; wildfires and brush/waste burning; industrial sources; windblown dust from open lands; and atmospheric chemical and photochemical reactions. PM2.5 results from fuel combustion (from motor vehicles, power generation, and industrial facilities), residential fireplaces, and wood stoves. In addition, PM10 and PM2.5 can be formed in the atmosphere from gases such as SO_2, NO_X, and VOCs.

PM10 and PM2.5 pose a greater health risk than larger-size particles. When inhaled, these tiny particles can penetrate the human respiratory system's natural defenses and damage the respiratory tract. PM10 and PM2.5 can increase the number and severity of asthma attacks, cause or aggravate bronchitis and other lung diseases, and reduce the body's ability to fight infections. Very small particles of substances, such as lead, sulfates, and nitrates, can cause lung damage directly. These substances can be absorbed into the blood stream and cause damage elsewhere in the body; they can also transport absorbed gases such as chlorides or ammonium into the lungs and cause injury. Whereas particles 2.5 to 10 microns in diameter tend to collect in the upper portion of the respiratory system, particles 2.5 microns or less are so tiny that they can penetrate deeper into the lungs and damage lung tissues. Suspended particulates also damage and discolor surfaces on which they settle, and contribute to haze and reduce regional visibility.

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[5] U.S. Environmental Protection Agency. 2015a. *Criteria Pollutant Information.* Last Revised: September 10, 2015. Available: <http://www3.epa.gov/airquality/nitrogenoxides/health.html>. Accessed: October 16, 2015.

[6] California Air Resources Board. 2004. *2004 Revision to the California State Implementation Plan for Carbon Monoxide.* July. Available: <http://www.arb.ca.gov/planning/sip/co/final_2004_co_plan_update.pdf>. Accessed: September 18, 2015.

Toxic Air Contaminants

TACs are pollutants that may result in an increase in mortality or serious illness, or that may pose a present or potential hazard to human health. Health effects of TACs include cancer, birth defects, neurological damage, damage to the body's natural defense system, and diseases that lead to death. In 1998, following a 10-year scientific assessment process, the ARB identified PM from diesel-fueled engines (commonly called DPM) as a TAC. Compared to other air toxics ARB has identified, DPM emissions are estimated to be responsible for about 70 percent of the total ambient air toxics risk.[7]

Existing Air Quality Conditions

Existing air quality conditions in the study area can be characterized by monitoring data collected in the region. The air quality monitoring station closest to the Project site is the Redwood City station at 897 Barron Avenue, which is located approximately 2 miles to the west of the Project site. The Redwood City station does not have data available for PM10, however. The nearest station to the Project site with PM10 data available is the Cupertino Voss Avenue Station. Recent air quality monitoring results from the Redwood City and Cupertino Stations (PM10 only) are summarized in Table 3.4-2. The data represent air quality monitoring for the last three years for which a complete dataset is available (2013–2015). As indicated in Table 3.4-2, the Redwood City monitoring station has experienced violations of the state 8-hour ozone and federal NO_2 standards during this time period.

Table 3.4-2. Ambient Criteria Air Pollutant Monitoring Data (2013–2015)[8,9]

Pollutant Standards	2013	2014	2015
Ozone (O_3) (Redwood City Station)			
Maximum 1-hour concentration (ppm)	0.083	0.086	0.086
Maximum 8-hour concentration (ppm)	0.076	0.066	0.071
Number of days standard exceeded[a]			
CAAQS 1-hour (>0.09 ppm)	0	0	0
CAAQS 8-hour (>0.070 ppm)	1	0	1
NAAQS 8-hour (>0.075 ppm)	0	0	0
Carbon Monoxide (CO) (Redwood City Station)			
Maximum 8-hour concentration (ppm)	--	--	--
Maximum 1-hour concentration (ppm)	1.6	1.6	1.6
Number of days standard exceeded[a]			
NAAQS 8-hour (≥9 ppm)	--	--	--
CAAQS 8-hour (≥9.0 ppm)	--	--	--
NAAQS 1-hour (≥35 ppm)	0	0	0
CAAQS 1-hour (≥20 ppm)	0	0	0

7 California Air Resources Board. 2000. *Risk Reduction Plan to Reduce Particulate Matter Emissions from Diesel-Fueled Engines and Vehicles*. Sacramento, CA. Prepared by Stationary Source Division and Mobile Source Control Division. Available: <http://www.arb.ca.gov/diesel/documents/rrpfinal.pdf>. Accessed: September 18, 2015.

8 California Air Resources Board. 2015a. *iADAM: Air Quality Data Statistics: Top 4 Summary*. Available: <http://www.arb.ca.gov/adam/topfour/topfour1.php>. Accessed: October 20, 2015.

9 U.S. Environmental Protection Agency. 2015b. *Monitor Values Report*. Available: <http://www.epa.gov/airdata/ad_rep_mon.html>. Accessed: October 20, 2015.

Pollutant Standards	2013	2014	2015
Nitrogen Dioxide (NO_2) (Redwood City Station)			
State maximum 1-hour concentration (ppm)	53	55	47
State second-highest 1-hour concentration (ppm)	51	54	46
Annual average concentration (ppm)	12	11	10
Number of days standard exceeded			
CAAQS 1-hour (0.18 ppm)	0	0	0
Particulate Matter (PM10) (Cupertino Station)			
National[b] maximum 24-hour concentration (μg/m³)	31.0	--	--
National[b] second-highest 24-hour concentration (μg/m³)	27.8	--	--
State[c] maximum 24-hour concentration (μg/m³)	33.5	--	--
State[c] second-highest 24-hour concentration (μg/m³)	29.5	--	--
National annual average concentration (μg/m³)	14.0	--	--
State annual average concentration (μg/m³)[d]	14.5	--	--
Number of days standard exceeded[e]			
NAAQS 24-hour (>150 μg/m³)	0	0	0
CAAQS 24-hour (>50 μg/m³)	0	0	0
Particulate Matter (PM2.5) (Redwood City Station)			
National[b] maximum 24-hour concentration (μg/m³)	39.0	35.0	34.6
National[b] second-highest 24-hour concentration (μg/m³)	38.5	32.4	26.0
State[c] maximum 24-hour concentration (μg/m³)	39.0	35.0	34.6
State[c] second-highest 24-hour concentration (μg/m³)	38.5	32.4	26.0
National annual average concentration (μg/m³)	10.7	7.2	--
State annual average concentration (μg/m³)[d]	--	7.2	--
Number of days standard exceeded[e]			
NAAQS 24-hour (>35 μg/m³)	3	0	0

Notes:

ppm = parts per million
NAAQS = National Ambient Air Quality Standards
CAAQS = California Ambient Air Quality Standards
μg/m³ = micrograms per cubic meter
-- = data not available

[a.] An exceedance is not necessarily a violation.
[b.] National statistics are based on standard conditions data. In addition, national statistics are based on samplers using federal reference or equivalent methods.
[c.] State statistics are based on local conditions data, except in the South Coast Air Basin, for which statistics are based on standard conditions data. In addition, state statistics are based on California approved samplers.
[d.] State criteria for ensuring that data are sufficiently complete for calculating valid annual averages are more stringent than the national criteria.
[e.] Mathematical estimate of how many days concentrations would have been measured as higher than the level of the standard had each day been monitored. Values have been rounded.

Attainment Status

Local monitoring data (Table 3.4-2) are used to designate areas as nonattainment, maintenance, attainment, or unclassified for the NAAQS and CAAQS. The four designations are defined as follows:

- **Nonattainment**—assigned to areas where monitored pollutant concentrations consistently violate the standard in question.
- **Maintenance**—assigned to areas where monitored pollutant concentrations exceeded the standard in question in the past but are no longer in violation of that standard.
- **Attainmen**t—assigned to areas where pollutant concentrations meet the standard in question over a designated period of time.
- **Unclassified**—assigned to areas were data are insufficient to determine whether a pollutant is violating the standard in question.

Table 3.4-3 summarizes the attainment status of San Mateo County with regard to the NAAQS and CAAQS.

Table 3.4-3. Federal and State Attainment Status for San Mateo County[10,11]

Criteria Pollutant	Federal Designation	State Designation
O_3 (8-hour)	Marginal Nonattainment	Nonattainment
CO	Maintenance	Attainment
PM10	Attainment	Nonattainment
PM2.5	Nonattainment	Nonattainment
NO_2	Attainment	Attainment
SO_2	Attainment	Attainment
Lead	Attainment	Attainment
Sulfates	(No Federal Standard)	Attainment
Hydrogen Sulfide	(No Federal Standard)	Unclassified
Visibility Reducing Particles	(No Federal Standard)	Unclassified

Notes:
CO = carbon monoxide
PM10 = particulate matter less than or equal to 10 microns
PM2.5 = particulate matter less than or equal to 2.5 microns
NO_2 = nitrogen dioxide
SO_2 = sulfur dioxide

[10] California Air Resources Board. 2014. *Area Designations Maps.* Last Reviewed: August 22, 2014. Available: <http://www.arb.ca.gov/desig/adm/adm.htm#state >. Accessed: October 20, 2015.

[11] U.S. Environmental Protection Agency. 2015c. *The Green Book Nonattainment Areas for Criteria Pollutants*. Last Updated: October 14, 2015. Available: <http://www3.epa.gov/airquality/greenbook/>. Accessed: October 20, 2015.

Sensitive Receptors

The NAAQS and CAAQS apply at publicly accessible areas, regardless of whether those areas are populated. BAAQMD generally defines a sensitive receptor as a facility or land use that houses or attracts members of the population who are particularly sensitive to the effects of air pollutants, such as children, the elderly, and people with illnesses. Examples of sensitive receptors include residences, hospitals, schools, daycares, senior facilities, parks, playgrounds, and community centers. Sensitive Receptors located within 1,000 feet of the Project are provided in Table 3.4-4.

Table 3.4-4. Sensitive Receptors within 1,000 Feet of the Project Area

Receptor	Distance of Nearest Receptor to Project (Nearest Project Parcel)
Residences	100 feet[a]
Hamilton Avenue Playground	150 feet south
Beechwood School	200 feet south
Bay Trail	200 feet north
Onetta Harris Community Center, Menlo Park Senior Center and Belle Haven Youth Center	300 feet south
Kelly Park	630 feet southwest
Boys & Girls Club	800 feet south

Note:

[a.] There are many residences within 1,000 feet of the Project site on the south side but none near any other side. The closest residences are south of future Building 21, where the distance between the future green space area and the homes on Sandlewood Street is approximately 100 feet. Residences south of the western half of the Project site (containing future Building 22 and existing Building 23) are approximately 275 feet away.

Environmental Impacts

This section describes the impact analysis relating to air quality for the Project. It describes the methods used to determine the impacts of the Project and lists the thresholds used to conclude whether an impact would be significant. Measures to mitigate (i.e., avoid, minimize, rectify, reduce, eliminate, or compensate for) significant impacts accompany each impact discussion.

Thresholds of Significance

In accordance with Appendix G of the State CEQA Guidelines, the Project would be considered to have a significant effect if it would result in any of the conditions listed below.

- Conflict with or obstruct implementation of the applicable air quality plan. For the purposes of this analysis, “conflict with or obstruct implementation” is defined as circumstances in which the Project would result in:

  - Population and/or employment growth that exceeds estimates used to develop applicable air quality plans, which is evaluated through consistency with the City's General Plan (i.e., projects that propose development that is consistent with the growth anticipated by the relevant land use plans or propose development that is less dense than anticipated within a relevant land use plan would be consistent with the current BAAQMD air quality plans).
  - Growth that exceeds the assumptions utilized by the City of Menlo Park and Association of Bay Area Governments (ABAG).

- Violate any air quality standard or contribute substantially to an existing or projected air quality violation. For the purposes of this analysis, "violate any air quality standard or substantially contribute to an existing or projected air quality violation" is defined as circumstances in which construction or operational emissions exceed the pertinent BAAQMD thresholds, as described below under *Local Air District Thresholds*.
- Result in a cumulatively considerable net increase of any criteria pollutant for which the Project region is a nonattainment area for an applicable federal or state ambient air quality standard. For the purposes of this analysis, a "cumulatively considerable net increase" is defined as circumstances in which total direct emissions exceed BAAQMD thresholds identified in Table 3.4-5. The emissions thresholds presented in Table 3.4-5 represent the average daily emissions that a project may generate before contributing to a cumulative impact on regional air quality. Therefore, exceedances of the project-level thresholds, as identified in Table 3.4-5, would be cumulatively considerable.
- Expose sensitive receptors to substantial pollutant concentrations. For the purpose of this analysis, residences, hospitals, schools, daycares, senior facilities, parks, playgrounds, and community centers are considered sensitive receptor locations. A "substantial pollutant concentration" is defined as levels in excess of applicable BAAQMD thresholds, as described below under *Local Air District Thresholds*.
- Create objectionable odors affecting a substantial number of people. For the purpose of this analysis, an odor-producing facility, as defined by BAAQMD,[12] creates an "objectionable odor" if it receives five complaints per year averaged over 3 years.

According to the State CEQA Guidelines, the significance criteria established by the applicable air quality management or air pollution control district may be relied on to make significance determinations for potential impacts on environmental resources. As discussed above, BAAQMD is responsible for ensuring that state and federal ambient air quality standards are not violated within the SFBAAB. Analysis requirements for construction- and operational-related pollutant emissions are contained in BAAQMD's CEQA Guidelines. These guidelines also contain thresholds of significance for ozone, CO, PM2.5, PM10, TACs, and odors; these thresholds are presented in Table 3.4-5.

[12] Bay Area Air Quality Management District. 2011. *California Environmental Quality Act Air Quality Guidelines*. May. San Francisco, CA.

Table 3.4-5. BAAQMD Project-Level Criteria Pollutant Emissions Thresholds[13]

Analysis	Threshold	
Regional Criteria Pollutants (Construction)	ROG:	54 pounds/day
	NO_X:	54 pounds/day
	PM10:	82 pounds/day (exhaust only)
	PM2.5:	54 pounds/day (exhaust only)
Regional Criteria Pollutants (Operations)	ROG:	Same as construction
	NO_X:	Same as construction
	PM10:	82 pounds/day (total)
	PM2.5:	54 pounds/day (total)
Localized Carbon Monoxide	Violation of CAAQS (per screening criteria)	
Localized Particulate Matter	Failure to implement emissions control practices PM2.5 increase of greater than 0.3 $\mu g/m^3$ (Project) PM2.5 increase of greater than 0.8 $\mu g/m^3$ (cumulative)	
Localized Diesel Particulate Matter	Increased cancer risk of 10 in 1 million (Project) Increased HI greater than 1.0 (Project) Increased cancer risk of 100 in 1 million (cumulative) Increased HI greater than 10.0 (cumulative)	
Asbestos	Failure to comply with Regulation 11, Rule 2	
Odors	Five complaints per year averaged over three years during Project operation	

Notes:
ROG = reactive organic gas
NO_X = nitrogen oxides
PM10 = particulate matter less than or equal to 10 microns in diameter
PM2.5 = particulate matter less than or equal to 2.5 microns in diameter
CAAQS = California ambient air quality standards
$\mu g/m^3$ = micrograms per cubic meter
HI = hazard index

[13] Bay Area Air Quality Management District. 2011. *California Environmental Quality Act Air Quality Guidelines*. May. San Francisco, CA.

In March 2012, the Alameda County Superior Court ruled that BAAQMD needed to comply with CEQA prior to adopting their 2010 CEQA Guidelines, which included significance thresholds for criteria air pollutants and GHGs. The Superior Court did not determine whether the thresholds were valid on the merits, but found that the adoption of the thresholds was a project under CEQA. The court ordered a writ of mandate ordering BAAQMD to set aside the thresholds and cease dissemination of them until BAAQMD complied with CEQA. In May 2012, BAAQMD filed an appeal with the Court of Appeal, First Appellate District; and the plaintiff filed a cross-appeal shortly thereafter. In August 2013, the Court of Appeal reversed the trial court's decision and ruled that adoption of guidelines and thresholds is not considered a project subject to CEQA review, and adoption of the significance thresholds was not arbitrary and capricious. The Court of Appeal's decision was subsequently appealed to the California Supreme Court, which granted limited review to the issue of whether CEQA requires "an analysis of how existing environmental conditions will impact future residents or users (receptors) of a proposed project." In December 2015, the Supreme Court ruled in favor of the plaintiff, finding that "CEQA generally does not require an analysis of how existing environmental conditions will impact a project's future users or residents." The Supreme Court identified several exceptions in which CEQA could apply to impacts of the environment on the project, all of which are statutory provisions in CEQA that specifically require consideration of impacts of the environment, such as consideration of projects near airports, school construction projects, and statutory exemptions for housing and transit priority projects, or if a project would generate emissions that exacerbates an existing environmental hazard.

Although BAAQMD does not recommend its significance thresholds for use by local agencies, BAAQMD's proposed thresholds are supported by substantial evidence and are well grounded in air quality regulations, scientific evidence, and scientific reasoning concerning air quality and GHG emissions. Use of these thresholds is appropriate to determine significance in the environmental review of this Project and allows a rigorous standardized approach of determining whether the Project would cause a significant air quality impact. BAAQMD's Justification Report, found in Appendix D of BAAQMD's May 2011 CEQA Guidelines, explains the agency's reasoning and provides substantial evidence for developing and adopting their thresholds.[14] Below is a summary of the basis upon which BAAQMD's thresholds were developed.

Local Air District Thresholds

The following section summarizes BAAQMD's thresholds and presents substantial evidence[15] regarding the basis upon which they were developed. It also describes how the thresholds are used to determine whether Project construction and operational emissions would result in either of the following.

- Interfere or impede with attainment of state or federal ambient air quality standards (CAAQS and NAAQS, respectively).
- Cause increased risk to human health.

[14] Bay Area Air Quality Management District. 2011. *California Environmental Quality Act Air Quality Guidelines*. May. San Francisco, CA.

[15] As noted above, BAAQMD has temporarily withdrawn its recommended guidelines published in 2011 due to a pending lawsuit that is on appeal at the California Supreme Court, but the BAAQMD 2011 CEQA Guidelines still provide a substantial evidence-based approach to air quality impact analysis and the BAAQMD-recommended significant thresholds that are appropriate for use in this EIR.

Regional Thresholds for Air Basin Attainment of State and Federal Ambient Air Quality Standards

BAAQMD adopted thresholds for regional air pollutants (see Table 3.4-5) (as discussed above, ROG and NO_X are regional pollutants, whereas PM is both a regional and local pollutant) to assist lead agencies in determining the significance of environmental effects with regards to local attainment of state and federal ambient air quality standards. The thresholds are based on emissions levels identified under the "New Source Review" (NSR) program, which is a permitting program established by Congress as part of the CAA Amendments of 1990 to ensure that air quality is not significantly degraded by new sources of emissions. The NSR program requires that stationary sources receive permits before construction begins and/or the use of equipment. By permitting large stationary sources, the NSR program assures that new emissions would not slow regional progress toward attaining the NAAQS. BAAQMD has concluded that the stationary pollutants described under the NSR program are equally significant to those pollutants generated with land use projects. BAAQMD's regional thresholds identified in Table 3.4-5 were set as the total emission thresholds associated within the NSR program to help attain the NAAQS.[16]

Health-Based Thresholds for Project-Generated Pollutants of Human Health Concern

As discussed above, all criteria pollutants are associated with some form of health risk (e.g., asthma, asphyxiation). Adverse health effects associated with criteria pollutant emissions are highly dependent on a multitude of interconnected variables (e.g., cumulative concentrations, local meteorology and atmospheric conditions, as well as the number and character of exposed individuals [e.g., age, gender]). Moreover, ozone precursors (ROG and NO_X) affect air quality on a regional scale. Health effects related to ozone are therefore the product of emissions generated by numerous sources throughout a region. Existing models have limited sensitivity to small changes in criteria pollutant concentrations, and, as such, translating project-generated criteria pollutants to specific health effects would not produce meaningful results. In other words, minor increases in regional air pollution from project-generated ROG and NO_X would have nominal or negligible impacts on human health.[17] As such, an analysis of impacts on human health associated with project-generated regional emissions is not included in the project-level analysis.[18]

Increased emissions of ozone precursors (ROG and NO_X) generated by the Project could increase photochemical reactions and the formation of tropospheric ozone, which at certain concentrations, could lead to respiratory symptoms (e.g., coughing), decreased lung function, and inflammation of airways. Although these health effects are associated with ozone, the impacts are a result of cumulative and regional ROG and NO_X emissions, and the incremental contribution of the Project to specific health outcomes from criteria pollutant emissions would be limited and cannot be solely traced to the Project (see *Cumulative Impacts* below for a discussion of regional cumulative impacts).

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[16] Bay Area Air Quality Management District. 2011. *California Environmental Quality Act Air Quality Guidelines.* May. San Francisco, CA. Available: <http://www.baaqmd.gov/~/media/Files/Planning%20and%20Research/CEQA/BAAQMD%20CEQA%20Guidelines_May%202011_5_3_11.ashx>. Accessed: September 18, 2015.

[17] As an example, BAAQMD's Multi-Pollutant Evaluation Method (MPEM) requires a 3 to 5 percent increase in regional ozone precursors to produce a material change in modeled human health impacts. Based on 2008 ROG and NO_X emissions in the Bay Area, a 3 to 5 percent increases equates to over 20,000 pounds per day of ROG and NO_X.

[18] Human health impacts due to project-related localized toxic air contaminants (TACS) are analyzed through health risk assessments (HRAs) discussed later in this section.

Because localized pollutants generated by a project can directly affect adjacent sensitive receptors, the analysis of project-related impacts on human health focuses only on those localized pollutants with the greatest potential to result in a significant, material impact on human health. This is consistent with the current state-of-practice and published guidance by BAAQMD,[19] the California Air Pollution Control Officers Association,[20] Office of Environmental Health Hazard Assessment,[21] and ARB.[22] [7] These pollutants are (1) locally concentrated CO and PM2.5, (2) DPM,[23] and (3) asbestos.

Localized Carbon Monoxide Concentrations

Heavy traffic congestion can contribute to high levels of CO, and individuals exposed to such hot spots may have a greater likelihood of developing adverse health effects. BAAQMD has adopted screening criteria that provide a conservative indication of whether project-generated traffic would cause a potential CO hot spot. If the screening criteria are not met, a quantitative analysis through site-specific dispersion modeling of project-related CO concentrations would not be necessary, and the project would not cause localized violations of CO CAAQS. BAAQMD's CO screening criteria are summarized below.

1. The project traffic would not increase traffic volumes at affected intersections to more than 44,000 vehicles per hour.
2. The project traffic would not increase traffic volumes at affected intersections to more than 24,000 vehicles per hour where vertical and/or horizontal mixing is substantially limited (e.g., tunnel, parking garage, bridge underpass, natural or urban street canyon, below-grade roadway).
3. The project is consistent with an applicable congestion management program established by the county congestion management agency for designated roads or highways, regional transportation plan, and local congestion management agency plans.

Localized Particulate Matter Concentrations

BAAQMD adopted an incremental PM2.5 concentration-based significance threshold, with "substantial" contribution at the project level defined as total (exhaust and fugitive) annual average PM2.5 concentrations exceeding 0.3 microgram per cubic meter ($\mu g/m^3$). Additionally, BAAQMD considers projects to have a cumulatively considerable PM2.5 impact if concentrations from all local sources,

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[19] Bay Area Air Quality Management District. 2011. *California Environmental Quality Act Air Quality Guidelines*. May. San Francisco, CA.

[20] California Air Pollution Control Officers Association. 2009. *Health Risk Assessments for Proposed Land Use Projects.* CAPCOA Guidance Document. Available: < http://www.capcoa.org/wp-content/uploads/2012/03/CAPCOA_HRA_LU_Guidelines_8-6-09.pdf >. Accessed: October 22, 2015.

[21] Office of Environmental Health Hazard Assessment. 2015. *Air Toxics Hot Spots Program Guidance Manual for the Preparation of Health Risk Assessments.* February. Available: <http://oehha.ca.gov/air/hot_spots/2015/2015GuidanceManual.pdf >. Accessed: October 22, 2015.

[22] California Air Resources Board. 2000. *Risk Reduction Plan to Reduce Particulate Matter Emissions from Diesel-Fueled Engines and Vehicles*. Sacramento, CA. Prepared by Stationary Source Division and Mobile Source Control Division. Available: <http://www.arb.ca.gov/diesel/documents/rrpfinal.pdf>. Accessed: September 18, 2015.

[23] DPM is the primary TAC of concern for mobile sources—of all controlled TACs, emissions of DPM are estimated to be responsible for about 70 percent of the total ambient TAC risk. Given the risks associated with DPM, tools and factors for evaluating human health impacts from project-generated DPM have been developed and are readily available. Conversely, tools and techniques for assessing project-specific health outcomes as a result of exposure to other TAC (e.g., benzene) remain limited. These limitations impede the ability to evaluate and precisely quantify potential public health risks posed by TAC exposure.

including project-related sources, exceed 0.8 μg/m^3. BAAQMD has not established PM10 thresholds of significance. BAAQMD's PM2.5 thresholds apply to both new receptors and new sources. However, BAAQMD considers fugitive PM10 from earthmoving activities to be less than significant with application of BAAQMD's Basic and, if warranted, Additional Construction Mitigation Measures.

Localized Toxic Air Contaminant Concentrations

TACs are a defined set of airborne pollutants that may pose a present or potential hazard to human health. A wide range of sources, from industrial plants to motor vehicles, emits TACs, either directly or through reactions among the different pollutants in the atmosphere. The health effects associated with TACs are quite diverse and generally assessed locally rather than regionally. TACs can cause long-term health effects, such as cancer, birth defects, neurological damage, asthma, bronchitis, or genetic damage, or short-term acute affects, such as eye watering, respiratory irritation (a cough), running nose, throat pain, or headaches. For evaluation purposes, TACs are separated into carcinogen and non-carcinogen categories, based on the nature of the physiological effects associated with exposure to the pollutant.

DPM is a form of localized PM (see above) that is generated by diesel equipment and vehicle exhaust. DPM has been identified as a TAC and is particularly concerning because long-term exposure can lead to cancer, birth defects, and damage to the brain and nervous system.

Other potential TACs that may be of concern for the Project include vehicle emissions–related TACs, such as acetaldehyde, benzene, 1,3-butadiene, ethylbenzene, formaldehyde, and naphthalene.

BAAQMD has adopted incremental cancer and hazard thresholds to evaluate receptor exposure to TAC emissions. The "substantial" TAC threshold defined by BAAQMD is an excess cancer risk level of more than 10 in one million, or a non-cancer (i.e., chronic or acute) hazard index (HI) greater than 1.0. BAAQMD also considers projects to have a cumulatively considerable TAC impact if they result in excess cancer risk levels of more than 100 in 1 million or HI greater than 10.0.

Asbestos

BAAQMD considers a project to have a significant impact if it does not comply with the applicable regulatory requirements outlined in Regulation 11, Rule 2.

Odors

The odor threshold as shown in Table 3.4-5 is consistent with BAAQMD Regulation 7 for Odorous Substances and reflects the most stringent standards derived from the Air District rule.

Methods for Analysis

Construction

Mass Emissions

Construction of the Project would generate emissions of ROG, NO_X, CO, PM10, and PM2.5 that would result in short-term impacts on ambient air quality in the study area. Combustion exhaust, fugitive dust (PM10 and PM2.5), and fugitive off-gassing were estimated using the California Emissions Estimator Model (CalEEMod), version 2013.2.2, and construction activity and scheduling information, including phasing information, provided by the Project Sponsor. Equipment inventory data, including equipment type, horsepower, and fuel type were provided by the Project Sponsor. Other construction information,

including the amount of soil imported and exported, the amount of demolition material produced, the number of and distance traveled by haul trucks, and the amount of water used during construction, was also provided by the Project Sponsor. Equipment data not provided by the Project Sponsor, such as load factors, were generated by model default values.

Construction would occur in discrete, partially overlapping phases to construct each of the three future buildings on the Project site. Construction of each of the building areas will involve three to four sub-phases of construction. These sub-phases are *demolition* (except at future Building 21), *foundations*, *core and shell,* and *tenant improvements.* Construction is projected to begin in 2016 and end in 2020. For a full list of the construction details and assumptions provided by the Project Sponsor, please refer to Appendix 3.4.

Demolition associated with existing Buildings 307–309, which is required to accommodate the future Building 21, is a separate project and is thus not included in the analysis of Project emissions. However, emissions from these activities have been quantified in the analysis of cumulative impacts. Pollutant estimates were based on a combination of Project Sponsor input and model defaults, as described below.

- Emissions from on-road employee commute vehicles were calculated separately, independent of CalEEMod using methodology and emission factors consistent with CalEEMod. This is because the Project Sponsor specified that there would be a fixed number of construction employees on the site each day, which cannot be inputted into CalEEMod. Emission factors are based on a weighted average for all vehicle speeds for EMFAC's LDA/LDT1/LDT2 vehicle categories.[24] Emissions factors for methane and nitrous oxide were estimated using the ARB's recommended approach.[25] Construction employee one-way trip lengths are based on the CalEEMod default of 12.4 miles per employee trip for San Mateo County home/work trips (from the CalEEMod User's Guide appendix[26]). It was conservatively assumed that all employees would make two trips per day (one to the site and one home). Criteria pollutant and GHG emissions generated by employee vehicles were estimated by multiplying the number of daily employee vehicle miles by the EMFAC2014 emission factors.
- Emissions from work-truck vehicles used at the construction site were calculated separately, independent of CalEEMod. This is because the work trucks (i.e., consumer-available trucks, used to transport construction personnel on the Project site) are considered on-road vehicles and are not calculated by CalEEMod. Emission factors for the work trucks are based on the 15-mph emission factors for weighted gas and diesel for EMFAC's LHD1[27] category. A 15-mph emission factor was assumed to be a reasonable estimate of the speed traveled by the trucks at the construction site and also a conservative estimate with respect to emissions, given that vehicle emissions-efficiencies are typically lower at low speeds. The Project Sponsor provided the hours per day that the work trucks would be operating at the construction site. The amount of vehicle

[24] LDA = light-duty auto; LDT1 = light-duty trucks with an equivalent test weight equal to or less than 3,750 lbs; LDT2 = light-duty trucks with an equivalent test weight between 3,751 and 5,750 lbs.

[25] California Air Resources Board. 2013. *Mobile Source Emission Inventory – EMFAC 2011 Frequently Asked Questions*. Available: <http://www.arb.ca.gov/msei/emfac2011-faq.htm#emfac2011_web_db_qstn07>. Accessed: January 12, 2016.

[26] California Air Pollution Control Officers Association. No date. *CalEEMod User's Guide – Appendix D.* Available: <http://www.aqmd.gov/docs/default-source/caleemod/caleemod-appendixd.pdf?sfvrsn=2>. Accessed: January 12, 2016.

[27] LHD1 = light-heavy duty trucks with a gross vehicle weight rating between 8,501–10,000 lbs.

miles traveled by the work trucks was calculated by multiplying the operating hours per day by the assumed speed of 15 mph. The vehicle miles traveled were then multiplied by the 15 mph emission factors to determine emissions.

Emissions from each of the above sources would be generated throughout construction, varying in intensity depending on the nature and scale of construction activity. The average daily emissions were compared to BAAQMD thresholds.[28] The average daily construction emissions were estimated by calculating emissions for each component of construction activity and then summing emissions that would occur within each year in the proposed construction schedule and dividing by the number of days that construction would occur in that year (see Appendix 3.4).

Diesel Particulate Matter

Exposure to construction-related DPM was assessed by predicting the health risks in terms of excess cancer, non-cancer hazard impacts, and elevated PM2.5 concentrations. EPA's AERMOD dispersion model was used to predict hourly PM2.5 and exhaust DPM concentrations at sensitive land uses; DPM is taken as PM2.5 exhaust from diesel equipment only. Both are based on annual PM2.5 mass emissions and the construction schedule Estimates of project-level cancer risk, non-cancer HI, and annual PM2.5 concentrations were based on annual concentrations from AERMOD, anticipated construction durations, and accepted Office of Environmental Health Hazard Assessment (OEHHA)[29] and BAAQMD[30] default values. The risk calculations incorporate OEHHA's recent guidance update, which includes age-specific factors to take into account the increased sensitivity to carcinogens during early-in-life exposure.

Consistent with BAAQMD guidance, cumulative health risks were also analyzed by adding project-level health risk contributions to ambient conditions. Background stationary, highway, and railway sources within 1,000 feet of the Project site were identified using Google Earth map files provided by BAAQMD.[31] Google Earth map files include estimated risk and hazard impacts at nearby receptors from these sources. Risk and hazard impacts from generators were adjusted using BAAQMD's Diesel IC Engine Multiplier Tool.

Operation

Mass Emissions

Operation of the Project would generate emissions of ROG, NO_X, CO, PM10, and PM2.5 that could result in long-term impacts on ambient air quality. Three types of air pollutant sources are expected during operation of the Project: *area*, *energy*, and *mobile*. Area sources include landscaping activities, consumer products (e.g., cleaning products), and periodic paint emissions from facility upkeep. Energy sources include natural gas combustion for space heating and cooking. Mobile sources include vehicle trips from employees and visitors to the Campus.

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[28] BAAQMD does not have a threshold for fugitive dust. Instead, the threshold consists of compliance with dust control best management practices.

[29] Office of Environmental Health Hazard Assessment. 2015. *Risk Assessment Guidelines Guidance Manual for Preparation of Health Risk Assessments*. February.

[30] Bay Area Air Quality Management District. 2011. *California Environmental Quality Act Air Quality Guidelines*. May. San Francisco, CA.

[31] Bay Area Air Quality Management District. 2014. *Tools & Methodology*. Last Revised: January 3, 2014. Available: http://www.baaqmd.gov/plans-and-climate/california-environmental-quality-act-ceqa/ceqa-tools. Accessed: February 8, 2016.

Area, energy, and mobile source emissions associated with the Project baseline (i.e., operation of the TE Connectivity Campus) would be replaced with operational emissions associated with the Project. The difference in operational emissions between the Project and the previous uses associated with the TE Connectivity Campus represents the net impact of the Project analyzed in this analysis.

Area source and energy emissions associated with the TE Connectivity Campus were estimated using CalEEMod to establish the Project baseline. Area source and energy emissions from Building 21, Building 22, and the hotel were also modeled in CalEEMod to determine Project emissions. The net effect of the Project was determined by subtracting the Project area source and energy emissions from the baseline emissions. Emissions from existing mobile sources were assumed to be zero because the baseline condition at the existing TE Connectivity Campus is assumed to include no active employees, as explained in more detail in Chapter 3, *Environmental Impact Analysis*.

Project mobile-source emissions were calculated independently of CalEEMod, using vehicle miles traveled (VMT) data specific to the Project. Project-generated VMT was derived from a memorandum prepared by Fehr & Peers (included in Appendix 3.4) that summarizes travel characteristics for the Project. The memorandum quantifies the number of VMT per person at the Project site for three groups of people: full-time employees and interns; vendors and contractors; and visitors. These VMT values were multiplied by the number of new employees at non-hotel Project uses (6,400 employees) to determine Project VMT. VMT associated with the hotel use at the Project site was calculated separately using trip rates from the Institute of Transportation Engineer's (ITE's) *Trip General Manual, 9th Edition,*[32] and default trip percentages and lengths from CalEEMod. Employee travel in employer-sponsored shuttles and vanpools is not included in the Fehr & Peers memorandum and was evaluated separately. Existing data for employer-sponsored shuttles and vanpools (i.e., vehicle make and model, vehicle model years, vehicle fuel types, annual VMT) were provided by the Project Sponsor (included in Appendix 3.4). To estimate VMT from employer-sponsored shuttles and vanpools associated with the Project, the existing VMT provided by the Project Sponsor was scaled by 94 percent to account for the anticipated maximum employment growth.[33] Project VMT from all sources was multiplied by the appropriate emissions factors from the EMFAC2014 model to characterize accurately the specific vehicle types that would be associated with the Project. Specific combinations of emissions factors from EMFAC2014 were used for each type of trip. Details on the emissions factors used in the analysis are included in Appendix 3.4.

Toxic Air Contaminants

Because Project operation would not involve an appreciable amount of diesel vehicles, toxic air contaminants associated with Project operation were not assessed.

Carbon Monoxide Hot Spot

The analysis of CO hot spots was conducted using vehicle trip information from the Project's traffic impact assessment (see Section 3.3, *Transportation/Traffic*). Traffic volumes at local intersections were evaluated relative to the BAAQMD screening criteria discussed above.

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[32] Institute of Transportation Engineers. 2012. *Trip Generation Manual, 9th Edition.* Available: <http://www.ite.org/tripgeneration/trippubs.asp>. Accessed: April 21, 2016.

[33] The existing VMT data provided by the Project Sponsor correspond to an employee count of 6,785. It was assumed that the rate of employee use of the shuttles and vanpools would be identical for existing employees and new Project employees; thus, the Project increase of 6,400 employees would result in 94 percent (6,400/6,785 = 94 percent) of the existing shuttle and vanpool VMT.

Impacts and Mitigation Measures

Impact AQ-1: Conflict with Air Quality Plan. The Project would not conflict with or obstruct implementation of the applicable air quality plan. (LTS)

San Mateo County is currently designated a nonattainment area for the federal ozone standard, a maintenance area for the federal CO standard, and nonattainment for state ozone, PM10, and PM2.5 standards (Table 3.4-3). The most recent federal attainment plans are the 2001 Ozone Attainment Plan and the 1994 CO Redesignation Request and Maintenance Plan. The most recent state air quality plan is the 2010 Clean Air Plan, which provides an integrated strategy to control ozone, PM, TACs, and GHG emissions. BAAQMD plans estimate future emissions in the SFBAAB and determine strategies necessary for emissions reductions through regulatory controls. Emissions projections are based on population, vehicle, and land use trends typically developed by BAAQMD, the Metropolitan Transportation Commission (MTC), and Association of Bay Area Governments (ABAG).

A project is deemed inconsistent with air quality plans if it would result in population and/or employment growth that exceeds estimates used to develop applicable air quality plans. Projects that propose development that is consistent with the growth anticipated by the relevant land use plans would be consistent with the current BAAQMD air quality plans. Likewise, projects that propose development that is less dense than anticipated within a general plan (or other governing land use document) would be consistent with the air quality plans because emissions would be less than estimated for the region. If a project proposes development that is greater than anticipated growth projections, the project would be in conflict with BAAQMD air quality plans, and might have a potentially significant impact on air quality because emissions would exceed those estimated for the region. This situation would warrant further analysis to determine if a proposed project and surrounding projects would exceed the growth projections used in BAAQMD air quality plans for a specific subregional area.

As discussed in Section 3.1, *Land Use and Planning*, in Impact LU-1, the Project would not conflict with the existing land use designation and would be consistent with the City's General Plan. Section 3.12, *Population and Housing*, indicates that the Project would add 6,550 employees,[34] which is nearly three times the anticipated employment growth for the City's sphere of influence from 2015 to 2020 and 0.6 percent of the anticipated population growth in the ABAG area for 2040.[35] However, Section 3.12, *Population and Housing*, indicates that although the number of employees generated by the Project would exceed ABAG projections, it would not result in an increase in city population or a demand for housing that would exceed ABAG projections.

The most relevant land use plan for the Project site is the current City of Menlo Park General Plan and related documents. The Project's inclusion of trip-reducing Transportation Demand Management (TDM) features and incentives would be consistent with Goal II-C (promote the use of alternatives to the single occupant automobile) of the Circulation and Transportation Element of the City's General Plan.[36]

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[34] Building 21 would have 3,400 employees, Building 22 would have 3,000 employees, and the hotel would have 150 employees.

[35] Assumed growth between 2010 and 2040 in jobs is 1,119,920. Association of Bay Area Governments. 2013. *The Bay Area in 2040.* Available: <http://mtc.ca.gov/sites/default/files/2-The_Bay_Area_In_2040.pdf>. Accessed: January 19, 2016.

[36] City of Menlo Park. 1994. *City of Menlo Park General Plan – Circulation and Transportation Element*. Available: <http://menlopark.org/DocumentCenter/View/233>. Accessed: January 19, 2016.

The Project is consistent with BAAQMD's 2010 CAP strategies, including TCM-C-1 (Voluntary Employer-Based Trip Reduction Programs) and TCM-D-3 (Local Land Use Strategies). TCM-C-1 supports voluntary efforts by Bay Area employers to encourage their employees to use alternative commute modes, such as transit, ridesharing, bicycling, walking, and telecommuting. TCM-D-3 supports and promotes land use patterns, policies, and infrastructure investments that support higher density mixed-use, residential, and employment development near transit in order to facilitate walking, bicycling, and transit use.

The Project also includes numerous energy conservation measures including, but not limited to, adherence to the Green Buildings Standards Code and California Building Energy Efficiency Standards. These measures would act to reduce Project-related area and mobile source emissions; however, emissions generated during operation (discussed below) are expected to exceed BAAQMD significance thresholds.

As indicated above, the Project would not result in unplanned regional growth, as it is consistent with the City's General Plan land use designations and ABAG growth projections. Accordingly, the Project would not conflict with implementation of the applicable air quality plan. This impact would be ***less than significant***.

Impact AQ-2a: Construction Criteria Air Pollutant Emissions. Construction activities at the Project site could result in the generation of regional criteria pollutant emissions during construction in excess of BAAQMD thresholds. (LTS/M)

Construction of the Project has the potential to create air quality impacts through the use of heavy-duty construction equipment, construction worker vehicle trips, and truck hauling trips. In addition, fugitive dust emissions would result from site disturbance, whereas fugitive ROG emissions would result from application of architectural coatings and paving. The assessment of construction air quality impacts considers each of these potential sources. Construction assumptions are provided in Appendix 3.4.

Estimated construction emissions are summarized in Table 3.4-6, which shows average daily emissions for each year of construction, based on the Project schedule and phasing information provided by the Project Sponsor. It was assumed that the duration of construction would be approximately four years and would consist of three primary phases that correspond to each of the new Project buildings. As discussed under *Methods for Analysis*, construction at each building would require four or five sub-phases.

Table 3.4-6. Estimated Unmitigated Average Daily Construction Emissions (pounds per day)

Average Daily Emissions per Year[a]	ROG	NO_X	CO	PM10		PM2.5	
				Dust	Exhaust	Dust	Exhaust
2016	2	12	85	1	< 1	< 1	< 1
2017	12	10	42	1	< 1	< 1	< 1
2018	12	14	83	2	< 1	< 1	< 1
2019	25	15	61	1	< 1	< 1	< 1
2020	43	5	16	< 1	< 1	< 1	< 1
BAAQMD Thresholds	54	54	--	BMPs	82	BMPs	54
Exceed Thresholds?	*No*	*No*	--	--	*No*	--	*No*

Notes:

a. Refer to Appendix 3.4 for a summary of phases assumed during each construction period.

b. BMPs = best management practices.

As shown in Table 3.4-6, construction of the Project would not exceed BAAQMD's numeric thresholds for any pollutants in any year. According to data provided by the Project Sponsor, construction would require a large number of heavy-duty, off-road types of equipment that would operate many hours each day for a substantial portion of the corresponding construction phase. These assumptions would typically contribute to a high level of emissions; however, the Project Sponsor, as discussed in Chapter 2, *Project Description*, has committed to using only equipment with Tier 4 compliant engines, and the emissions in Table 3.4-6 reflect this commitment. The Tier 4 commitment results in criteria pollutant emissions that are substantially lower than would otherwise occur in the absence of Tier 4 compliant engines.

BAAQMD does not have quantitative thresholds for fugitive dust. Instead, the threshold is based on compliance with best management practices (BMPs). Unmitigated fugitive dust could adversely affect local and regional PM10 levels, which would result in health impairment due to the inhalation of dust. Project fugitive dust emissions would result in a ***potentially significant*** impact.

MITIGATION MEASURES. Because BAAQMD considers fugitive dust emissions to be significant without BMPs, mitigation would be required to control fugitive dust. BAAQMD-recommended BMPs for fugitive dust are outlined in Mitigation Measure AQ-2.1.

Table 3.4-7 summarizes estimated construction emissions after the incorporation of the dust mitigation measures indicated in Mitigation Measure AQ-2.1.

Table 3.4-7. Estimated Mitigated Construction Emissions (pounds per day)

				PM10		PM2.5	
Average Daily Emissions by Year	**ROG**	**NO_X[a]**	**CO**	**Dust**	**Exhaust[a]**	**Dust**	**Exhaust[a]**
2016	2	12	85	< 1	< 1	< 1	< 1
2017	12	10	42	< 1	< 1	< 1	< 1
2018	12	14	83	1	< 1	< 1	< 1
2019	25	15	61	1	< 1	< 1	< 1
2020	43	5	16	< 1	< 1	< 1	< 1
BAAQMD Thresholds	54	54	-	BMPs	82	BMPs	54
Exceed Thresholds?	*No*	*No*	-	-	*No*	-	*No*

Notes:

[a,] Mitigated emissions assume that on-site dust emissions would be reduced by 88.3 percent, per BAAQMD BMPs. The BMPs would not affect offsite dust emissions that would occur as a result of employee vehicles and haul trucks traveling on highways and roads to get to the Project site.

Mitigation Measure GHG-1.1 in Section 3.5, *Greenhouse Gas Emissions*, would require the use of alternative fuel for construction diesel equipment. The effects of this measure are not included in Table 3.4-7, but its implementation would lower particulate emissions without increasing NO_X emissions. [37]

As shown in Table 3.4-7, fugitive dust emissions would be reduced by 88.3 percent after implementation of the BAAQMD dust control measures specified in Mitigation Measure AQ-2.1. Emissions of all other pollutants would remain unchanged. Because dust emissions would be mitigated through the BMPs, this impact is considered to be ***less than significant with mitigation***.

AQ-2.1: Implement BAAQMD Basic Construction Mitigation Measures to Reduce Construction-Related Dust. The Project Sponsor shall require all construction contractors to implement the basic construction mitigation measures recommended by BAAQMD to reduce fugitive dust emissions. Emission reduction measures shall include, at a minimum, the following measures. Additional measures may be identified by BAAQMD or contractor as appropriate.

- All exposed surfaces (e.g., parking areas, staging areas, soil piles, graded areas, and unpaved access roads) shall be watered two times per day. Recycled water, to be purchased through advance arrangement with the City of Redwood City or the City of Palo Alto, shall be used to water all exposed surfaces.
- 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 roads shall be limited to 15 mph.
- All roadways, driveways, and sidewalks to be paved shall be completed as soon as possible. Building pads shall be laid as soon as possible after grading unless seeding or soil binders are used.
- 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.

[37] The use of alternative fuels can sometimes lower emissions of one pollutant but increase emissions of another pollutant compared to the use of conventional diesel or gasoline. The net air quality effects depend on which alternative fuel is used. For example, compared to conventional diesel, biodiesel will have lower particular matter and hydrocarbon emissions, but can increase NO_X emissions, depending on blend. One EPA study showed that B100 could increase NO_X by 10 percent compared to conventional diesel but that B20 could lower or raise NO_X emissions by 2 percent either direction. Mitigation Measure GHG-1.1 only includes B20 (not B100) and B20 has a very small effect on NO_X. Clean natural gas (CNG) and electricity would reduce hydrocarbons, particulate, and NO_X emissions compared to conventional diesel fuel. Thus Mitigation Measure GHG-1.1 is expected to lower GHG emissions as well as particulate and hydrocarbon emissions while not increasing NO_X emissions. The referenced EPA study is available at: http://cta.ornl.gov/bedb/biofuels/biodiesel/Average_Biodiesel_Emissions_Compared_to_Conventional_Diesel.xls.

Impact AQ-2b: Operational Criteria Air Pollutant Emissions. Operational activities at the Project site could result in the generation of regional criteria pollutant emissions during operation in excess of BAAQMD thresholds. (LTS/M)

Operation of the Project has the potential to create air quality impacts primarily associated with mobile, area, and energy sources. Motor vehicle traffic would include daily trips to and from the Campus by employees, vendors and contractors, and visitors. Area sources include landscaping equipment, off-gassing during the reapplication of architectural coatings, and consumer products (solvents, cleaning supplies, etc.). Energy sources include natural gas combustion for space and water heating. Each of these sources was taken into account in calculating the Project's long-term operational emissions. Building 21 would be designed to LEED Gold 2009 standards. A number of other sustainability features would be included in the Project design, as discussed in Chapter 2, *Project Description.*

Project-generated VMT in 2020 were obtained from a memorandum prepared by Fehr & Peers and data from the Project Sponsor, as discussed under *Methods for Analysis*, above. VMT in 2040 was conservatively assumed to be equal to VMT in 2020. This would be a conservative assumption because, in the event that ConnectMenlo is adopted, VMT in 2040 would very likely be lower because of a shift to higher-density housing and land use patterns.

Estimated operational emissions for the baseline scenario and Project scenario are summarized in Table 3.4-8. As discussed above, existing mobile-source emissions are assumed to be zero, because this EIR assumes there are no active employees at the TE Connectivity Campus. Project-generated mobile source emissions were calculated for two build out years (2020 and 2040), because the rate of emissions from Project-employee vehicles is expected to decrease between 2020 and 2040 due to advancements in vehicle technology and the turnover of older, more heavily polluting vehicles. Thus, it is more comprehensive to assess mobile source emissions for two separate years with differing emission rates to determine the effect of the Project.

The difference in total operational emissions (area + energy + mobile sources) between the Project and the baseline uses represents the net impact of the Project. All Project structures were conservatively assumed to be fully occupied immediately following construction.

As shown in Table 3.4-8, NO_X emissions for the Project would exceed BAAQMD's mass emissions threshold in 2020 but not in 2040. Exceedances of BAAQMD thresholds are shown in <u>underline</u> in the table. The vast majority of the emissions exceedance for NOx would be the result of emissions generated by mobile sources (trips from employee and visitor vehicles; vendor, contractor, and delivery vehicles; and employer-sponsored shuttle and vanpool vehicles). This is considered a ***potentially significant*** impact.

Although Project design features and LEED certification for Building 21 would contribute to criteria pollutant reductions, NO_X emissions would still exceed BAAQMD's mass emissions thresholds of 54 pounds per day. For NO_X emissions from energy sources, the Project would actually result in a net reduction in emissions, because the Project emissions would be lower than the existing site emissions. That net reduction is more than offset, however, by Project mobile sources.

Table 3.4-8. Estimated Operational Average Daily Emissions[a]

Condition/Source	ROG	NO_X	CO	PM10	PM2.5
Baseline Emissions					
Area Sources[b]	21	<1	<1	<1	<1
Energy Sources[b]	2	22	18	2	2
Mobile Sources[b]	0	0	0	0	0
Total Baseline Emissions[b]	23	22	18	2	2
Project Emissions					
Area Sources[c]	28	<1	<1	<1	<1
Energy Sources[c]	1	10	8	<1	<1
Mobile Sources in 2020[c]	40	75	294	17	7
Mobile Sources in 2040[c]	20	43	131	17	7
Total Project Emissions in 2020[c]	69	85	302	18	8
Total Project Emissions in 2040[c]	49	53	139	17	8
Net Emissions					
Area Sources[d]	7	<1	<1	<1	<1
Energy Sources[d]	-1	-12	-10	-1	-1
Mobile Sources in 2020[d]	40	75	294	17	7
Mobile Sources in 2040[d]	20	43	131	17	7
Total Net Emissions – 2020[e]	46	63	284	16	6
Total Net Emissions – 2040[e]	26	31	121	16	6
Threshold	54	54	CAAQS[f]	82	82

Notes:
Exceedances of BAAQMD thresholds are shown in underline.
a. pounds per day
b. These are emissions associated with the baseline conditions at the TE Connectivity Campus and will be replaced by Project.
c. These are emissions associated with the Project only for year 2020 and 2040.
d. These are the differences in emissions between the Project in 2020 and 2040 and the baseline conditions for each type of emissions source.
e. This is the total difference in emissions (i.e., the sum of all three emissions sources combined) between the Project in 2020 and 2040 and the baseline conditions.
f. Refer to Impact AQ-4b for significance determination.

MITIGATION MEASURES. The requirement for operational offsets would require the procurement of annual offsets until Project decommissioning. Implementing offsets to cover operational NO_X emissions over the BAAQMD thresholds would result in total fees of approximately $104,200. This assumes that NOx emissions associated with the Project would decrease linearly between the 2020 net emissions level (63 pounds/day) and the 2040 emissions level (31 pounds/day). Under this assumption, Project emissions would exceed the BAAQMD NOx threshold between 2020 and 2025, while the threshold would not be exceeded between 2026 and 2040. During the years of exceedance, the offset cost would be equal to the difference between Project emissions and the BAAQMD NOx threshold multiplied by the emissions fee.[38] The actual fees needed to offset emissions would be calculated by the Project Sponsor using the most recently updated data for each year and then reviewed and approved by the City.

Purchasing offsets, through the implementation of Mitigation Measure AQ-2.2, would reduce emissions from Project operations by entering into a mitigation contract with the City and funding eligible projects within the city. With implementation of this mitigation, the Project would result in a ***less-than-significant*** impact with respect to NO_X operational emissions.

AQ-2.2: Offset NO_X Emissions Generated during Project Operation that Are above the BAAQMD NO_X Average Daily Emission Threshold. The Project Sponsor shall, prior to occupancy of the first building within the Project site, enter into an agreement with the City to develop an alternative or complementary offsite mitigation program to offset operational NO_X emissions to the level established by the BAAQMD thresholds for the years in which the Project's emissions exceed the BAAQMD threshold. The offsite mitigation program shall require the Project Sponsor to provide a one-time payment to the City to establish a program to fund emissions reduction projects through grants and similar mechanisms within the city of Menlo Park. The amount of such payment shall be based on the then-current BAAQMD Carl Moyer Program cost-effectiveness limit multiplied by emissions that exceed BAAQMD's average daily threshold for each year that emissions exceed the threshold plus a 5 percent administrative fee to fund procurement of offsite emissions reductions for the Project's projected operational emissions.

Potential projects shall be limited to those that will reduce emissions for each year in which the projects' emissions exceed the BAAQMD threshold through the end of 2025, which is when the Project's operational emissions are projected to be below the average daily thresholds, including, but not limited to, the following:

- Alternative-fuel, low-emissions school buses, transit buses, and other vehicles
- Diesel engine retrofits and repowers
- Bike-sharing programs
- Electric vehicle charging stations and plug-ins

All offsite reductions must be quantifiable, verifiable, and enforceable. The Project Sponsor shall engage a qualified air quality expert to coordinate with the City to identify a list of potential projects that would be eligible for funding. Emissions reduction projects shall be funded so that the Project's emissions are reduced each year until the end of 2025. The air quality expert retained by the Project Sponsor shall provide a report within one year of occupancy of the first building within the Project site, identifying the projects that were funded

[38] The current emissions fee is $18,030/weighted ton of criteria pollutants (NO_X + ROG + [20*PM due to exhaust]).

and associated NO_X emissions expected to be realized for each year out until the end of 2025. Annual reporting of the implementation of emissions reduction projects shall be required until the Project's emissions are less than the BAAQMD threshold without the offsets.

If a sufficient number of emissions reduction projects are not identified to meet the required performance standards in the city of Menlo Park, the Project Sponsor shall consult with a qualified air quality expert to ensure conformity is met through some other means, thereby achieving the performance standard of net zero operational emissions in excess of BAAQMD's average daily thresholds through 2025, including, but not limited to, payment of a one-time mitigation offset fee to BAAQMD's Strategic Incentives Division plus a 5 percent administrative fee to fund one or more emissions reduction projects within the San Francisco Bay Area Air Basin. Reporting for any emissions reduction projects outside the city shall be completed on the same schedule as indicated above for emissions reduction projects in the city.

If annual reports indicate that emissions reductions do not adequately reduce project emissions to a level below the BAAQMD threshold for any year, then a penalty of 200 percent shall be imposed, which will require the Project Sponsor to obtain an additional year of offsets, based on the amount of emissions by which the Project's emissions exceed the BAAQMD threshold for the next year (e.g., if the 2019 emissions exceed the threshold by 5 tons, then 10 tons of emissions must be provided by 2020).

Impact AQ-3: Result in a Cumulatively Considerable Net Increase of any Criteria Pollutant for which the Project Region is Nonattainment. The Project could result in the generation of criteria pollutant emissions that would result in a cumulatively considerable net increase. (LTS/M)

BAAQMD has identified project-level thresholds to evaluate criteria pollutant impacts (see Table 3.4-5). In developing these thresholds, BAAQMD considered levels at which Project emissions would be cumulatively considerable. As noted in their *CEQA Guidelines.*[39]

> In developing thresholds of significance for air pollutants, BAAQMD considered the emission levels for which a project's individual emissions would be cumulatively considerable. If a project exceeds the identified significance thresholds, its emissions would be cumulatively considerable, resulting in significant adverse air quality impacts to the region's existing air quality conditions. Therefore, additional analysis to assess cumulative impacts is unnecessary.

The criteria pollutant thresholds presented in Table 3.4-5 therefore represent the maximum emissions the Project may generate before contributing to a cumulative impact on regional air quality. Consequently, exceedances of the project-level thresholds would be cumulatively considerable. As discussed in Impact AQ-2b, operational emissions associated with the Project are expected to exceed BAAQMD's quantitative NOx threshold but would be mitigated to a level below the threshold with implementation of emissions offsets. Because operational emissions would be below the threshold with mitigation, this impact is considered ***less than significant with mitigation***.

A full discussion of cumulative effects is included in the *Cumulative Impacts* section below.

[39] Bay Area Air Quality Management District. 2011. *California Environmental Quality Act Air Quality Guidelines*. May. San Francisco, CA.

Impact AQ-4a: Exposure of Existing Sensitive Receptors to Substantial Pollutant Concentrations During Construction. The Project would expose existing sensitive receptors to substantial pollutant concentrations during construction. (LTS/M)

Toxic Air Contaminants

Project construction would generate PM2.5 and DPM, resulting in the exposure of nearby existing sensitive receptors (e.g., residences, schools, parks) to increased PM2.5 concentrations and health risks associated with DPM. Sensitive receptors located adjacent to the Project site are listed in Table 3.4-4. Exposure of these receptors to construction PM2.5 and DPM emissions was assessed by predicting PM2.5 and DPM concentrations at the receptor locations based on the mitigated emissions scenario (i.e., the scenario in which dust emissions have been mitigated by 88.3 percent as a result of BAAQMD BMPs), as this represents the scenario in which receptors would experience exposure to Project-related emissions.

PM2.5 Analysis

The results of the PM2.5 analysis are summarized in Table 3.4-9 and are compared to BAAQMD's project-level PM2.5 threshold. PM2.5 concentrations at residential, school, and recreational receptors during construction, with inclusion of the dust reduction measures specified in Mitigation Measure AQ-2.1, would be less than the BAAQMD threshold by a substantial margin (one order of magnitude). In addition, Mitigation Measure GHG-1.1, which would require implementation of BAAQMD's best management practices for construction, including the use of alternative-fuel construction vehicles/equipment (at least 15 percent of the fleet).. However, the reduction value has not been quantified because it is unknown at this time exactly which alternative fuels would be used.

As shown in Table 3.4-9, the Project would not result in PM2.5 concentrations in excess of BAAQMD's threshold during construction with Mitigation Measure AQ-2.1. This would be a ***less-than-significant*** impact.

Table 3.4-9. Project-Level PM2.5 Exposure during Construction with Mitigation[a]

Receptor	Maximum Annual PM2.5 Concentration ($\mu g/m^3$) with Mitigation Measure AQ-2.1
Residential	0.03
Schools	0.02
Recreational	0.01
BAAQMD Threshold	0.3

Notes:
[a.] See Table 3.4-4 and Appendix 3.4 for additional information on the receptors modeled in the analysis.

DPM Analysis

Cancer and chronic health risks are associated with long-term exposure to diesel exhaust. The health risks from exposure to construction DPM emissions were assessed by predicting cancer and chronic non-cancer risks at individual offsite receptor locations. Exposure to carcinogens is expressed in terms of the incremental number of people per 1 million who may be expected to contract cancer as a result of the given exposure to the specific chemicals from this Project alone. The BAAQMD project threshold is an

increased risk of contracting cancer of 10 in 1 million (which means that out of 1 million people exposed to a given level of pollution,10 would be expected to contract cancer).[40] Chronic exposure to non-carcinogens is expressed with use of a HI, which is the ratio of expected exposure level to an acceptable reference exposure level. A HI greater than 1.0 is considered significant.

Because of the proximity of the residential receptors to the Project site, the multi-year construction schedule, and the large scale of construction activity (in terms of the number of pieces of equipment and their daily operating times), cancer risks have the potential to be elevated in comparison to other projects that may not have these variables. In addition, the meteorological conditions at this site result in northerly winds, which would exacerbate pollutant concentrations at the sensitive receptors south of the Project site. However, as discussed above, the Project Sponsor has committed to using Tier 4 compliant engines in all heavy-duty equipment onsite, which would result in lower PM2.5 exhaust emissions than would otherwise occur without the Tier 4 commitment and, thus, lower hazard index and cancer risk values.

The results of the health risk assessment are summarized in Table 3.4-10 and are compared to BAAQMD's project-level DPM thresholds. A detailed summary of the methodology used in estimating risk is provided in Appendix 3.4.

Table 3.4-10. Project-Level Cancer and Chronic (HI) Risks during Construction with Mitigation[a]

	With Mitigation Measures AQ-2.1	
Receptors	**Non-Cancer HI**	**Increased Cancer Risk (per million)**
Residential	0.005	6.6
Schools	0.004	0.5
Recreational	0.002	0.2
BAAQMD Thresholds	1	10

Notes:
[a.] See Table 3.4-4 and Appendix 3.4 for additional information on the receptors modeled in the analysis.

As shown in Table 3.4-10, construction of the Project would not result in any increases in cancer risk that would be in excess of BAAQMD thresholds at residential, school, or recreational receptors near the Project site. Because the hazard index and cancer risk would not exceed the applicable thresholds, this would be a ***less-than-significant*** impact.

Asbestos

Asbestos is a set of naturally occurring minerals that was previously used in building construction due to its heat resistance and strong insulating properties. Exposure to asbestos, however, has been shown to cause a number of disabling and fatal diseases, including lung cancer, mesothelioma, and pleural plaques. Demolition of the existing buildings may expose workers to asbestos if the material was used during construction of the buildings. The Project would comply with BAAQMD Regulation 11, Rule 2, which would control emissions of asbestos to the atmosphere during demolition activities. Accordingly, sensitive receptors or other people would not be exposed to asbestos, and this impact would be ***less than significant***.

[40] BAAQMD estimates that, in 2005, approximately 50 percent of the population within the San Francisco Bay Area had an ambient cancer risk of 500 in 1 million or more due to existing air pollution. Ambient cancer risks vary, depending on proximity and exposure to toxic air contaminant emissions sources.

Impact AQ-4b: Exposure of Existing Sensitive Receptors to Substantial Pollutant Concentrations from Project Operation. The Project would not expose existing sensitive receptors to substantial pollutant concentrations during operation. (LTS)

Toxic Air Contaminants

Implementation of the Project does not include siting new sensitive land uses; the Project would be used for office purposes. The Project is assumed to include installation of emergency diesel generators. Because BAAQMD does not issue a permit to operate for equipment that contributes to a risk of greater than 10 in one million, it is anticipated that generators associated with the Project would not contribute maximum cancer risks in excess of BAAQMD's threshold of 10 in one million. In addition, there would be no substantial source of diesel particulate matter from Project operation, because the primary component of operation (employee and visitor vehicle trips) would not involve an appreciable source of diesel vehicles. Therefore, there would be no risk of exposure of substantial pollutant concentrations to sensitive receptors during Project operation. This impact would be ***less than significant.***

Carbon Monoxide Hot-Spots

As discussed above, BAAQMD cites examples of intersections where vertical or horizontal mixing is limited, which includes tunnels, parking garages, bridge underpasses, natural or urban street canyons, and below-grade roadways.[41] At these categories of intersections, the BAAQMD CO screening criterion is 24,000 vehicles per hour, and at all other intersections the BAAQMD CO screening criterion is 44,000 vehicles per hour.

Continuous engine exhaust may elevate localized CO concentrations, resulting in "hot spots." Receptors exposed to these CO hot spots may have a greater likelihood of developing adverse health effects. CO hot spots are typically observed at heavily congested intersections where a substantial number of gasoline-powered vehicles idle for prolonged durations throughout the day. Peak-hour traffic volumes at intersections in the transportation study area were analyzed to determine whether the Project meets the BAAAQMD screening criteria. Peak hour traffic would be a maximum in the AM Peak Hour under the three "with Project" scenarios modeled for the Project at the intersection of Oak Avenue and Sand Hill Road (with vehicle-per-hour volumes of 30,528 [2020 with Project], 30,576 [2040 with Project with existing General Plan], and 31,360 [2040 with Project with ConnectMenlo]). This intersection is far from the Project site, is not heavily influenced by Project traffic, and is not considered to be any of the examples of intersections where vertical or horizontal mixing is limited. The maximum volumes in 2020 and in 2040 would be below the 44,000 vehicle per hour screening threshold at intersections where mixing is not limited, by a substantial amount (almost 30 percent). Intersection volumes at all other intersections would be below 24,000, so there would not be any exceedances of either the limited vertical/horizontal mixing threshold (24,000 vehicles per hour), or the non-limited mixing threshold (44,000 vehicles per hour). Thus, the Project would not result in an exceedance of the BAAQMD screening criteria, and CO concentrations would not exceed the CAAQS. This impact would be ***less than significant***.

[41] Bay Area Air Quality Management District. 2011. *California Environmental Quality Act Air Quality Guidelines*. May. San Francisco, CA

Impact AQ-5: Create Objectionable Odors. The Project would not create objectionable odors that would affect a substantial number of people. (LTS)

Although offensive odors rarely cause any physical harm, they can be unpleasant and lead to considerable distress among the public. This distress may often generate citizen complaints to local governments and air districts. Any project with the potential to frequently expose the public to objectionable odors would be deemed as one having a significant impact. According to ARB,[42] land uses associated with odor complaints typically include sewage treatment plants, landfills, recycling facilities, and manufacturing facilities.

Potential odor sources from Project operations would include diesel exhaust from weekly trash pick-up and the use of architectural coatings during routine maintenance; limited odors may also result from cooking appliances. The Project would involve the use of a recycled water system (subject to the approval of the City's building official) that would use wastewater generated at the Project site for non-potable purposes, such as toilets, urinals, and landscape irrigation. The recycled water system would be designed with odor control; as such, no offensive odors would be expected from the system.

When compared to existing odor sources in the surrounding area, which include commercial and industrial uses, odor impacts from Project operation would be similar. Accordingly, Project operation is not expected to result in odor impacts that would exceed BAAQMD's odor thresholds (see Table 3.4-5).

Potential odor sources during construction activities include diesel exhaust from heavy-duty equipment, and the use of architectural coatings. Construction-related odors near existing receptors would be temporary in nature and dissipate as a function of distance. Accordingly, construction and operation of the Project are not expected to result in odor impacts that would exceed BAAQMD's odor thresholds. This impact is considered ***less than significant***.

Cumulative Impacts

The geographic context for a discussion of cumulative impacts on regional air quality, such as ozone, is the SFBAAB, and for localized air quality, such as for CO and PM10, the geographic context is the Project vicinity (including the city and San Mateo County). This cumulative analysis examines the effects of the Project, in combination with other current projects, probable future projects, and projected future growth within the SFBAAB, San Mateo County, and the city in the next 20 years.

Odors are not addressed cumulatively for the Project because the types of uses anticipated to be developed or allowed under the proposed zoning would not generate significant sources of odor. In addition, the Project site is not located in an area where existing or future odor-producing uses are proposed. Therefore, the additive effect of assessing cumulative odor impacts is not relevant for this Project and would not be cumulatively considerable.

As discussed under Impact AQ-3, the BAAQMD CEQA Guidelines are applied to the cumulative analysis of impacts on regional air quality. Based on the justification that BAAQMD utilized in establishing its thresholds of significance for air quality pollutants, it is not necessary to consider the impacts of other foreseeable projects. However, the impact of the demolition of Buildings 307–309 is considered in the cumulative analysis because that activity is a reasonably foreseeable project and located on the Project site.

[42] California Air Resources Board. 2005. *Air Quality and Land Use Handbook.* May.

Impact C-AQ-1: Conflict with Air Quality Plan. The Project, combined with other development within the city, would not conflict with or obstruct implementation of the applicable air quality plan. (LTS)

As discussed above, the 2010 Clean Air Plan is based on ABAG's projections. Under BAAQMD methodology, for consistency with the 2010 Clean Air Plan, a project or plan must demonstrate that the population or VMT assumptions contained in the Clean Air Plan would not be exceeded and that the project or plan implements TCMs as applicable. As discussed in Section 3.12, *Population and Housing*, cumulative residential growth in the city would develop 6,084 dwelling units, which, when taken together with the Project's 457 new residents, would result in an increase in resident population of 16,336 (based on the current city persons per household [pph] ratio of 2.61).[43] ABAG projects that the city's population will be approximately 43,200 in 2040. Adding the cumulative plus Project growth of 16,336 to the current population of 33,273 would result in a total city population of 49,609 persons in 2040, which is above ABAG projections. However, the Project's contribution towards growth between 2015 and 2040 would be 2.4 percent and would not be considered a cumulatively considerable contribution. This would therefore be considered a ***less-than-significant*** impact.

Impact C-AQ-2a: Cumulative Criteria Pollutants during Construction. Construction activities associated with the demolition of Buildings 307–309 could generate substantial NO_X emissions in excess of BAAQMD threshold. (LTS)

As discussed in Chapter 2, *Project Description*, demolition of Buildings 307–309 is considered a reasonably foreseeable project. As discussed above under Impact AQ-2a, Project construction would not generate criteria pollutant emissions that would exceed the applicable BAAQMD thresholds. Similar to the Project, the demolition activities associated with Buildings 307–309 would result in criteria pollutant emissions from on-road and off-road equipment exhaust that could result in exceedances of BAAQMD thresholds. These criteria pollutant emissions would occur before Project construction activities. Thus, emissions from demolition activities are considered in isolation for this analysis of mass criteria pollutant emissions because an overlap with Project construction activities is not anticipated at this time. Emissions associated with demolition of Buildings 307–309 are shown in Table 3.4-11 for 2016, the year in which the activities would occur. The analysis of emissions associated with demolition activities assumes that the Project Sponsor would use primarily equipment with Tier 4 compliant engines, as discussed in Chapter 2, *Project Description*. Refer to Appendix 3.4 for the list of construction equipment that was assumed for the demolition activities analysis and the specific equipment that would have Tier 4 compliant engines.

As shown in Table 3.4-11, demolition activities associated with Buildings 307–309 would not result in significant impacts in 2016 because emissions would be below the BAAQMD threshold by a substantial margin for all pollutants. Consequently, the cumulative effect of this reasonably foreseeable project is considered to be ***less than significant***.

[43] The 16,336 new residents in the City = 457 residents resulting from the Project + (6,084 dwelling units x 2.61 pph).

Table 3.4-11. Estimated Average Daily Construction Emissions Associated with Demolition of Buildings 307–309 (pounds per day)

				PM10		PM2.5	
Average Daily Emissions per Year[a]	**ROG**	**NO_X**	**CO**	**Dust**	**Exhaust**	**Dust**	**Exhaust**
Demolition of Buildings 307–309 (2016)	3	22	67	2	< 1	< 1	< 1
BAAQMD Thresholds	54	54	--	BMPs	82	BMPs	54
Exceed Thresholds?	*No*	*No*	--	--	*No*	--	*No*

Impact C-AQ-2b: Cumulative Criteria Pollutants during Operation. Operational activities associated with the Project could generate substantial ROG, NO_X, and PM10 emissions in excess of BAAQMD thresholds. (LTS/M)

As discussed above, the BAAQMD's project-level thresholds of significance also represent levels at which a project's emissions would be cumulatively considerable. Consequently, exceedances of the project-level thresholds would be cumulatively considerable. As discussed in Impact AQ-2b, Project operational emissions of NO_X are expected to exceed BAAQMD's quantitative thresholds but would be mitigated to a level below the threshold with implementation of Mitigation Measure AQ-2.2, which would require the Project Sponsor to offset NO_X emissions. The demolition of Buildings 307–309 would not involve an operational component, so, unlike the assessment of cumulative construction emissions, the assessment of cumulative operational emissions looks only at the Project's emissions. Because Project operational emissions would not exceed the BAAQMD project- or cumulative-level thresholds with mitigation, this cumulative impact would be ***less than significant with mitigation***.

Impact C-AQ-3a: Cumulative Health Risks during Construction. Cumulative development in the Project vicinity would expose existing sensitive receptors to substantial pollutant concentrations during construction. (LTS)

Consistent with BAAQMD's CEQA Guidelines, cumulative exposure to TACs was evaluated by examining the exposure of surrounding sensitive receptors to the cumulative effect of existing, Project construction, and reasonably foreseeable future sources of TAC emissions.

There are multiple cumulative TAC emission sources that would be within 1,000 feet of sensitive receptors including the following:

- **Existing sources**: There are multiple existing stationary and roadway sources within 1,000 feet of the Project that generate TACs. Google Earth map files and distance multipliers provided by BAAQMD[44] were used to estimate excess impacts for existing stationary and roadway sources.
- **Project sources**: The Project would contribute TAC emissions during construction. The methods used to estimate Project TAC emissions are described above in the assessment of Project-level impacts.

[44] Bay Area Air Quality Management District. No date. Tools and Methodologies. Available: <http://www.baaqmd.gov/plans-and-climate/california-environmental-quality-act-ceqa/ceqa-tools>. Accessed: February 10, 2016.

- **Cumulative land use development**: As discussed above, demolition of Buildings 307–309 would be considered a reasonably foreseeable project that would occur at the same location as the Project site. To ensure that a comprehensive assessment of Project-related activities are accounted for in the analysis, the health risks associated with demolition of Buildings 307–309 have been calculated. No other development has been specifically assessed as part of the cumulative analysis. The demolition activities would occur within the same year as the Project and thus, the hazard index, cancer risk, and PM2.5 exposure from these activities in conjunction with the Project are assessed and presented.

The existing setting, the Project, and cumulative TAC sources could contribute to a cumulative health risk to sensitive receptors in the vicinity of the Project site. The results of the cumulative impact assessment are summarized in Table 3.4-12. Individual source contributions are provided in Appendix 3.4.

Table 3.4-12. Cumulative Toxic Air Contaminant Health Risks[a]

Parcel	Non-Cancer Hazard Index	Increased Cancer Risk (per million)	PM2.5 Exposure (μg/m³)
Contribution from Existing Sources			
Residential	0.03	24.8	0.27
Schools	0.08	80.7	0.77
Recreational	0.03	24.8	0.27
Contribution from Project Construction and Demolition of Buildings 307–309			
Residential	0.007	8.4	0.03
Schools	0.004	0.5	0.02
Recreational	0.003	0.2	0.01
Cumulative Totals			
Residential	0.037	33.2	0.30
Schools	0.084	81.2	0.79
Recreational	0.033	25.0	0.28
BAAQMD Thresholds	10.0	100.0	0.8

Notes:

[a] These health risks are based on mitigated emissions. Onsite dust emissions were assumed to be reduced by 88.3 percent, per BAAQMD BMPs. The BMPs would not affect offsite dust emissions, however.

μg/m³ = micrograms per cubic meter.

As shown in Table 3.4-12, cumulative hazard index, cancer risk, and PM2.5 concentrations at residential, school, and recreational receptors would not exceed BAAQMD thresholds. For the school receptor, the PM2.5 concentration (0.79 μg/m^3) would come close to the BAAQMD threshold but would not exceed it. The vast majority of the PM2.5 concentration contribution at the school receptor is from existing sources (namely, US 101). Project construction and demolition of Buildings 307–309 would contribute less than 2 percent to the PM2.5 concentration at the school receptor. The hazard index and cancer risk at the school receptor would be below the applicable thresholds by a wider margin. At recreational and residential receptors, the primary existing sources are Bayfront Expressway and US 101. At these receptors, hazard index, cancer risk, and PM2.5 concentrations would be below the applicable BAAQMD thresholds by a substantial margin. This is considered a ***less-than-significant*** cumulative impact because the Project, in conjunction with other development in the vicinity, would not result in a cumulatively significant hazard index, cancer risk, or PM2.5 concentration.

Impact C-AQ-3b: Cumulative Health Risks during Operation. Cumulative development in the Project vicinity would not expose existing sensitive receptors to substantial pollutant concentrations during operation. (LTS)

Toxic Air Contaminants

As discussed under Impact AQ-4b, the Project would not involve generators that contribute maximum cancer risks in excess of BAAQMD's threshold of 10 in one million or an appreciable amount of diesel vehicles. Thus, Project operation would not result in cumulatively considerable increases of the non-cancer HI, cancer risk, or annual PM 2.5 concentrations. The cumulative impact on health risks at sensitive receptors within 1,000 feet of the Project site is, therefore, ***less than significant***.

Carbon Monoxide Hot-Spots

Cumulative growth in the city could lead to increased local CO concentrations from vehicular traffic. As discussed above under Impact AQ-4b, maximum cumulative peak hour traffic (that is, traffic generated by the Project and other development in the area) would be less than 31,400 vehicles per hour at the highest-volume intersection (Oak Avenue and Sand Hill Road) for all "with Project" scenarios. Thus, traffic volumes in 2020 and 2040 would be below the 44,000 vehicle per hour screening threshold at the highest volume intersection by a substantial amount (almost 30 percent). The 44,000 vehicle per hour threshold applies, because the intersection of Oak Avenue and Sand Hill Road is not an example of an intersection where vertical or horizontal mixing is limited. Intersection volumes at all other intersections would be below 24,000, so there would not be any exceedances of either the limited vertical/horizontal mixing threshold (24,000 vehicles per hour), or the non-limited mixing threshold (44,000 vehicles per hour). Thus, the Project's cumulative impact on local CO concentrations is ***less than significant***.

3.5 Greenhouse Gas Emissions

Introduction

This section describes the affected environment and regulatory setting for greenhouse gas (GHG) emissions and climate change. It also describes the GHG and climate change impacts that would result from implementation of the Project and provides mitigation measures to reduce such impacts, where applicable. Cumulative impacts are discussed at the end of this section. Additional information on GHG emissions and the technical data used to prepare this section is provided in Appendix 3.4.

No comments related to GHG emissions were received in response to the Notice of Preparation (NOP) (Appendix 1).

Existing Conditions

This section provides a discussion of global climate change and GHG emissions as they relate to the Project.

The unique chemical properties of GHGs enable them to become well mixed within the atmosphere and transported over long distances. Consequently, unlike other resource areas that are concerned primarily with localized Project impacts (e.g., within 1,000 feet of the Project site), the global nature of climate change requires a broader approach to analysis. Although this section focuses on GHG emissions generated at the Project site as a result of construction and operation, the analysis considers potential regional and global GHG impacts.

Regulatory Setting

Federal

Climate change is widely recognized as an imminent threat to the global climate, economy, and population. The U.S. Environmental Protection Agency (EPA) acknowledged potential threats posed by climate change in a Cause or Contribute Finding, which found that GHG emissions from new motor vehicles contribute to pollution and threaten public health and welfare. This finding was necessary prior to EPA action to adopt new vehicle emissions standards to reduce GHG emissions. Federal climate change regulation under the federal Clean Air Act (CAA) is also currently under development for both existing and new sources. Standards for carbon dioxide (CO_2) emissions from new fossil-fuel electric power plants are proposed by EPA and outlined in President Obama's 2013 Climate Action Plan (CAP). Federal vehicle emission standards have been established that take into account the need for GHG emissions reductions. Despite these actions, there is still no comprehensive overarching federal law related specifically to the reduction of GHG emissions.

Corporate Average Fuel Economy Standards (2010–2012). The current Corporate Average Fuel Economy (CAFE) standards that went into effect in 2012 for vehicles incorporated stricter fuel economy standards, equivalent to those previously promulgated by the State of California (see the Assembly Bill 1493 discussion below), into one uniform federal standard. The changes are expected to reduce GHG emissions from new vehicles by roughly 25 percent, relative to business-as-usual (BAU) conditions, by 2016.

In October 2012, EPA and the National Highway Traffic Safety Administration (NHSTA) established the final rule for fleet-wide passenger cars and light trucks, model years 2017 to 2025. The new CAFE standards were aimed at achieving an emissions rating of 163 grams of CO_2 per mile, or the equivalent of 54.5 miles per gallon (mpg), by model year 2025. Fleet-wide fuel economy standards will become more stringent with each subsequent model year through 2025. Because of a statute that requires NHSTA to set average fuel economy standards five model years at a time, NHSTA requires model years 2017 to 2022 to have an industry fleet-wide average of 40.3 to 41.0 mpg and estimates that 2025 vehicles will be in the range of 48.7 to 49.7 mpg.[1]

EPA Endangerment and Cause and Contribute Findings (2009). On December 7, 2009, under Section 202(a) of the CAA, EPA signed the Endangerment and Cause or Contribute Findings for GHGs. Under the Endangerment Finding, EPA finds that current and projected concentrations of six key well-mixed GHGs—CO_2, methane (CH_4), nitrous oxide (N_2O), perfluorocarbons (PFCs), sulfur hexafluoride (SF_6), and hydrofluorocarbons (HFCs)—in the atmosphere threaten public health and the welfare of current and future generations. Under the Cause or Contribute Finding, EPA finds that the combined emissions of these well-mixed GHGs from new motor vehicles and new motor vehicle engines contribute to the GHG pollution that threatens public health and welfare.

These findings do not impose any requirements on industry or other entities. However, these actions are a prerequisite to finalizing EPA's new CAFE standards for light-duty vehicles, which EPA proposed in a joint proposal that included the U.S. Department of Transportation's CAFE standards (see above).

EPA Regulation of GHG Emissions under the CAA (2010–2012 [ongoing]). Under the authority of the CAA, EPA is beginning to regulate GHG emissions, starting with large stationary sources. In 2010, EPA set GHG thresholds to define when permits under the New Source Review Prevention of Significant Deterioration (PSD) and Title V Operating Permit programs are required for new and existing industrial facilities. In 2012, EPA proposed a carbon pollution standard for new power plants.

State

California has adopted statewide legislation to address various aspects of climate change and GHG mitigation. Much of this establishes a broad framework for the state's long-term GHG reduction and climate change adaptation program. The former and current governors of California have issued several Executive Orders (EOs) related to the state's evolving climate change policy. Summaries of key policies, EOs, regulations, and legislation at the state level that are relevant to the Project are provided below.

Executive Order S-3-05 (2005). EO S-3-05 asserted that California is vulnerable to the effects of climate change. To combat this concern, the order established the following GHG emissions reduction targets:

- By 2010, reduce GHG emissions to 2000 levels
- By 2020, reduce GHG emissions to 1990 levels
- By 2050, reduce GHG emissions to 80 percent below 1990 levels

[1] U.S. Environmental Protection Agency. 2012. *Federal Register.* Vol. 77. No. 199. October 15, 2012. Rules and Regulations: 62627. Available: <http://www.nhtsa.gov/staticfiles/rulemaking/pdf/cafe/2017-25_CAFE_Final_Rule.pdf>. Accessed: February 8, 2016.

Executive Orders are legally binding only on state agencies. Accordingly, EO S-3-05 guides state agencies' efforts to control and regulate GHG emissions but has no direct binding effect on local government or private actions. The secretary of the California Environmental Protection Agency (CalEPA) is required to report to the governor and state legislature biannually regarding the impacts of global warming on California, mitigation and adaptation plans, and progress made toward reducing GHG emissions to meet the targets established in this EO.

Assembly Bill 1493—Pavley Rules (2002, Amendments 2009)/Advanced Clean Cars (2011). Known as "Pavley I," the Assembly Bill (AB) 1493 standards were the nation's first GHG standards for automobiles. AB 1493 required the California Air Resources Board (ARB) to adopt vehicle standards that would lower GHG emissions from new light-duty automobiles to the maximum extent feasible beginning in 2009. Additional strengthening of the Pavley standards (referred to previously as "Pavley II," now referred to as the "Advanced Clear Cars" measure) has been proposed for vehicles built during model years 2017 through 2020. Together, the two standards are expected to increase average fuel economy to roughly 43 mpg by 2020 and reduce GHG emissions from the transportation sector in California by approximately 14 percent. In June 2009, EPA granted California's waiver request, enabling the state to enforce its GHG emissions standards for new motor vehicles, beginning with the current model year.

EPA and ARB are currently working together on a joint rulemaking effort to establish GHG emissions standards for passenger vehicles built during the 2017 to 2025 model years. The Interim Joint Technical Assessment Report evaluated four potential future standards that ranged from 47 to 62 mpg by 2025.[2] The official proposal was released by both EPA and ARB on December 7, 2011, and unanimously approved by ARB on January 26, 2012.[3]

Renewable Energy Standard/Renewable Portfolio Standard (2002/2006/2011). Senate Bill (SB) 1078 (2002) and SB 107 (2006) created the Renewable Energy Standard (RES) program, which required electric companies to increase their procurement of eligible renewable energy resources by at least 1 percent of their retail sales annually, until reaching 20 percent by 2010. SB 2X 1 (2011) required a Renewable Portfolio Standard (RPS, functionally the same thing as the RES) of 33 percent by 2020.

Assembly Bill 32, California Global Warming Solutions Act (2006). The Global Warming Solutions Act of 2006 sets the same overall GHG emissions reduction goals outlined in EO S-3-05 while further mandating that ARB create a plan that includes market mechanisms and implement rules to achieve "real, quantifiable, cost-effective reductions of greenhouse gases." EO S-20-06 further directs state agencies to begin implementing AB 32, including the recommendations made by the state's Climate Action Team.

Executive Order S-01-07, Low-Carbon Fuel Standard (2007). Governor Schwarzenegger set forth the low-carbon fuel standard for California. Under this executive order, the carbon intensity of California's transportation fuels is to be reduced by at least 10 percent by 2020.

Senate Bill 375—Sustainable Communities Strategy (2008). SB 375 provides for a new regional planning process that coordinates land use planning, regional transportation plans, and transportation funding priorities to help California meet the GHG reduction goals established in AB 32. SB 375 requires

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[2] U.S. Environmental Protection Agency. et. al. 2010. *Interim Joint Technical Assessment Report: Light-Duty Vehicle Greenhouse Gas Emission Standards and Corporate Average Fuel Economy Standards for Model Years 2017–2025.* Available: <http://www.epa.gov/oms/climate/regulations/ldv-ghg-tar.pdf>. Accessed: February 8, 2016.

[3] California Air Resources Board. 2012. *News Release – California Air Resources Board Approves Advanced Clean Car Rules*. Release #12-05. January 27, 2012. Available: <http://www.arb.ca.gov/newsrel/newsrelease.php?id=282>. Accessed: February 8, 2016.

metropolitan planning organizations to incorporate a "sustainable communities strategy" (SCS) in their Regional Transportation Plans. The goal of the SCS is to reduce regional vehicle miles traveled (VMT) through land use planning and consequent transportation patterns in combination with the Regional Transportation Plan that provide for needed transportation investments, including transit. The Metropolitan Transportation Commission and Association of Bay Area Governments adopted the Sustainable Communities Strategy and the 2040 Regional Transportation Plan, titled *Plan Bay Area*, in July 2013. The Metropolitan Transportation Commission is currently working on a strategic update to the SCS, called *Plan Bay Area 2040*, which builds on prior work to develop an efficient transportation network, provide more housing choices, and grow the region in a financially and environmentally responsible way. *Plan Bay Area* expressly states that it does not require any changes to local land use policies or environmental review processes.[4]

Plan Bay Area consistency is discussed in Section 3.1, *Land Use and Planning*, but is not discussed further in this section.

California Green Building Standards Code—Title 24, Part 11 (2010). In January 2010, the California Building Standards Commission adopted the statewide mandatory Green Building Standards Code (CALGreen [California Code of Regulations (CCR), Title 24, Part 11]). CALGreen applies to the planning, design, operation, construction, use, and occupancy of every newly constructed building or structure.

CALGreen requires the installation of energy- and water-efficient indoor infrastructure for all new projects beginning after January 1, 2011. CALGreen also requires builders to develop a waste management plan for newly constructed buildings and divert at least 50 percent of the construction materials generated during project construction (CALGreen Sections 4.408 and 5.408).

The CEC adopted the 2013 Building Energy Efficiency Standards contained in the CCR, Title 24, Part 6 (also known as the California Energy Code), and associated administrative regulations in CALGreen Part 11, which took effect on January 1, 2014. The 2013 Building Energy Efficiency Standards call for building materials that are 25 percent more efficient than previous materials for residential construction. Part 11 also established voluntary standards, including standards related to the planning and design for sustainable site development, energy efficiency (in excess of the California Energy Code requirements), water conservation, material conservation, and internal air contaminants. Under these standards, builders can specify windows, insulation, lighting, ventilation systems, and other features that reduce energy consumption in homes and businesses.

The next set of energy efficiency standards will be the 2016 Building Energy Efficiency Standards, which are currently going through the rule-making process. These are expected to be adopted in 2016 and take effect on January 1, 2017. According to the CEC, single-family homes built to the 2016 standards will use about 28 percent less energy for lighting, heating, cooling, ventilation, and water heating than those built to the 2013 standards.

In 2008, California set energy-use reduction goals, targeting zero net energy (ZNE) use in all new homes by 2020 and commercial buildings by 2030. The ZNE goal means new buildings must use a combination of improved efficiency and distributed renewable energy generation to meet 100 percent of their annual energy need. The proposed draft 2016 standards do not require ZNE. However, they will make important steps toward further changing residential building practices in California. The 2019 standards

[4] Metropolitan Transportation Commission. 2013. *Plan Bay Area: Strategy for a Sustainable Region*. Metropolitan Transportation Agency and Association of Bay Area Governments. Adopted: July 18, 2013. Available: <http://files.mtc.ca.gov/pdf/Plan_Bay_Area_FINAL/Plan_Bay_Area.pdf>. Accessed: October 16, 2015.

are expected to take the final step toward achieving ZNE for newly constructed residential buildings throughout California. Later standards are expected to require ZNE for newly constructed commercial buildings.

State CEQA Guidelines. The California Environmental Quality Act (CEQA) Guidelines require lead agencies to describe, calculate, or estimate the amount of GHG emissions that would result from a project. Moreover, the guidelines emphasize the necessity to determine potential climate change effects of a project and propose mitigation as necessary. They also confirm the discretion of lead agencies to determine appropriate significance thresholds but require the preparation of an environmental impact report (EIR) if "there is substantial evidence that the possible effects of a particular project are still cumulatively considerable notwithstanding compliance with adopted regulations or requirements" (Section 15064.4).

State CEQA Guidelines Section 15126.4 includes considerations for lead agencies related to feasible mitigation measures to reduce GHG emissions, which may include, among other items, measures in an existing plan or mitigation program for the reduction of emissions, required as part of the lead agency's decision; implementation of project features, designs, or other measures to substantially reduce energy consumption or GHG emissions; off-site measures, including offsets that are not otherwise required, to mitigate a project's emissions; and measures that sequester carbon or carbon-equivalent emissions.

GHG Cap-and-Trade Program (2010/2011). On October 20, 2011, ARB adopted the final cap-and-trade program for California. The California cap-and-trade program is a market-based system with an overall emissions limit for affected sectors. Examples of affected entities include CO_2 suppliers, in-state electricity generators, hydrogen producers, petroleum refiners, and other large-scale manufacturers and fuel suppliers. The cap-and-trade program is currently regulating more than 85 percent of California's emissions. Compliance requirements took effect according to the following schedule: (1) electricity generation and large industrial sources in 2012 and (2) fuel combustion and transportation sources in 2015. Cap-and-trade allowance auction proceeds are used to fund a variety of investments. The first 3-year investment plan prioritizes (1) sustainable communities and clean transportation, including low-carbon freight equipment, with specific emphasis on efforts that would be beneficial for disadvantaged communities located near ports, railyards, freeways, and distribution centers; (2) energy efficiency and clean energy; and (3) natural resources and waste diversion.[5] The second 3-year plan (fiscal years 2016/2017 through 2018/2019), submitted to the legislature in January 2016, complements the first investment plan while focusing on investments that will lead to a range of co-benefits in the areas of public health, water quality and supply, and habitat protection.[6]

Executive Order B-30-15, Brown (2015). EO B-30-15 established a medium-term goal for 2030 of reducing GHG emissions to 40 percent below 1990 levels. It also required ARB to update its current AB 32 Scoping Plan to identify measures to meet the 2030 target. The executive order supports EO S-3-05, described above, but currently is binding only on state agencies.

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[5] California Air Resources Board. 2013. *Cap-and-Trade Auction Proceeds Investment Plan: Fiscal Years 2013–2014 through 2015–2016.* Available: <http://www.arb.ca.gov/cc/capandtrade/auctionproceeds/ final_investment_plan.pdf >. Accessed: February 9, 2016.

[6] California Air Resources Board. 2016. *Cap-and-Trade Auction Proceeds Second Investment Plan: Fiscal Years 2016–2017 through 2018–2019.* Available: <http://www.arb.ca.gov/cc/capandtrade/auctionproceeds/16-17-final-second-investment-planii.pdf>. Accessed: February 9, 2016.

Local

Bay Area Air Quality Management District. The **Bay Area Air Quality Management District's** (BAAQMD's) 2011 *CEQA Guidelines*[7] outline advisory thresholds for stationary-source and land use development projects. The mass emissions threshold for stationary-source projects is 10,000 metric tons (MT) of carbon dioxide equivalent (CO_2e) per year. For land use development projects, the guidelines establish three potential analysis criteria for determining project significance: compliance with a qualified CAP, a mass emissions threshold of 1,100 MT CO_2e, and a GHG efficiency threshold of 4.6 MT CO_2e per service population (project jobs + projected residents).

The guidelines do not identify a GHG emissions threshold for construction-related emissions. However, BAAQMD recommends that GHG emissions from construction be quantified and disclosed and that a determination regarding the significance of the GHG emissions be made with respect to whether a project is consistent with AB 32 GHG emissions reduction goals. BAAQMD further recommends that best management practices (BMPs) be incorporated to reduce GHG emissions during construction, as feasible and applicable. BMPs may include, but are not limited to, using alternative-fuel (e.g., biodiesel, electric) construction vehicles/equipment (at least 15 percent of the fleet), using building materials that are at least 10 percent local, and recycling or reusing at least 50 percent of construction waste or demolition materials.

Menlo Park Climate Action Plan. The City of Menlo Park (City) CAP (adopted annually)[8] proposes local emissions reduction strategies to help meet AB 32 targets. The CAP provides the emissions inventory for 2005 to 2013, the emissions forecast for 2020, a reduction goal for 2020, and a recommendation for GHG reduction strategies. Given the emissions inventory and forecast for 2020, the City adopted a GHG emissions reduction target in June 2013 of 27 percent below 2005 levels by 2020 to meet the goals of AB 32. The CAP recommends various community and municipal strategies for near-term and mid-term consideration. The emissions reduction strategies are generally focused on community actions because more than 99 percent of the emissions are from community sources.

In October 2015, the City released an updated CAP with emissions for the years between 2005 and 2013, provided an update on the progress of the projects selected in the previous CAP update, and provided a list of CAP projects for fiscal years 2015/2016 through 2019/2020. Included in the near-term projects are projects that a) incorporate CAP strategies and GHG emissions reductions into the general plan update; b) incorporate ZNE and Leadership in Energy and Environmental Design (LEED) Silver requirements into planning requirements and building codes to increase efficiency in new buildings; c) implement an Energy Star ratings requirement, or other performance tracking methodology, into planning requirements for new buildings; d) consider developing an energy-efficient/renewable energy plan for the commercial and residential sector to re-invigorate energy upgrades for existing buildings; e) consider resiliency strategies for protecting Menlo Park land in the projected sea-level rise zone.

CEQA authorizes reliance on a previously approved GHG emissions reduction plan (i.e., a CAP) that was prepared as a Plan for the Reduction of Greenhouse Gas Emissions, per Section 15183.5 of the CEQA Guidelines. This section of the guidelines establishes opportunities for CEQA tiering when projects are consistent with adopted GHG emissions reduction plans, their impacts can be considered less than significant, and their contributions to cumulative emissions are not cumulatively considerable, provided the GHG emissions reduction plans meet certain criteria established under Section 15183.5.

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[7] Bay Area Air Quality Management District. 2011. *California Environmental Quality Act Air Quality Guidelines*. May. San Francisco, CA. As noted in Section 3.4, *Air Quality*, BAAQMD currently does not recommend using the May 2011 guidelines; however, the 2011 guidelines include substantial evidence that supports the impact assessment methodology and significance thresholds contained therein. Thus, the 2011 guidelines are used for this EIR.

[8] City of Menlo Park. 2009. *Climate Change Action Plan*. Available: <http://www.menlopark.org/305/Climate-Action-Plan>. Accessed: January 2016.

The City's CAP does not meet these tiering requirements because the CAP does not include specific thresholds of significance for determining the significance of GHG emissions, nor has the CAP been adopted in a public process following environmental review. Consequently, because the City's CAP does not satisfy the tiering requirements of CEQA established in Section 15183.5 of the State CEQA Guidelines, it is not used to determine the significance of Project-related GHG emissions, as described below. However, for informational purposes, this analysis compares the Project against measures found in the City's CAP.

Menlo Park General Plan. The general plan guides development and use of land within the city. Several goals and policies of the Land Use and Circulation Element of the general plan apply broadly to GHG emissions, as follows.

> **Goal I-H:** To promote the development and maintenance of adequate public and quasi-public facilities and services to meet the needs of Menlo Park's residents, businesses, workers, and visitors.
>
> *Policy I-H-2:* The use of water-conserving plumbing fixtures in all new public and private development shall be required.
>
> *Policy I-H-3:* Plant material selection and landscape and irrigation design for City parks and other public facilities and in private developments shall adhere to the City's Water Efficient Landscape Ordinance.
>
> *Policy I-H-7:* The use of reclaimed water for landscaping and any other feasible uses shall be encouraged.
>
> *Policy I-H-12:* Street orientation, placement of buildings, and use of shading should contribute to the energy efficiency of the community.
>
> **Goal II-B:** To promote the use of public transportation.
>
> *Policy II-B-1:* The City shall consider transit modes in the design of transportation improvements and the review and approval of development projects.
>
> *Policy II-B-3:* The City shall promote improved public transit service and increased transit ridership, especially to office and industrial areas and schools.
>
> **Goal II-C:** To promote the use of alternatives to the single-occupant automobile.
>
> *Policy II-C-1:* The City shall work with all Menlo Park employers to encourage employees to use alternatives to the single-occupancy automobile in their commute to work.
>
> **Goal II-D:** To promote the safe use of bicycles as a commute alternative and for recreation.
>
> *Policy II-D-3:* The design of streets within Menlo Park shall consider the impact of street cross sections, intersection geometrics, and traffic control devices on bicyclists.
>
> *Policy II-D-4:* The City shall require new commercial and industrial development to provide secure bicycle storage facilities onsite.

The following policies from the Open Space and Conservation Element of the City's General Plan pertain to the Project.

> **Goal OSC4:** Promote Sustainability and Climate Action Planning.
>
> *Policy OSC4.1:* Sustainable Approach to Land Use Planning to Reduce Resource Consumption. Encourage, to the extent feasible (1) a balance and match between jobs and housing, (2) higher density residential and mixed-use development to be located adjacent to commercial centers and transit corridors, and (3) retail and office areas to be located within walking and biking distance of transit or existing and proposed residential developments.
>
> *Policy OSC4.2:* Sustainable Building. Promote and/or establish environmentally sustainable building practices or standards in new development that would conserve water and energy, prevent stormwater pollution, reduce landfilled waste, and reduce fossil fuel consumption from transportation and energy activities.

*Policy OSC4.*3: Renewable Energy. Promote the installation of renewable energy technology, such as on residences and businesses, through education, social marketing methods, establishing standards, and/or provide incentives.

Policy OSC4.4: Vehicles Using Alternative Fuel. Explore the potential for installing infrastructure for vehicles that use alternative fuel, such as electric plug-in recharging stations.

*Policy OSC4.*5: Energy Standards in Residential and Commercial Construction. Encourage projects to achieve a high level of energy conservation, exceeding standards set forth in the California Energy Code for Residential and Commercial development.

Policy OSC4.6: Waste Reduction Target. Strive to meet the California State Integrated Waste Management Board per-person target of waste generation per person per day through their source reduction, reuse, and recycling programs.

ConnectMenlo General Plan Update. The City General Plan (Land Use and Circulation Elements) and M-2 Area Zoning Update, also known as ConnectMenlo, is under way. Although not yet adopted, the following draft goals and policies in ConnectMenlo pertain to the Project and are identified for informational purposes.

Goal LU-7: Promote the implementation and maintenance of sustainable development, facilities and services to meet the needs of Menlo Park's residents, businesses, workers, and visitors.

Policy LU-7.1: Sustainability. Promote sustainable site planning, development, landscaping, and operational practices that conserve resources and minimize waste.

Policy LU-7.5: Reclaimed Water Use. Implement use of adequately treated "reclaimed" water (recycled/nonpotable water sources such as, graywater, blackwater, rainwater, stormwater, foundation drainage, etc.) through dual plumbing systems for outdoor and indoor uses, as feasible.

Policy LU-7.9: Green Building. Support sustainability and green building best practices through the orientation, design, and placement of buildings and facilities to optimize their energy efficiency in preparation of state zero-net energy requirements for residential construction in 2020 and commercial construction in 2030.

Program LU-7.A.: Green Building Operation and Maintenance. Employ green building and operation and maintenance best practices, including increased energy efficiency and the use of renewable energy and reclaimed water, and install drought-tolerant landscaping for all projects.

Goal CIRC-3: Increase mobility options to reduce traffic congestion, greenhouse gas emissions, and commute travel time.

Policy CIRC-3.1: Vehicle Miles Traveled. Support development and transportation improvements that help reduce per capita vehicle miles traveled.

Policy CIRC-4.1: Global Greenhouse Gas Emissions. Encourage the safer and more widespread use of nearly zero-emission modes, such as walking and biking, and lower emission modes, such as transit, to reduce greenhouse gas emissions.

Policy CIRC-5.1: Transit Service and Ridership. Promote improved public transit service and increased transit ridership, especially to employment centers, commercial destinations, schools, and public facilities.

Environmental Setting

Overview of Climate Change

The phenomenon known as the *greenhouse effect* keeps the atmosphere near the earth's surface warm enough for the successful habitation of humans and other life forms. GHGs in the lower atmosphere play a critical role in maintaining temperature and trap some of the long-wave infrared radiation emitted

from the earth's surface that would otherwise escape to space. According to AB 32, California's Global Warming Solutions Act, GHGs encompass the following gases: CO_2, CH_4, N_2O, PFCs, SF_6, and HFCs. State CEQA Guidelines (Section 15364.5) also identify these six gases as GHGs.

Visible sunlight passes through the atmosphere without being absorbed. Some of the sunlight striking the earth is absorbed and converted to heat, which warms the surface. The surface emits infrared radiation to the atmosphere where some of it is absorbed by GHGs and re-emitted toward the surface; some of the heat is not trapped by GHGs and escapes into space. Human activities that emit additional GHGs to the atmosphere increase the amount of infrared radiation that gets absorbed before escaping into space, thus enhancing the greenhouse effect and amplifying the warming of the earth.[9]

Increases in fossil fuel combustion and deforestation have exponentially increased concentrations of GHGs in the atmosphere since the Industrial Revolution. Rising atmospheric concentrations of GHGs in excess of natural levels enhance the greenhouse effect, which contributes to global warming of the earth's lower atmosphere and induces large-scale changes in ocean circulation patterns, precipitation patterns, global ice cover, biological distributions, and other changes to the earth's system. This is collectively referred to as *climate change*.

The Intergovernmental Panel on Climate Change (IPCC) has been established by the World Meteorological Organization and United Nations Environment Programme to assess scientific, technical, and socioeconomic information relevant to the understanding of climate change, its potential impacts, and options for adaptation and mitigation. The IPCC estimates that average increases in global temperatures between 2000 and 2100 could range from 1.1° Celsius, with no increase in GHG emissions above 2000 levels, to 6.4° Celsius, with a substantial increase in GHG emissions.[10] Large increases in global temperatures could have substantial adverse effects on natural and human environments in California and on the rest of the planet.

Principal Greenhouse Gases

The primary GHGs include CO_2, CH_4, N_2O, HFCs, and SF_6, as defined by California law; the State CEQA Guidelines contain a similar definition of GHGs (Health and Safety Code 38505(g); CCR, Title 14, Section 15364.5). Because the construction and operation of office and hotel land uses generate primarily CO_2, CH_4, N_2O, the following discussion focuses on these pollutants.

To simplify reporting and analysis, methods have been set forth to describe emissions of GHGs in terms of a single gas. The most commonly accepted method to compare GHG emissions is the global warming potential (GWP) methodology defined in the IPCC Fourth Assessment Report (AR4) reference documents.[11] Note that ARB is currently transitioning from the GWP values within the Second

[9] Center for Climate and Energy Solutions. 2011. *The Greenhouse Effect*. Available: <http://www.c2es.org/facts-figures/basics/greenhouse-effect>. Accessed: January 2016.

[10] Intergovernmental Panel on Climate Change. 2007. Introduction. In B. Metz, O. R. Davidson, P. R. Bosch, R. Dave, L. A. Meyer, (eds.), *Contribution of Working Group III to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change, 2007*. Cambridge, UK, and New York, NY: Cambridge University Press. Available: <http://www.ipcc.ch/pdf/assessment-report/ar4/wg3/ar4-wg3-chapter1.pdf>. Accessed: January 2016.

[11] Intergovernmental Panel on Climate Change. 2007. *Climate Change 2007: The Physical Science Basis. Contribution of Working Group I to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change*. Solomon, S., D. Qin, M. Manning, Z. Chen, M. Marquis, K. B. Averyt, M. Tignor and H. L. Miller (eds.). Available: <http://www.ipcc.ch/ipccreports/ar4-wg1.htm>. Accessed: January 2016.

Assessment Report[12] to the more recent AR4 GWP values as it develops GHG emissions estimates and potential emissions reductions for the scoping plan update. Therefore, GWP methods from the AR4 are used in the analysis and reported in Table 3.5-1.

The IPCC defines the GWP of various GHG emissions on a normalized scale that recasts all GHG emissions in terms of CO_2e, which compares the gas in question to that of the same mass of CO_2 (CO_2 has a global warming potential of 1 by definition). Table 3.5-1 lists the GWP of CO_2, CH_4, and N_2O; their lifetime; and their abundance in the atmosphere. Each of these gases is described briefly below.

Table 3.5-1. Lifetimes and Global Warming Potentials of Several Greenhouse Gases

Greenhouse Gases	Global Warming Potential (100 years)	Lifetime (years)	2014 Atmospheric Abundance
CO_2 (ppm)	1	50–200	394[a]
CH_4 (ppb)	25	9–15	1,893
N_2O (ppb)	298	121	326

Sources:

Myhre, G., D. Shindell, F. M. Bréon, W. Collins, J. Fuglestvedt, J. Huang, D. Koch, J. F. Lamarque, D. Lee, B. Mendoza, T. Nakajima, A. Robock, G. Stephens, T. Takemura, and H. Zhang. 2013. Anthropogenic and Natural Radiative Forcing. In: *Climate Change 2013: The Physical Science Basis*. Contribution of Working Group I to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change. Stocker, T. F., D. Qin, G. K. Plattner, M. Tignor, S. K. Allen, J. Boschung, A. Nauels, Y. Xia, V. Bex, and P. M. Midgley (eds.). Cambridge, UK, and New York, NY: Cambridge University Press, pp. 659–740.

Blasing, T. J. 2014. *Recent Greenhouse Gas Concentrations*. DOI: 10.3334/CDIAC/atg.032. Updated: February. Available: <http://cdiac.ornl.gov/pns/current_ghg.html>. Accessed: October 16, 2015.

National Oceanic and Atmospheric Administration. 2016. *Earth System Research Laboratory Up-to-Date Weekly Average CO_2 at Mauna Loa*. Available: <http://www.esrl.noaa.gov/gmd/ccgg/trends/weekly.html>. Accessed: January 13, 2016.

Notes:

[a.] 394 ppm is the 2016 abundance measured at Mauna Loa as of January 3, 2016.

ppm = parts per million by volume.

ppb = parts per billion by volume.

Carbon Dioxide. CO_2 is the most important anthropogenic GHG and accounts for more than 75 percent of all GHG emissions caused by humans. Its atmospheric lifetime of 50 to 200 years ensures that atmospheric concentrations of CO_2 will remain elevated for decades, even after mitigation efforts to reduce GHG concentrations are promulgated.[13] The primary sources of anthropogenic CO_2 in the atmosphere include the burning of fossil fuels (including fuels burned in motor vehicles), gas flaring, cement production, and land use changes (e.g., deforestation, oxidation of elemental

[12] Intergovernmental Panel on Climate Change. 1996. *1995: Science of Climate Change*. Second Assessment Report. Cambridge, UK: Cambridge University Press.

[13] Intergovernmental Panel on Climate Change. 2007. Introduction. In B. Metz, O. R. Davidson, P. R. Bosch, R. Dave, L. A. Meyer, (eds.), *Contribution of Working Group III to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change, 2007*. Cambridge, UK, and New York, NY: Cambridge University Press. Available: <http://www.ipcc.ch/pdf/assessment-report/ar4/wg3/ar4-wg3-chapter1.pdf>. Accessed: January 2016.

carbon). CO_2 can also be removed from the atmosphere by photosynthetic organisms. Atmospheric CO_2 has increased from a pre-industrial concentration of 280 parts per million (ppm) to 394 ppm.[14,15]

Methane. CH_4, the main component of natural gas, is the second most abundant GHG and has a GWP of 25.[16] Sources of anthropogenic emissions of CH_4 include rice production, cattle ranching, natural gas usage, landfill outgassing, and coal mining.[17] Certain land uses function as both a source and a sink for CH_4. For example, wetlands are a terrestrial source of CH_4, whereas undisturbed aerobic soils act as a CH_4 sink (i.e., they remove CH_4 from the atmosphere). Atmospheric CH_4 has increased from a pre-industrial concentration of 715 parts per billion (ppb) to 1,893 ppb.[18,19]

Nitrous Oxide. N_2O is a powerful GHG, with a GWP of 298.[20] Anthropogenic sources of N_2O include agricultural processes (e.g., fertilizer application), nylon production, fuel-fired power plants, nitric acid production, and vehicle emissions. N_2O also is used in rocket engines and racecars and as an aerosol spray propellant. Natural processes, such as nitrification and denitrification, can also produce N_2O, which can be released to the atmosphere by diffusion. In the United States, more than 70 percent of N_2O emissions are related to agricultural soil management practices, particularly fertilizer application.

N_2O concentrations in the atmosphere have increased 18 percent from pre-industrial levels of 270 ppb to 326 ppb.[21,22]

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[14] National Oceanic and Atmospheric Administration. No date. *Greenhouse Gases*. Available: <http://www.ncdc.noaa.gov/monitoring-references/faq/greenhouse-gases.php>. Accessed: October 16, 2015.

[15] Intergovernmental Panel on Climate Change. 2007. *Climate Change 2007: The Physical Science Basis. Contribution of Working Group I to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change*. Solomon, S., D. Qin, M. Manning, Z. Chen, M. Marquis, K. B. Averyt, M. Tignor and H. L. Miller (eds.). Available: <http://www.ipcc.ch/ipccreports/ar4-wg1.htm>. Accessed: January 2016.

[16] Myhre, G., D. Shindell, F.-M. Bréon, W. Collins, J. Fuglestvedt, J. Huang, D. Koch, J.-F. Lamarque, D. Lee, B. Mendoza, T. Nakajima, A. Robock, G. Stephens, T. Takemura, and H. Zhang. 2013. Anthropogenic and Natural Radiative Forcing. In: *Climate Change 2013: The Physical Science Basis. Contribution of Working Group I to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change*. Stocker, T. F., D. Qin, G.-K. Plattner, M. Tignor, S. K. Allen, J. Boschung, A. Nauels, Y. Xia, V. Bex, and P. M. Midgley (eds.). Cambridge, UK, and New York, NY: Cambridge University Press, pp. 659–740.

[17] Center for Climate and Energy Solutions. 2011. *The Greenhouse Effect*. Available: <http://www.c2es.org/facts-figures/basics/greenhouse-effect>. Accessed: January 2016.

[18] U.S. Environmental Protection Agency. 2011. *Science: High GWP Gases and Climate Change*. Last Revised: February 9, 2011. Available: <http://www.epa.gov/highgwp/scientific.html>. Accessed: October 16, 2015.

[19] Intergovernmental Panel on Climate Change. 2007. *Climate Change 2007: The Physical Science Basis. Contribution of Working Group I to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change*. Solomon, S., D. Qin, M. Manning, Z. Chen, M. Marquis, K. B. Averyt, M. Tignor and H. L. Miller (eds.). Available: <http://www.ipcc.ch/ipccreports/ar4-wg1.htm>. Accessed: January 2016.

[20] Myhre, G., D. Shindell, F.-M. Bréon, W. Collins, J. Fuglestvedt, J. Huang, D. Koch, J. F. Lamarque, D. Lee, B. Mendoza, T. Nakajima, A. Robock, G. Stephens, T. Takemura, and H. Zhang. 2013. *Anthropogenic and Natural Radiative Forcing. In: Climate Change 2013: The Physical Science Basis. Contribution of Working Group I to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change*. Stocker, T. F., D. Qin, G.-K. Plattner, M. Tignor, S. K. Allen, J. Boschung, A. Nauels, Y. Xia, V. Bex, and P. M. Midgley (eds.). Cambridge, UK, and New York, NY: Cambridge University Press,, pp. 659–740.

[21] Carbon Dioxide Information Analysis Center. 2013. *Recent Greenhouse Gas Concentrations*. Last Revised: February 2014. Available: <http://cdiac.ornl.gov/pns/current_ghg.html>. Accessed: February 9, 2016.

[22] Intergovernmental Panel on Climate Change. 2007. *Climate Change 2007: The Physical Science Basis. Contribution of Working Group I to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change*. Solomon, S., D. Qin, M. Manning, Z. Chen, M. Marquis, K. B. Averyt, M. Tignor and H. L. Miller (eds.). Available: <http://www.ipcc.ch/ipccreports/ar4-wg1.htm>. Accessed: January 2016.

Greenhouse Gas Emissions Inventories

A GHG inventory is a quantification of all GHG emissions and sinks[23] within a selected physical and/or economic boundary. GHG inventories can be performed on a large scale (i.e., for global and national entities) or on a small scale (i.e., for a particular building or person). Although many processes that emit GHGs are difficult to evaluate for their emissions potential, several agencies have developed tools to quantify emissions from certain sources.

Table 3.5-2 outlines the most recent global, national, statewide, and local GHG inventories to help contextualize the magnitude of potential Project-related emissions.

Table 3.5-2. Global, National, State, and Local GHG Emissions Inventories

Emissions Inventory	CO_2e (metric tons)
2010 IPCC Global GHG Emissions Inventory	52,000,000,000
2013 EPA National GHG Emissions Inventory	6,673,000,000
2013 ARB State GHG Emissions Inventory	459,300,000
2007 SFBAAB GHG Emissions Inventory	102,550,000
2013 City of Menlo Park GHG Emissions Inventory	360,427

Sources:
Intergovernmental Panel on Climate Change. 2015. *Climate Change 2014: Synthesis Report*. Available: <http://www.ipcc.ch/report/ar5/syr>.
U.S. Environmental Protection Agency. 2015. *Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990–2013: Executive Summary.* Available: <http://www3.epa.gov/climatechange/Downloads/ghgemissions/US-GHG-Inventory-2015-Chapter-Executive-Summary.pdf>. Accessed: October 16, 2015.
California Air Resources Board. 2015. *California Greenhouse Gas Emission Inventory for 2000–2013 – Category as Defined in the 2008 Scoping Plan*. Last Revised: April 24, 2015. Available: <http://www.arb.ca.gov/cc/inventory/data/tables/ghg_inventory_scopingplan_2000-13_20150831.pdf>. Accessed: October 16, 2015.
Bay Area Air Quality Management District. 2010. *Source Inventory of Bay Area Greenhouse Gas Emissions.* Available: <http://hank.baaqmd.gov/pln/documents/regionalinventory2007_003_000_000_000.pdf>. Accessed: October 16, 2015.
City of Menlo Park. 2015. *Climate Action Plan Update and Status Report*. October.
Notes:
CO_2e = carbon dioxide equivalent.
IPCC = Intergovernmental Panel on Climate Change
EPA = U.S. Environmental Protection Agency
ARB = California Air Resources Board
SFBAAB = San Francisco Bay Area Air Basin

Project Site Inventory

Existing development at the Project site consists of 10 buildings with approximately 1.02 million gross square feet of industrial, warehouse, office, and research and development uses. Existing emissions associated with current operations at the TE Connectivity Campus are considered in the discussion below, with the exception of Building 23. Although Building 23 is located on the Project site, its operation is not part of the Project and, therefore, is not included in the analysis.

[23] A greenhouse gas sink is a process, activity, or mechanism that removes a GHG from the atmosphere.

An inventory of the GHG emissions generated by existing uses at the TE Connectivity Campus is provided later in this section in the Existing/Background Conditions portion of Table 3.5-5. GHG emissions were estimated by using the California Emission Estimator Model (CalEEMod), version 2013.2.2. The emissions of individual GHG gases (CO_2, CH_4, and N_2O) were estimated and total CO_2e emissions were calculated by using the GWP for each gas. The inventory includes the following emissions.

- **Area-Source Emissions.** Area-source emissions result from direct emissions sources, including emissions from landscaping equipment. These emissions were estimated using CalEEMod default emission factors and land use assumptions.
- **Emissions Associated with Energy Use.** The generation of electricity through the combustion of fossil fuels typically yields CO_2 and, to a much smaller extent, CH_4 and N_2O. By consuming electricity, existing facilities generate indirect GHG emissions. Electrical power is supplied to the Project site by Pacific Gas and Electric (PG&E). Accordingly, indirect GHG emissions from electricity usage are calculated with the PG&E carbon-intensity factor used by the City of 0.641 pound per kilowatt hour (lb/kWh).[24] The combustion of natural gas onsite for heating and other purposes in buildings generates direct emissions of CO_2 and, to a much smaller extent, CH_4 and N_2O. Information regarding existing electricity and natural gas usage, which was analyzed to estimate GHG emissions from existing facilities, is based on the usage data provided in the Project Energy and Water Analysis[25] by PAE Engineers.
- **Emissions Associated with Water Supply.** GHG emissions are also generated by the infrastructure used to distribute and treat the domestic water supply and the infrastructure used to collect and treat wastewater. By consuming water and generating wastewater, development at the existing site contributes to these emissions. Information regarding emissions associated with existing water demand is provided in the Energy and Water Analysis prepared for the Project.[26]
- **Solid Waste Disposed Emissions.** Fugitive CH_4 emissions associated with solid waste management have been estimated for use in this analysis, based on the method used by CalEEMod.
- **Vehicular Emissions.** For this analysis, it was assumed that the baseline existing uses would not include any employees at the existing site. Accordingly, mobile-source (vehicular) GHG emissions are not included with existing uses.

The above sources represent the vast majority of the GHG emissions associated with existing development on the TE Connectivity Campus. Existing facilities may emit a small amount of HFCs from leakage and the service of refrigeration and air-conditioning equipment, as well as the disposal of equipment at the end of its life; however, the contributions of these emissions to the total inventory are most likely quite small.

[24] CalEEMod. 2015. *User's Guide*. Appendix D Table 1.2. Available: <http://www.aqmd.gov/docs/default-source/caleemod/caleemod-appendixd.pdf?sfvrsn=2>. Accessed: February 9, 2016.

[25] PAE Engineers. 2015. *Facebook TE Campus: Energy & Water Analysis*. September 24.

[26] PAE Engineers. 2015. *Facebook TE Campus: Energy & Water Analysis*. September 24.

Ozone has the characteristics of a GHG; however, unlike regulated GHGs, ozone in the troposphere is relatively short lived and, therefore, has localized rather than global effects. According to ARB,[27] it is difficult to make an accurate determination of the contribution of ozone precursors (nitrogen oxides [NO_X] and reactive organic gases [ROGs]) to global warming. Therefore, the inventory of emissions associated with existing/background conditions presented in Table 3.5-5, later in this section, represents an estimate of all emissions that are directly and indirectly associated with current onsite operations.

Predicted Effects of Climate Change

Climate change could have a number of adverse effects. Although these effects would have global consequences, in most cases they would not disproportionately affect any one site or activity. In other words, many of the effects of climate change are not site specific. Emissions of GHGs would contribute to changes in the global climate, which would, in turn, have a number of physical and environmental effects. A number of general effects are discussed below.

Sea-Level Rise and Flooding. Measurements taken in the San Francisco Bay (Bay) indicate that the current rate of sea-level rise is about 3.5 inches per century at Alameda and 8.4 inches per century at San Francisco.[28] Climate change effects on sea levels could lead to even higher rates of sea-level rise (accelerated sea-level rise). The different scenarios and models that are used to predict sea-level rise result in different estimates of the magnitude of sea-level rise. For example, the California Climate Change Center predicts that accelerated sea-level rise could result in a sea-level rise in California of 4.3 to 28.2 inches above the existing mean sea level (msl) by 2099.[29] The California Climate Action Team projects that sea levels could rise as much as 71.6 inches by 2099.[30]

In October 2011, the San Francisco Bay Conservation and Development Commission (BCDC) adopted the latest amendment to the Bay Plan. The Bay Plan states that the Bay will rise 10 to 17 inches by 2050, 17 to 32 inches by 2070, and 55 to 69 inches by the end of the century if current trends continue.[31]

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[27] California Air Resources Board. 2004. *Fact Sheet, Climate Change Emission Control Regulations.* Available: <http://www.arb.ca.gov/cc/factsheets/cc_newfs.pdf>. Accessed: February 8, 2016.

[28] California Department of Water Resources. 2006. *Progress on Incorporating Climate Change into Planning and Management of California's Water Resources Technical Memorandum Report.* Table 2-6. Available: <http://www.water.ca.gov/climatechange/docs/DWRClimateChangeJuly06.pdf>. Accessed: February 8, 2016.

[29] Cayan, D. P. Bromirski, K. Hayhoe, M. Tyree, M. Dettinger, and R. Flick. 2006. *Projecting Future Sea Level*. California Energy Commission. Table 3. July 2006. Available:<http://www.energy.ca.gov/2005publications/CEC-500-2005-202/CEC-500-2005-202-SF.PDF>. Accessed: February 8, 2016.

[30] California Climate Action Team. 2010. *Executive Summary, 2010 Climate Action Team Report to Governor Schwarzenegger and the California and Legislature*. December. Available: <http://www.energy.ca.gov/2010publications/CAT-1000-2010-005/CAT-1000-2010-005.PDF>. Accessed: February 8, 2016.

[31] San Francisco Bay Conservation and Development Commission. 2011. Resolution No. 11-08: Adoption of Bay Plan Amendment No. 1-08, Adding New Climate Change Findings and Policies to the Bay Plan and Revising the Bay Plan Tidal Marsh and Tidal Flats, Safety of Fills, Protection of the Shoreline, and Public Access Findings and Policies. Page 11. Adopted October 2011. Available:<http://www.bcdc.ca.gov/proposed_bay_plan/10-01Resolution.pdf>. Accessed: February 8, 2016.

In the future, precipitation events are predicted to vary in terms of timing, intensity, and volume, according to many climate change models. Extreme storm events may occur with greater frequency.[32] Alterations in the flow regime and subsequent flood potential could also occur from effects of climate change on local and regional precipitation patterns.

Water Supply. California Health and Safety Code Section 38501(a) recognizes that climate change "poses a serious threat to the economic well-being, public health, natural resources, and the environment of California," and notes that "the potential adverse impacts of [climate change] include…reduction in the quality and supply of water to the state from the Sierra snowpack." Because most of the state, including the Bay Area, depends on surface water supplies originating in the Sierra Nevada, this water supply reduction is a concern.

Most of the scientific models for climate change show that the primary effect on California's climate would be a reduced snow pack and a shift in streamflow seasonality. A higher percentage of the winter precipitation in the mountains would most likely fall as rain rather than as snow in some locations, thereby reducing the overall snowpack. Furthermore, as temperatures rise, snowmelt is expected to occur earlier in the year, resulting in a peak runoff that would very likely come a month or so earlier. However, the state may not have enough surface storage to capture this early runoff. Absent the construction of additional water storage projects, a portion of current supplies would be lost to the ocean rather than made available for use in the state's water delivery systems.

Water Quality. Climate change could have adverse effects on water quality, which would, in turn, affect the beneficial uses (habitat, water supply, etc.) of surface water bodies and groundwater. The changes in precipitation discussed above could result in increased sedimentation, higher concentrations of pollutants, higher dissolved oxygen levels, increased temperatures, and an increase in the amount of runoff constituents reaching surface water bodies. Sea-level rise, discussed above, could result in the encroachment of saline water into freshwater bodies.[33]

Ecosystems and Biodiversity. Climate change is expected to have effects on diverse types of ecosystems, from alpine to deep-sea habitats. As temperatures and precipitation change, seasonal shifts in vegetation would occur; this could affect the distribution of associated flora and fauna. As the range of species shifts, habitat fragmentation could occur, with acute impacts on the distribution of certain sensitive species. The IPCC states that "[a]pproximately 20 to 30 percent of plant and animal species assessed so far are likely to be at increased risk of extinction if increases in global average temperature exceed 1.5°C to 2.5°C" relative to pre-industrial levels.[34] Shifts in existing biomes could also make ecosystems vulnerable to encroachment from foreign species. These disruptions can cause ripple effects in food webs for a wide range of organisms. In general terms, climate change is expected to put a number of stressors on ecosystems, with potentially catastrophic effects on biodiversity.[35]

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[32] U.S. Environmental Protection Agency. 2013. *Climate Change Indicators in the United States: Weather and Climate.* Last updated: November 11, 2015. Available: <http://www.epa.gov/climatechange/science/indicators/weather-climate/index.html>. Accessed: February 8, 2016.

[33] Intergovernmental Panel on Climate Change. 2007. *Climate Change 2007: Impacts, Adaptation, and Vulnerability.* Parry, Martin L., Canziani, Osvaldo F., Palutikof, Jean P., van der Linden, Paul J., and Hanson, Clair E. (eds.). Cambridge, UK: Cambridge University Press, 1,000 pp. Available: <https://www.ipcc.ch/pdf/assessment-report/ar4/wg2/ar4_wg2_full_report.pdf>. = Accessed: February 9, 2016.

[34] Intergovernmental Panel on Climate Change. 2007. *Climate Change 2007: Impacts, Adaptation, and Vulnerability*. Parry, Martin L., Canziani, Osvaldo F., Palutikof, Jean P., van der Linden, Paul J., and Hanson, Clair E. (eds.). Cambridge, UK: Cambridge University Press, 1,000 pp. Available: <https://www.ipcc.ch/pdf/assessment-report/ar4/wg2/ar4_wg2_full_report.pdf>. Accessed: February 9, 2016.

[35] U.S. Environmental Protection Agency. 2013b. *Ecosystems Impacts and Adaptation.* Last Updated: November 4, 2015. Available:<http://www3.epa.gov/climatechange/impacts/climate-impacts.html>. Accessed February 9, 2016.

Human Health Impacts. Climate change may also increase the risk of vector-borne infectious diseases, particularly those found in tropical areas and spread by insects, such as Lyme disease and West Nile Virus. The presence of harmful bacteria and *Cryptosporidium* and *Giardia*, water-borne parasites, could also increase in the event of heavy rainfall or flooding and contaminate drinking water. Although these health impacts would affect largely tropical areas in other parts of the world, effects would also be felt in California. Warming of the atmosphere would be expected to increase ground-level ozone, which could adversely affect individuals with heart and respiratory problems, such as asthma. Extreme heat events would also be expected to occur with more frequency and could adversely affect sensitive populations, such as the elderly and children. Finally, the water supply impacts and seasonal temperature variations expected as a result of climate change could affect the viability of existing agricultural operations, making the food supply more vulnerable.[36]

Heat Island Effect. Although not directly caused by climate change, the heat island effect may be exasperated by the increased frequency of heating days due to climate change. The heat island effect is created by paved urban areas that tend to absorb rather than reflect solar radiation because of the dark asphalt surfaces, resulting in greater temperatures above and surrounding these areas compared with temperatures in nearby rural areas. According to EPA, this effect can result in greater demand for air-conditioning, increased air pollution and GHG emissions due to increased energy demands, heat-related illness and mortality, and effects on water quality.[37]

Environmental Impacts

This section describes the impact analysis related to GHGs and climate change for the Project. It describes the methods used to determine the impacts of the Project and lists the thresholds used to conclude whether an impact would be significant. Impacts are determined to be no impact (NI), less than significant (LTS), less than significant with mitigation (LTS/M), or significant and unavoidable (SU). Measures to mitigate (i.e., avoid, minimize, rectify, reduce, eliminate, or compensate for) significant impacts accompany each impact discussion, as needed.

Thresholds of Significance

GHG emissions are fundamentally a cumulative impact issue. No single development project would result in GHG emissions that would be great enough to affect global warming or climate change in isolation. However, cumulative global emissions could change the radiative balance of the atmosphere. As such, Project-level effects in isolation would be less than significant. The analysis below is a cumulative impact analysis.

In accordance with Appendix G of the State CEQA Guidelines, the Project would have a significant effect if it would result in any of the conditions listed below.

- Generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment. (For the purposes of this analysis, a "significant impact" from GHG emissions would occur if emissions were to exceed thresholds described below.)

[36] U.S. Environmental Protection Agency. 2015b. *Climate Impacts on Human Health*. Last Updated: November 4, 2015. Available: <http://www3.epa.gov/climatechange/impacts/health.html>. Accessed: February 9, 2016.

[37] U.S. Environmental Protection Agency. 2015c. *Heat Island Impacts*. Last updated: October 1, 2015. Available: <http://www.epa.gov/heat-islands/heat-island-impacts>. Accessed: February 9, 2016.

- Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing emissions of GHGs. (For the purposes of this analysis, applicable plans include the AB 32 Scoping Plan and the City's CAP [consistency with the goals in EO B-30-15 and EO S-3-05 is also evaluated].)

Greenhouse Gases

GHG emissions are evaluated by using guidance and thresholds outlined in BAAQMD's *CEQA Guidelines* for consistency with the GHG reduction targets for 2020 established in AB 32. For the period after 2020, GHG emissions will be evaluated by modifying the relevant BAAQMD GHG threshold for AB 32 to the 2030 period, taking into account the GHG reduction target in EO B-30-15, as discussed below.

BAAQMD's *CEQA Guidelines* do not identify a quantitative GHG emission threshold for construction-related emissions. Instead BAAQMD recommends that GHG emissions from construction be quantified and disclosed and that a determination regarding the significance of these GHG emissions be made with respect to whether a project is consistent with the AB 32 GHG emissions reduction goals. BAAQMD further recommends incorporation of BMPs to reduce GHG emissions during construction, as feasible and applicable. BMPs may include the use of alternative-fuel (e.g., biodiesel, electric) construction vehicles and equipment (at least 15 percent of the fleet), using building materials that are at least 10 percent local, and recycling or reusing at least 50 percent of construction waste or demolition materials.

With respect to Project operations, BAAQMD's guidelines establish three potential analysis criteria for land use development projects:

- Compliance with a qualified CAP, with a goal consistent with AB 32,
- A mass emissions threshold of 1,100 MT of CO_2e per year, or
- A GHG efficiency threshold of 4.6 MT of CO_2e per service population (project jobs + projected residents).

BAAQMD thresholds are based on the AB 32 GHG reduction goals and a "gap analysis" that attributes an appropriate share of GHG emissions reductions to new land use development projects in BAAQMD's jurisdiction.[38] The efficiency threshold (4.6 MT of CO_2e per service population) was calculated by dividing the AB 32 GHG reduction target for land use development emissions in California by the estimated 2020 population and employment level.[38] BAAQMD thresholds are tied directly to AB 32 and statewide emissions reduction goals for 2020.

There is no adopted state plan that addresses GHG emissions reduction beyond 2020. However, long-term goals for 2030 and 2050 have been articulated in EO B-30-15 and EO S-3-05, respectively (see above). Executive orders are binding only on state agencies.

Achieving the executive orders' 2030 and 2050 GHG emissions reduction goals will require systemic changes in how energy is produced and consumed through all sectors of the economy (as discussed in greater detail in the impact analysis below). Because the mix of technologies, strategies, and policy choices the state will ultimately choose to implement to achieve the 2030 and 2050 goals is not readily ascertainable at this time, any accounting of future GHG emissions from an individual development project cannot reflect the scope and scale of reductions that may occur as the state transitions toward long-term goals. Furthermore, in absence of a state plan to achieve these long-term goals, it is difficult to identify the "fair share" of reductions to be applied at the local or project level.

[38] Bay Area Air Quality Management District. 2010. *Proposed Thresholds of Significance*. May.

The Association of Environmental Professionals (AEP) Climate Change Committee recommended in a 2015 white paper that CEQA analyses for multiple-phase projects with post-2020 development not only "consider consistency with the 2020/AB 32-based framework but also analyze the consequences of post-2020 GHG emissions in terms of their impacts on the reduction trajectory from 2020 toward 2050."[39] AEP further recommends that the "significance determination…should be based on consistency with *substantial progress* along a post-2020 trajectory."[40] The AEP white paper is advisory only and is not binding guidance or an adopted set of CEQA thresholds. The Project would continue to generate operational GHG emissions in future years; thus, a post-2020 discussion is warranted.

Consistent with general scientific understanding that there will be a need for deeper reductions in GHG emissions in the post-2020 period, this EIR evaluates operational GHG emissions by using two different metrics: (1) a BAAQMD-recommended efficiency threshold based on the 2020 reduction target in AB 32 and (2) an efficiency metric based on the 2030 reduction target in EO B-30-15, taking into account the need for GHG reductions to meet the near-term reduction targets in AB 32 and the need for greater reductions beyond the AB 32 target in the post-2020 period.

- Project emissions are compared to BAAQMD's efficiency threshold of 4.6 MT of CO_2e per service population. Emissions in excess of BAAQMD's thresholds could impede attainment of statewide GHG reduction targets for 2020 established under AB 32.
- Project emissions are compared to a "substantial progress" efficiency indicator of 2.6 MT of CO_2e per service population. The substantial progress efficiency indicator was calculated for 2030 and based on the GHG reduction goal established under EO B-30-15 (40 percent reduction below 1990 levels by 2030, taking into account the 1990 emissions levels and the projected 2030 statewide population and employment levels). Emissions in excess of the substantial progress efficiency indicator of 2.6 MT of CO_2e per service population could conflict with the trajectory of long-term GHG reduction goals. Although a similar metric was not calculated for 2050, the analysis of substantial progress through 2030 on a trajectory toward 2050 reduction targets is used in this EIR to disclose consistency of the Project with the long-term reductions called for in EO S-3-05.[41]

Table 3.5-3 summarizes the operational GHG thresholds and the "substantial progress" efficiency metric considered in this EIR.

[39] Association of Environmental Professionals. 2015. *Beyond 2020: The Challenge of Greenhouse Gas Reduction Planning by Local Governments*. Draft. March 16.

[40] Association of Environmental Professionals. 2015. *Beyond 2020: The Challenge of Greenhouse Gas Reduction Planning by Local Governments*. Draft. March 16.

[41] Achieving the 2030 and 2050 GHG reduction goals of the Executive Orders will require systemic changes in how energy is produced and consumed through all sectors of the economy (as discussed in greater detail in the discussion of the AB 32 Scoping Plan and Executive Orders). Because the mix of technologies, strategies, and policies the state will ultimately choose to implement to achieve the 2030 and 2050 goals is not readily ascertainable at this time, it is not possible to account for the scope and scale of reductions that will occur as a result of state regulations in the future.

Table 3.5-3. Operational GHG Thresholds/Substantial Progress Efficiency Metrics

Analysis Condition	Threshold/Metric	Basis
2020 Development	4.6 MT of CO_2e per service population	BAAQMD-adopted threshold based on AB 32
2030 Development	4.6 MT of CO_2e per service population	BAAQMD-adopted thresholds based on AB 32
	2.6 MT of CO_2e per service population	EO B-30-15 (40 percent reduction below 1990 levels)[a]

Note:
[a.] Calculation of 2.6 MT of CO_2e is based on state land use sector emissions being 40 percent below 1990 levels, combined with the forecast population and employment levels in 2030.

Climate Change Effects

In a recent court case (December 17, 2015), the California Supreme Court held that lead agencies are not required to analyze the impacts of the environment on a project's future users or residents, unless the project exacerbates existing environmental hazards (see *California Building Industry Association* [CBIA] *v. Bay Area Air Quality Management District*, Supreme Court Case No. S213478) or the legislature indicates by specific code (Public Resources Code Sections 21096, 21151.8, 21155.1, 21159.21, 21159.22, 21159.23, and 21159.24) that a defined environmental hazard associated with airport noise and safety, school projects, certain kinds of housing, and transit priority projects must be addressed. Therefore, this analysis does not assess the potential for climate change impacts from existing sources of GHGs on onsite Project uses.

Methods for Analysis

GHG emissions associated with construction and operation of the Project were quantified by using standard and accepted software tools, techniques, and emissions factors. A summary of the methodology is provided below. A full list of assumptions can be found in Appendix 3.4.

Construction

Construction of the Project would demolish existing buildings on the Project site (Buildings 301–306). Construction of the Project would generate short-term emissions of CO_2, CH_4, and N_2O. Direct emissions would originate from the exhaust of mobile and stationary construction equipment as well as employee vehicles and haul trucks. These sources were evaluated by using methodologies consistent with CalEEMod (version 2013.2.2), ARB's EMFAC2014 model, and the methods summarized in Section 3.4, *Air Quality.* Indirect GHG emissions from water use for fugitive dust control and electricity use during the construction period were estimated by using consumption data provided by the Project Sponsor[42] and default emission factors from CalEEMod.

Operation

Operation of the facilities at the Project site currently generates GHG emissions, which would be eliminated and then replaced with operational emissions associated with the Project. The difference in operational emissions between the Project and the existing uses represents the net impact of the

[42] Gehry Partners, LLP. 2015.

Project. Sources of operational emissions include vehicle exhaust, energy usage, area sources,[43] water consumption, and waste and wastewater generation. Emissions generated by these sources were taken into account when analyzing long-term operational impacts associated with the Project. Emissions for the Project and the existing conditions were estimated using CalEEMod.[44] Emissions from mobile sources during operation were calculated using the same methodology described for criteria pollutants in Section 3.4, *Air Quality*.

The Project would include implementation of water reduction strategies, including the use of low-flow fixtures for faucets and a water-efficient landscaping design, as described in Chapter 2, *Project Description*. In addition, the Project Sponsor would pursue LEED Gold 2009 level of certification for Building 21 and Building 22 under the New Construction rating system. Additional sustainability measures would be implemented to meet LEED certification, but specific details on the types and anticipated reductions are currently unknown. Accordingly, the analysis does not account for any additional water reductions, energy efficiency improvements, or other emissions benefits associated with LEED certification. The analysis does consider electricity consumption that is expected to occur with use of the onsite recycled water system. Annual electricity consumption for this system was provided by the Project Sponsor, and GHG emissions from electricity consumption were quantified by using the PG&E carbon-intensity factor of 0.641 lb/kWh.[45]

CalEEMod modeling accounts for state actions to reduce GHG emissions, including Pavley I, ARB's Low-Carbon Fuel Standard, and the Renewable Portfolio Standard. Emissions benefits achieved by Pavley II/Advanced Clean Cars were added to the modeling, assuming a 2 percent reduction in light-duty vehicle emissions.

Impacts and Mitigation Measures

Impact GHG-1: Greenhouse Gas Emissions. The Project would not generate GHG emissions, either directly or indirectly, that would have a significant impact on the environment. (LTS/M)

Construction

Construction of the Project would generate direct emissions of CO_2, CH_4, and N_2O from the exhaust of mobile and stationary construction equipment as well as employee vehicles and haul trucks. Indirect emissions would be generated from water use for fugitive dust control and electricity use during the construction period. Estimated construction emissions associated with the Project are summarized in Table 3.5-4. Model output and calculation spreadsheets are provided in Appendix 3.4. It was assumed that the duration of construction would be approximately 4 years, consisting of three primary phases that would correspond to each of the new Project buildings. Construction at each building would require four to five sub-phases.

[43] "Area sources" include consumer products, architectural coatings, and landscaping equipment.

[44] The Project would result in emissions from vehicle exhaust, but existing uses would not produce vehicle exhaust because there would be no employees working at the site.

[45] CalEEMod. 2015. *User's Guide*. Appendix D Table 1.2. Available: <http://www.aqmd.gov/docs/default-source/caleemod/caleemod-appendixd.pdf?sfvrsn=2>. Accessed: February 9, 2016.

Table 3.5-4. Estimated Construction GHG Emissions

Year	CO_2	CH_4	N_2O	CO_2e
2016	1,066	< 1	< 1	1,074
2017	1,333	< 1	< 1	1,341
2018	2,364	< 1	< 1	2,379
2019	1,832	< 1	< 1	1,844
2020	187	< 1	< 1	188
Electricity and Water Use[a]	92	< 1	< 1	93
Total	6,874	1	< 1	6,919

Note:
[a] Emissions would occur from the consumption of electricity and water during the entire construction period.

As shown in Table 3.5-4, Project construction would generate 6,919 MT of CO_2e over the projected 4-year construction period. This is equivalent to the emissions of approximately 1,463 passenger vehicles for a single year.[46] Consistent with established protocols and published guidance from other lead agencies and air districts, construction emissions are amortized over the expected operational life of a project (assumed to be 30 years). Amortized over 30 years, construction emissions would be equivalent to 231 MT of CO_2e per year. Construction emissions would be primarily the result of diesel-powered construction equipment and heavy-duty haul truck usage. As discussed above, BAAQMD's *CEQA Guidelines* do not identify a GHG emission threshold for construction-related emissions. However, they do recommend implementation of BMPs to help control and reduce GHG emissions. Therefore, the construction GHG impact is conservatively considered ***potentially significant***.

MITIGATION MEASURES. Consistent with BAAQMD's *CEQA Guidelines*, the Project would implement Mitigation Measure GHG-1.1, which would require the implementation of construction BMPs, including switching construction equipment from conventional technologies to hybrid, compressed natural gas, electric, biodiesel, or renewable diesel (at least 15 percent of the fleet); the use of local building materials; and the reuse of materials onsite, such as concrete. Compliance with Mitigation Measure GHG-1.1 would reduce the GHG emissions shown in Table 3.5-4 and ensure that construction-related GHG emissions would be consistent with the City's CAP and BAAQMD-recommended BMPs.[47] Therefore, construction of the Project would result in a ***less-than-significant impact with mitigation***.

GHG-1.1: Implement BAAQMD Best Management Practices for Construction. The Project Sponsor shall require all construction contractors to implement the BMPs recommended by BAAQMD to reduce GHG emissions. Emissions reduction measures shall include, at a minimum, the use of local building materials (at least 10 percent), the recycling and reuse of at least 50 percent of construction waste or demolition material, and the use of alternative-fuel vehicles for construction vehicles/equipment (at least 15 percent of the fleet).

[46] U.S. Environmental Protection Agency. 2014. *Greenhouse Gas Equivalencies Calculator*. Last Revised: April 16, 2014. Available: <http://www.epa.gov/energy/greenhouse-gas-equivalencies-calculator>. Accessed: February 2, 2016.

[47] Impacts of Mitigation Measure GHG-1.1 are not explicitly quantified because BAAQMD has not adopted a mass emissions threshold for construction. For reference, electrically powered equipment can reduce GHG emissions by up to 70 percent and CNG by 20 percent, depending on the type of equipment and carbon intensity of electric power. Diesel HPR (renewable biodiesel) has been shown to reduce tailpipe GHGs by 40 percent without engine modifications.

Operation

Project operation would generate direct and indirect GHG emissions. Sources of direct emissions include vehicle trips, natural gas combustion, and landscaping activities. Indirect emissions would be generated by electricity consumption, waste and wastewater generation, and water use. Similar emissions sources are currently operating on the Project site. Emissions generated by these uses represent the existing conditions against which the Project must be evaluated.

Estimated operational emissions under existing and Project conditions are summarized in Table 3.5-5, which shows GHG emissions associated with existing and background conditions (i.e., conditions without the Project). The area-, energy-, waste-, and water-source emissions are those emissions that are generated by the existing land uses. Mobile-source emissions under existing/background conditions are zero because there are no active employees at the TE Connectivity Campus.

The Project portion of Table 3.5-5 shows GHG emissions associated with the Project in 2020 and 2040. The area-, energy-, waste-, and water-source emissions are those emissions that would be generated only by the Project. It was conservatively assumed that these emissions would be constant in future years (i.e., future gains in efficiency and other emissions benefits would not occur). Mobile-source emissions as a direct result of the Project are shown for 2020 and 2040 because the rate of emissions from Project-employee vehicles would decrease between 2020 and 2040 with advancements in vehicle technology and the turnover of older, more heavily polluting vehicles. Thus, it is more comprehensive to assess mobile-source emissions for two separate years.

The Net Emissions portion of Table 3.5-5 shows the net GHG emissions that are attributable to the Project. As shown in this section of the table, the mobile-source emissions generated by the Project are the dominant source of emissions. The Project's net mass emissions (i.e., the sum of the area-, energy-, waste-, water-, and mobile-source emissions and amortized construction emissions over 30 years) for 2020 and 2040 are shown, along with emissions per service population. Amortized construction emissions are shown in this table of operational emissions and added to the Project's net emissions to be consistent with industry standards.

Given the emissions in Table 3.5-5, net Project emissions from all non-mobile sources combined would result in a net reduction of GHG emissions because the Project's emissions would be below the existing baseline emissions. The majority of the Project-generated GHG emissions would be the result of mobile sources (associated with Project-employee and visitor trips; employee-shuttle and vanpool trips; vendor, contractor, and delivery trips; and trips associated with the hotel). There is no existing baseline level of mobile-source emissions because, as discussed previously, this EIR assumes there are no active employees at the TE Connectivity Campus. With the inclusion of mobile-source emissions, total Project GHG emissions in 2020 and 2040 would result in a net increase in emissions relative to the TE Connectivity Campus, but emissions would not exceed the current BAAQMD efficiency threshold or 2030 "substantial progress" efficiency metric.

Given the Project's level of emissions in 2020 and 2040 (2.3 and 1.3 MT of CO_2e per service population, respectively) compared with the BAAQMD efficiency threshold (4.6 MT of CO_2e per service population) and 2030 "substantial progress" efficiency metric (2.6 MT of CO_2e per service population), the Project would result in a ***less-than-significant*** impact related to GHG emissions.

Table 3.5-5. Estimated Operational GHG Emissions, Full Buildout[a]

Condition/Source	CO_2	CH_4	N_2O	CO_2e
Existing/Background Conditions				
Area Sources[b]	< 1	< 1	—	< 1
Energy Sources[b]	10,351	1	< 1	10,413
Waste Generation[b]	192	11	—	475
Water Consumption[b]	62	1	< 1	100
Mobile Sources[b]	0	0	0	0
Total Baseline Emissions[b]	10,605	13	< 1	10,989
Project				
Area Sources[c]	< 1	< 1	—	< 1
Energy Sources[c]	4,178	< 1	< 1	4,208
Waste Generation[c]	204	12	—	505
Water Consumption[c]	87	3	< 1	171
Mobile Sources in 2020[d]	20,787	< 1	< 1	20,900
Mobile Sources in 2040[d]	14,223	< 1	< 1	14,290
Amortized Construction Emissions (30 years)				*231*
Total Project Emissions in 2020	25,255	15	< 1	26,015
Total Project Emissions in 2040	18,691	15	< 1	19,405
Net Emissions				
Area Sources[e]	< 1	< 1	—	< 1
Energy Sources[e]	-6,173	< 1	< 1	-6,205
Waste Generation[e]	12	1	0	30
Water Consumption[e]	24	1	< 1	71
Mobile Sources – 2020[e]	20,787	< 1	< 1	20,900
Mobile Sources – 2040[e]	14,233	< 1	< 1	14,290
Amortized Construction Emissions (30 years)				*231*
Net Mass Emissions – 2020[f]				15,026
Net Mass Emissions – 2040[f]				8,416
Emissions per Service Population – 2020[g]				2.3
Emissions per Service Population – 2040[g]				1.3
Current BAAQMD Efficiency Threshold (MT/Service Population)				4.6
2030 "Substantial Progress" Efficiency Metric (MT/Service Population)				2.6

Notes:

a. Metric tons/year.

b. These are emissions associated with the TE Connectivity Campus only.

c. These are emissions associated with the Project only. It was conservatively assumed that these emissions would be constant in the future years.

d. These are mobile-source emissions in 2020 and 2040 as a direct result of the Project. These vehicle emissions associated with the Project decrease between 2020 and 2040 with advancements in vehicle technology and the turnover of older, more heavily polluting vehicles.

e. These are the differences in emissions between the Project in 2020 and 2040 and the baseline conditions for each type of emissions source.

f. This is the total difference in emissions (i.e., the sum of all three emissions sources combined) between the Project in 2020 and 2040 and the baseline conditions. This value includes the amortized Project construction emissions.

g. Assumes a service population of 6,550 employees.

As discussed above, although the state has a plan to achieve the AB 32 2020 target in the AB 32 Scoping Plan and the myriad adopted regulations to support AB 32, the state currently does not have a plan to achieve a 2030 or 2050 goal. Therefore, any calculation of post-2020 emissions cannot take into account future state or federal actions to achieve long-term reductions. As discussed under Impact GHG-2, in the analysis of consistency with the goals of EO B-30-15 and EO S-3-05, the achievement of long-term GHG emissions reduction targets will require substantial change in terms of how energy is produced and consumed as well as other substantial economy-wide changes, many of which can be implemented only by the state and federal government. For example, the recently adopted SB 350 requires that renewable energy make up 50 percent of the electricity supply by 2030. This has not been incorporated into the Project emissions estimates for comparison with the 2030 efficiency threshold. In addition, placing the entire burden of meeting long-term reduction targets on local government or new development would be disproportionate and most likely ineffective; thus, state and federal action will be critical components of meeting long-term reduction goals.

Impact GHG-2: Conflicts with Applicable Plans and Policies. The Project would conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of GHGs. (SU)

Two plans have been adopted for the purposes of reducing GHG emissions that are relevant to the Project: the AB 32 Scoping Plan and the City of Menlo Park CAP. Project consistency with these two plans is reviewed below. In addition, the Project's consistency with EO S-3-05 and EO B-30-15 is reviewed.

Consistency with AB 32 Scoping Plan

California adopted AB 32 in 2006, which codified the state's GHG emissions reduction targets for the future. ARB adopted the AB 32 Scoping Plan as a framework for achieving AB 32. The AB 32 Scoping Plan outlines a series of technologically feasible and cost-effective measures to reduce statewide GHG emissions, including (1) expanding energy-efficiency programs, (2) increasing electricity production from renewable resources to at least 33 percent of the statewide electricity mix, (3) increasing automobile efficiency, (4) implementing the Low-Carbon Fuel Standard, and (5) developing the cap-and-trade program. As discussed above, the vast majority of the Project's GHG emissions would result from mobile sources. Multiple AB 32 Scoping Plan measures address GHG emissions from transportation fuels. For example, the cap-and-trade program, through the regulation of fuel suppliers, will account for GHG emissions from the Project and require emissions from covered sectors to be reduced by the amount needed to achieve AB 32's 2020 goal. Likewise, the-Low Carbon Fuel Standard requires a 10 percent reduction in the carbon intensity of transportation fuels by 2020 and, therefore, creates incentives for broader-scale deployment of alternative vehicle fuels, including electricity. Similarly, the state's Renewable Portfolio Standard mandates that the state's utilities dramatically increase (to 33 percent by 2020) the percentage of electricity sales that are generated by eligible renewable generation sources. Together, these elements of the AB 32 Scoping Plan will ensure that overall statewide emissions will decrease to the extent necessary to achieve AB 32's emissions reduction goals. The Project does not impede implementation of any of these elements. Additionally, the Project's emissions would not exceed the BAAQMD efficiency threshold, which is based on consistency with the AB 32 reduction target. Therefore, the Project would have a ***less-than-significant*** impact on consistency with the AB 32 Scoping Plan.

Consistency with City of Menlo Park Climate Action Plan

As discussed above, the City of Menlo Park adopted a CAP in 2009 to reduce municipal government and community GHG emissions. In October 2015, the City released a report[48] that updated the CAP with emissions for the years between 2005 and 2013, provided an update on the progress of the projects selected in the previous year's CAP update, and provided a list of CAP projects for fiscal years 2015/2016 through 2019/2020. The 2015 CAP update and status report is currently in draft form. The most recent finalized update to the CAP is from July 2011. As such, the Project is evaluated for consistency with the 2011 CAP Assessment Report,[49] as shown in Table 3.5-6.

Table 3.5-6. Consistency of Project with CAP Community Strategies

CAP Strategies	Project Compliance
Energy Efficiency	
Consider adopting sustainable development/green building standards that exceed California's 2010 Green Building Code (CalGreen) for residential and commercial	The Project's building performance would exceed by at least 15 percent the minimum requirements of California's Title 24-2013, Part 6, Energy Code Standards.
Consider actively marketing and providing additional incentives for residents to participate in the new Regional Energy Upgrade California Program	This strategy is not applicable to local development because it is a City-sponsored education program designated for further study.
Expand Menlo Park Municipal Water District conservation programs	This strategy is not applicable to local development because it is a City-sponsored program designated for further study. However, the Project would implement water-saving infrastructure and equipment, including plumbing fixtures, steamers, dishwashers, and other equipment. Water consumption monitoring would also be used. Additionally, the Project would involve the use of a recycled water system that would use so-called "blackwater" from plumbing fixtures on the site for non-potable uses, such as in toilets and for landscaping purposes. Please refer to Chapter 2, *Project Description*, for a complete list.
Consider developing an energy efficiency/renewable energy program for residential sector	This strategy is not applicable to local development because it is a City-sponsored program designated for the residential sector and not commercial development.
Develop a commercial energy efficiency program to encourage businesses to participate in a free energy efficiency audit when business license is issued or renewed	This strategy is not applicable to local development because it is a City-sponsored program designated for further study.

[48] City of Menlo Park. 2015. *Staff Report: Update on the City of Menlo Park's Climate Action Plan Update and Status Report for 2015*. Available: <http://www.menlopark.org/DocumentCenter/View/8414>. Accessed: February 8, 2016.

[49] City of Menlo Park. 2011. *Climate Action Plan Assessment Report*. July. Available: <http://www.menlopark.org/DocumentCenter/View/1343>. Accessed: February 9, 2016.

CAP Strategies	Project Compliance
Consider local energy efficiency and renewable energy financing program	This strategy is not applicable to local development because it is a City-sponsored program designated for further study.
Consider development of an ordinance for energy and water efficiency standards for transfer of title transactions	This strategy is not applicable to local development because it is a City-sponsored program designated for further study.
Transportation	
Consider amending the City's General Plan to include new sustainability policies, goals and programs	These strategies are designated for further study and would be City-sponsored policies, goals, and programs that are not developed at this time and, therefore, not applicable to the Project.
Consider social marketing programs/campaigns to promote alternative transportation (walking, biking, public transit, etc.)	This strategy is not applicable to local development because it is a City-sponsored education program designated for further study. However, the Project's TDM program would utilize educational and promotional events to encourage employees to use alternative modes of travel.
Consider implementation for City Car Sharing Program	This is a City-managed strategy. It should be noted, however, that the Project would include a car-sharing program on the Campus.
Implement Bike Improvements	This is a City-managed strategy. It should be noted, however, that the Project would include bike amenities (bike shops, lockers, towel service, etc.) on the Campus.
Solid Waste	
Consider adopting a zero waste policy with 75 percent diversion by 2020 and 90 percent diversion by 2030.	These strategies are designated for further study and would be City-sponsored infrastructure and/or ordinance efforts to reduce solid waste disposal that would not be applicable to a land use project.
Consider adopting a mandatory commercial recycling ordinance	These strategies are designated for further study and would be City-sponsored infrastructure and/or ordinance efforts to reduce solid waste disposal that would not be applicable to a land use project. However, the Project would divert approximately 60 percent of construction waste from landfills.
Other	
Establish Climate Action Plan monitoring and progress reporting program	These strategies are designated for further study and would be City-sponsored policies, goals, and programs that are not applicable to the Project.
Expand Green Business Certification Program; include green business education to new business permit applicants	This strategy is not applicable to local development because it is a City-sponsored education program designated for further study.
Consider amending the City's General Plan to include a "GHG reduction strategy" as outlined in the new CEQA Guidelines	These strategies are designated for further study and would be City sponsored policies, goals, and programs that are not developed at this time and therefore not applicable to the Project.
Develop social marketing campaign to educate residents on reducing their personal greenhouse gas emissions.	This strategy is not applicable to local development because it is a City sponsored education program designated for further study.

CAP Strategies	Project Compliance
Develop a promotion and education program to encourage local and or organic food production	This strategy is not applicable to local development because it is a City sponsored education program designated for further study.
Consider an educational program and/or local ordinance to limit vehicle idling	This strategy is not applicable to local development because it is a City-sponsored program and ordinance designated for further study. Additionally, ARB has already implemented an idling heavy-duty truck emissions reduction program that restricts truck idling to 5 minutes.
Research opportunities to improve methane capture at Marsh Road Landfill (Methane Emissions Mitigation)	These strategies are designated for further study and would be City-sponsored infrastructure and/or ordinance efforts to reduce emissions from solid waste disposal at a specific facility that would not be applicable to a land use project.

Sources: City of Menlo Park. 2011. *Climate Action Plan Assessment Report*. July. Available: <http://www.menlopark.org/DocumentCenter/View/1343>. Accessed: February 9, 2016.

As shown in Table 3.5-6, the Project would not conflict with any of the applicable measures in the City's CAP. Further, because the Project would not result in GHG emissions that exceed the applicable thresholds, the Project would not impede achievement of the City's CAP GHG emissions reduction target. Impacts related to CAP consistency would be ***less than significant.***

Consistency with Executive Orders EO S-3-05 and EO B-30-15

As discussed above, EO B-30-15 established an interim GHG reduction target of 40 percent below 1990 levels by 2030, and EO S-3-05 established a long-term goal of reducing statewide GHG emissions to 80 percent below 1990 levels by 2050. Achieving these long-term GHG reduction policies will require systemic changes in how energy is produced and used.

There a number of studies that discuss potential mechanisms for limiting California's economy-wide emissions to the equivalent of 40 percent below the 1990 level by 2030 and 80 percent below the 1990 level by 2050. For instance, ARB and other state agencies commissioned Energy + Environmental Economics (E3) to develop GHG emissions reduction scenarios for 2030 that would set the state on the course toward its 2050 GHG emissions reduction goal.[50] Other studies include a report by the California Center for Science and Technology (CCST),[51] a California Department of Transportation report that discusses GHG emissions reductions from the transportation sector alone,[52] and a study published in the

[50] Energy + Environmental Economics. 2015. *Summary of the California State Agencies' PATHWAYS Project: Long-term Greenhouse Gas Reduction Scenarios*. January 26. Available: <http://www.energy.ca.gov/commission/fact_sheets/documents/E3_Project_Overview_20150130.pdf>. See also Energy + Environmental Economics. 2015. *Pathways to Deep Decarbonization in the United States*. May 13. Available: <www.arb.ca.gov/research/lectures/speakers/williams/williams.pdf> (modeling results for United States, assuming 80 percent reduction in GHG emissions by 2050 compared with 1990 levels). Accessed: February 8, 2016.

[51] California Council on Science and Technology. 2012. *California's Energy Future – Portraits of Energy Systems for Meeting Greenhouse Gas Reduction Targets.* September. Available: <http://www.ccst.us/publications/2012/2012ghg.pdf>. Accessed: February 6, 2016.

[52] California Department of Transportation. 2015. *California Transportation Plan 2040*. March. Draft. Available: <http://www.dot.ca.gov/hq/tpp/californiatransportationplan2040/>. Accessed: February 8, 2016.

academic journal, *Science*, that analyzes the changes that will be required to reduce GHG emissions to 80 percent below 1990 levels by 2050.[53] In general, these studies reach similar conclusions. Deep reductions in GHG emissions can be achieved only with significant changes in electricity production, transportation fuels, and industrial processes (e.g., decarbonizing electricity production, electrifying transportation, implementing widespread adoption of low-carbon or no-carbon transportation fuels, electrifying non-transportation direct fuel uses, increasing energy efficiency, avoiding waste emissions, increasing carbon sequestration, replacing high GWP gases, and other measures).

The systemic changes that will be required to achieve the 2030 and 2050 GHG reduction goals set forth by executive order will require significant policy, technical, and economic solutions. Decarbonization of the transportation fuel supply will require electric and plug-in hybrid electric vehicles to make up the vast majority of light-duty vehicles. Some changes, such as the use of biofuels to replace petroleum for aviation, cannot be accomplished without action by the federal government. Further, achieving the 2050 GHG reduction goals will require California to increase dramatically the amount of electricity that is generated by renewable generation sources and, correspondingly, advance significantly the deployment of energy storage technology and smart-grid strategies, such as price-responsive demand and the smart charging of vehicles. This would entail a significant redesign of California's electricity system.

In evaluating the Project's emissions for consistency with EO S-3-05 and EO B-30-15, it is important to note that these broad-scale shifts in how energy is produced and used are outside of the control of the Project. The changes necessitated by the state's long-term climate policy will require additional policy and regulatory changes, which are unknown at this time. As a consequence, the extent to which the Project's emissions and resulting impacts will be mitigated through implementation of such statewide (or nationwide) changes is not known. Furthermore, implementation of such additional policy and regulatory changes is in the jurisdiction of state-level agencies (e.g., ARB) and federal-level agencies, not the City or the Project..

As discussed above under Impact GHG-1, Project GHG emissions would be below the 2030 "substantial progress" efficiency metric. Additionally, because large reductions will need to be achieved through state (and very likely federal) action, the Project's actual emissions may be even less than the levels discussed in this document; however, the specific value of heretofore unknown state (or federal) action cannot be presumed at this time. Conclusions must be made with the estimates of emissions presented in this document. Although it is estimated that the Project would be consistent with the 2030 goal of EO B-30-15, it cannot be determined whether the Project would be consistent with the long-term goal specified in EO S-3-05. Again, it is possible that future state and federal actions may reduce Project emissions below the 2050 reduction target, but this cannot be known at this time. Thus, it is conservatively assumed that the Project's emissions would be inconsistent with the goals in EO S-3-05. This impact is considered ***significant and unavoidable.***

[53] Science. 2012. *The Technology Path to Deep Greenhouse Gas Emissions Cuts by 2050: The Pivotal Role of Electricity.* James H. Williams, et al. (eds.). Available: <http://www.sciencemag.org/content/335/6064/53.full> (subscription service). Accessed: February 8, 2016.

Cumulative Impacts

GHGs and climate change are exclusively cumulative impacts. There is no non-cumulative GHG emission impact from a climate change perspective.[54] Climate change is a global problem, and GHGs are global pollutants, unlike criteria air pollutants (such as ozone precursors), which are primarily pollutants of regional and local concern. GHGs are emitted by countless sources worldwide, accumulate in the atmosphere, and have long atmospheric lifetimes. No single emitter of GHGs is large enough to trigger global climate change on its own. Rather, climate change is the result of the individual contributions of countless past, present, and future sources. Therefore, GHG impacts are inherently cumulative. In accordance with scientific consensus regarding the cumulative nature of GHGs, the analysis above considers the cumulative contribution of Project-related GHG emissions, and no additional cumulative impact analysis has been provided.

[54] California Air Pollution Control Officers Association. 2008. *CEQA and Climate Change*. January. Available: <http://www.capcoa.org/wp-content/uploads/2012/03/CAPCOA-White-Paper.pdf>. Accessed: February 8, 2016.

3.6 Noise

Introduction

This section describes the affected environment and regulatory setting for noise. It also describes the potential noise impacts that would result from implementation of the Project and provides mitigation measures that would reduce these impacts, where applicable. Cumulative impacts are discussed at the end of this section.

No comments pertaining to noise issues were received in response to the Notice of Preparation (NOP) (Appendix 1).

Existing Conditions

Regulatory Setting

City of Menlo Park General Plan

The California Government Code requires that a noise element be included in the general plan of each county and city in the state. The noise element establishes the local government's goals, objectives, and policies related to noise control. The Noise Element of the City of Menlo Park's (City's) General Plan establishes goals and policies for ensuring that existing and proposed land uses are compatible with their noise environments. Therefore, the City has adopted quantitative exterior noise compatibility criteria for various land uses. The purpose of these criteria is to reduce the potential adverse noise effects of new developments on people, including sleep disturbance, interference with speech communication, and the general sense of dissatisfaction that is often associated with high noise exposure.

Land use compatibility noise standards are included in the City's Noise Element. According to the Noise Element, noise levels up to 60 A-weighted decibels (dBA) day-night level (L_{dn}) are considered normally acceptable for single-family residential land uses, while noise levels are conditionally acceptable up to 70 dBA L_{dn} for these uses as long as noise insulation features are included in the design to reduce interior noise levels. For multi-family residential and hotel uses, noise levels of up to 65 L_{dn} are considered normally acceptable, with noise levels of 70 or L_{dn} considered to be conditionally acceptable. For office buildings, commercial uses, noise levels of up to 70 dBA L_{dn} are also considered to be normally acceptable, with noise levels of up to 77.5 L_{dn} being considered conditionally acceptable. For industrial uses, noise levels up to 75 dBA L_{dn} are considered normally acceptable, and noise levels of up to 80 dBA L_{dn} are conditionally acceptable. For schools and churches, playgrounds, and neighborhood parks, noise levels up to 70 dBA L_{dn} are considered normally acceptable; there are no separate conditionally acceptable noise limits for these uses.

The following goal and policies from the Noise Element of the City General Plan pertain to the Project.

> **Goal NI:** Achieve Acceptable Noise Levels.
>
> *Policy N1.1:* Compliance with Noise Standards. Consider the compatibility of proposed land uses with the noise environment when preparing or revising community and/or specific plans. Require new projects to comply with the noise standards of local, regional, and building code regulations, including but not limited to the City's Municipal Code, Title 24 of the California Code of Regulations, and subdivision and zoning codes.

Policy N1.2: Land Use Compatibility Noise Standards. Protect people in new development from excessive noise by applying the City's Land Use Compatibility Noise Standards for New Development to the siting and required mitigation for new uses in existing noise environments.

Policy N1.4: Noise Sensitive Uses. Protect existing residential neighborhoods and noise sensitive uses from unacceptable noise levels and vibration impacts. Noise sensitive uses include, but are not limited to, hospitals, schools, religious facilities, convalescent homes and businesses with highly sensitive equipment. Discourage the siting of noise-sensitive uses in areas in excess of 65 dBA CNEL without appropriate mitigation and locate noise sensitive uses away from noise sources unless mitigation measures are included in development plans.

Policy N1.6: Noise Reduction Measures. Encourage the use of construction methods, state-of-the-art noise abating materials and technology and creative site design including, but not limited to, open space, earthen berms, parking, accessory buildings, and landscaping to buffer new and existing development from noise and to reduce potential conflicts between ambient noise levels and noise-sensitive land uses. Use sound walls only when other methods are not practical or when recommended by an acoustical expert.

Policy N1.7: Noise and Vibration from New Non-Residential Development. Design non-residential development to minimize noise impacts on nearby uses. Where vibration impacts may occur, reduce impacts on residences and businesses through the use of setbacks and/or structural design features that reduce vibration to levels at or below the guidelines of the Federal Transit Administration (FTA) near rail lines and industrial uses.

Policy N1.8: Potential Annoying or Harmful Noise. Preclude the generation of annoying or harmful noise on stationary noise sources, such as construction and property maintenance activity and mechanical equipment.

City of Menlo Park Municipal Code

In addition to the City General Plan, the City's Municipal Code also contains noise regulations. Chapter 8.06 of the City's Municipal Code contains noise limitations and exclusions for land uses within the city. The noise ordinance addresses noise limits that would constitute a noise disturbance, primarily as measured at residential land uses. The City's Municipal Code regulations below would be applicable to the Project.

8.06.030 Noise Limitations

Except as otherwise permitted in this chapter, any source of sound in excess of the sound level limits set forth in Section 8.06.030 shall constitute a noise disturbance. For purposes of determining sound levels from any source of sound, sound level measurements shall be made at a point on the receiving property nearest where the sound source at issue generates the highest sound level.

1. For all sources of sound measured from any residential property:
   A. "Nighttime" hours (10:00 p.m. to 7:00 a.m.)—50 dBA
   B. "Daytime" hours (7:00 a.m. to 10:00 p.m.)—60 dBA

8.06.040 Exceptions

a. Construction Activities
   1. Construction activities between the hours of 8:00 a.m. and 6:00 p.m. Monday through Friday.
   4. Notwithstanding any other provision set forth above, all powered equipment shall comply with the limits set forth in Section 8.06.040(b).

b. Powered Equipment

1. Powered equipment used on a temporary, occasional or infrequent basis operated between the hours of 8:00 a.m. and 6:00 p.m. Monday through Friday. No piece of equipment shall generate noise in excess of 85 dBA at 50 feet.

c. Deliveries

1. Deliveries to food retailers and restaurants.
2. Deliveries to other commercial and industrial businesses between the hours of 7:00 a.m. and 6:00 p.m. Monday through Friday and 9:00 a.m. to 5:00 p.m. Saturdays, Sundays, and holidays.

8.06.050 Exemptions

a. Sound Generated by Motor Vehicles. Sound generated by motor vehicles, trucks and buses operated on streets and highways, aircraft, trains, and other public transport.

1. This exemption shall not apply to the operation of any vehicle including any equipment attached to any vehicle (such as attached refrigeration and/or heating units or any attached auxiliary equipment) for a period in excess of 10 minutes in any hour while the vehicle is stationary, for reasons other than traffic congestion.

Further, the zoning ordinance also contains regulations related to roof-mounted equipment.

16.08.095 Roof-mounted equipment.

Mechanical equipment, such as air-conditioning equipment, ventilation fans, vents, ducting, or similar equipment, may be placed on the roof of a building; provided, that such equipment shall be screened from view as observed at an eye level horizontal to the top of the roof-mounted equipment, except for the SP-ECR/D district, which has unique screening requirements, and all sounds emitted by such equipment shall not exceed fifty (50) decibels at a distance of fifty (50) feet from such equipment. (Ord. 979 § 3 (part), 2012: Ord. 819 § 1 (part), 1991)

Environmental Setting

Fundamentals of Environmental Noise and Vibration

Terminology

A brief description of the noise and vibration concepts and terminology used in this assessment is provided below.

- **Sound**. A vibratory disturbance transmitted by pressure waves through a medium such as air or water and capable of being detected by a receiving mechanism, such as the human ear or a microphone.
- **Noise.** Sound that is loud, unpleasant, unexpected, or otherwise undesirable.
- **Decibel (dB).** A unitless measure of sound on a logarithmic scale that indicates the squared ratio of sound pressure amplitude to a reference sound pressure amplitude. The reference pressure is 20 micropascals.
- **A-Weighted Decibel (dBA).** An overall frequency-weighted sound level in decibels that approximates the frequency response of the human ear. The dBA scale is the most widely used for environmental noise assessments.
- **Maximum Sound Levels (L_{max}).** The maximum sound level measured during the measurement period.

- **Equivalent Sound Level (L_{eq})**. The equivalent steady-state sound level that, in a stated period of time, would contain the same acoustical energy. The 1-hour A-weighted equivalent sound level (L_{eq} 1h) is the energy average of A-weighted sound levels occurring during a 1-hour period.
- **Day-Night Level (L_{dn}).** The energy average of the A-weighted sound levels occurring during a 24-hour period, with a 10 dB penalty added to sound levels between 10:00 p.m. and 7:00 a.m.
- **Community Noise Equivalent Level (CNEL).** The energy average of the A-weighted sound levels occurring during a 24-hour period, with 5 dB added to the sound levels occurring during the period from 7:00 p.m. to 10:00 p.m. and 10 dB added to the sound levels occurring during the period from 10:00 p.m. to 7:00 a.m. L_{dn} and CNEL are typically within 1 dBA of each other and, for all intents and purposes, are interchangeable.
- **Vibration Velocity Level (or Vibration Decibel Level, VdB).** The root-mean-square velocity amplitude for measured ground motion expressed in dB.
- **Peak Particle Velocity (PPV).** A measurement of ground vibration, defined as the maximum speed at which a particle in the ground is moving and expressed in inches per second (in/sec).

Overview of Noise and Sound

Noise is commonly defined as unwanted sound that annoys or disturbs people and potentially causes an adverse psychological or physiological effect on human health. Because noise is an environmental pollutant that can interfere with human activities, evaluation of noise is necessary when considering the environmental impacts of a proposed project.

Sound is characterized by various parameters that include the rate of oscillation of sound waves (frequency), the speed of propagation, and the pressure level or energy content (amplitude). In particular, the sound pressure level is the most common descriptor used to characterize the loudness of an ambient (existing) sound level. Although the decibel (dB) scale, a logarithmic scale, is used to quantify sound intensity, it does not accurately describe how sound intensity is perceived by human hearing. The human ear is not equally sensitive to all frequencies in the entire spectrum, so noise measurements are weighted more heavily for frequencies to which humans are sensitive in a process referred to as *A-weighted decibels* (dBA). Table 3.6-1 summarizes typical A-weighted sound levels for different noise sources.

Human sound perception, in general, is such that a change in sound level of 1 dB cannot typically be perceived by the human ear, a change in sound level of 3 dB is just noticeable, a change of 5 dB is clearly noticeable, and a change of 10 dB is perceived as doubling or halving the sound level. A doubling of actual sound energy is required to result in a 3 dB (i.e., barely noticeable) increase in noise; in practice, for example, this means that the volume of traffic on a roadway would typically need to double to result in a noticeable increase in noise.

The decibel level of a sound decreases (or attenuates) exponentially as the distance from the source of that sound increases. For a point source such as a stationary compressor or construction equipment, sound attenuates 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.[1] Atmospheric conditions,

[1] Federal Transit Administration. 2006. *Transit Noise and Vibration Impact Assessment.* FTA-VA-90-1003-06. Office of Planning and Environment. Available: <http://www.fta.dot.gov/documents/FTA_Noise_and_Vibration_Manual.pdf>. Accessed: October 6, 2015.

Table 3.6-1. Typical A-Weighted Sound Levels

Common Outdoor Activities	Sound Level (dBA)	Common Indoor Activities
	110	Rock band
Jet flyover at 1,000 feet		
	100	
Gas lawnmower at 3 feet		
	90	
Diesel truck at 50 mph at 50 feet		Food blender at 3 feet
	80	Garbage disposal at 3 feet
Noisy urban area, daytime		
Gas lawnmower at 100 feet	70	Vacuum cleaner at 3 feet
Commercial area		Normal speech at 3 feet
Heavy traffic at 300 feet	60	
		Large business office
Quiet urban area, daytime	50	Dishwasher in next room
Quiet urban area, nighttime	40	Theater, large conference room (background)
Quiet suburban area, nighttime		
	30	Library
Quiet rural area, nighttime		Bedroom at night, concert hall (background)
Rustling of leaves	20	
		Broadcast/recording studio
	10	
Lowest threshold of human hearing	0	Lowest threshold of human hearing

Source: California Department of Transportation. 2013. *Technical Noise Supplement to the Traffic Noise Analysis Protocol*. September. Available: <http://www.dot.ca.gov/hq/env/noise/pub/TeNS_Sept_2013A.pdf>. Accessed: October 6, 2015.

including wind, temperature gradients, and humidity, can change how sound propagates over distance and affect the level of sound received at a given location. The degree to which the ground surface absorbs acoustical energy also affects sound propagation. Sound that travels over an acoustically absorptive surface such as grass attenuates at a greater rate than sound that travels over a hard surface such as pavement. The increased attenuation is typically in the range of 1 to 2 dB per doubling of distance. Barriers such as buildings and topography that block the line of sight between a source and receiver also increase the attenuation of sound over distance.

Community noise environments are generally perceived as *quiet* when the 24-hour average noise level is below 45 dBA, *moderate* in the 45 to 60 dBA range, and *loud* above 60 dBA. Very noisy urban residential areas are usually around 70 dBA CNEL. Along major thoroughfares, roadside noise levels are typically between 65 and 75 dBA CNEL. Increments of 3 to 5 dB to the existing 1-hour L_{eq}, or to CNEL are commonly used as thresholds for an adverse community reaction to a noise increase. However, there is

evidence that incremental thresholds in this range may not be sufficiently protective in areas where noise-sensitive uses are located and CNEL is already high (i.e., above 60 dBA). In these areas, limiting noise increases to 3 dB or less is recommended.[2] Noise intrusions that cause short-term interior levels to rise above 45 dBA at night can disrupt sleep. Exposures to noise levels greater than 85 dBA of 8 hours or longer can cause permanent hearing damage.

Overview of Ground-borne Vibration

Operation of heavy construction equipment, particularly pile-driving equipment and other impact devices (e.g., pavement breakers), creates seismic waves that radiate along the surface of and downward into the ground. These surface waves can be felt as ground vibration. Vibration from the operation of this type of equipment can result in effects that range from annoyance for people to damage for structures. Variations in geology and distance result in different vibration levels, including different frequencies and displacements. In all cases, vibration amplitudes decrease with increased distance.

Perceptible ground-borne vibration is generally limited to areas within a few hundred feet of construction activities. As seismic waves travel outward from a vibration source, they cause rock and soil particles to oscillate. The actual distance that these particles move is usually only a few ten-thousandths to a few thousandths of an inch. The rate or velocity (in inches per second) at which these particles move is the commonly accepted descriptor of vibration amplitude, referred to as peak particle velocity (PPV).

Vibration amplitude attenuates over distance. This is a complex function of how energy is imparted into the ground and the soil or rock conditions through which the vibration is traveling.

The following equation is used to estimate the vibration level at a given distance for typical soil conditions.[3] PPV_{ref} is the reference PPV at 25 feet:

$$PPV = PPV_{ref} \times (25/\text{distance})^{1.5}$$

Table 3.6-2 summarizes typical vibration levels generated by construction equipment at the reference distance of 25 feet and other distances, as determined with use of the attenuation equation above.

Tables 3.6-3 and 3.6-4 summarize the guidelines developed by the California Department of Transportation (Caltrans) for damage and annoyance potential from the transient and continuous vibration that is usually associated with construction activity. The activities that are typical of continuous vibration include the use of excavation equipment, static compaction equipment, tracked vehicles, vehicles on a highway, vibratory pile drivers, pile-extraction equipment, and vibratory compaction equipment. The activities that are typical of single-impact (transient) or low-rate, repeated impact vibration include drop balls, blasting, the use of impact pile drivers, "pogo stick" compactors, and crack-and-seat equipment.[4]

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[2] Federal Transit Administration. 2006. *Transit Noise and Vibration Impact Assessment.* FTA-VA-90-1003-06. Office of Planning and Environment. Available: <http://www.fta.dot.gov/documents/FTA_Noise_and_Vibration_Manual.pdf>. Accessed: October 6, 2015.

[3] Federal Transit Administration. 2006. *Transit Noise and Vibration Impact Assessment.* FTA-VA-90-1003-06. Office of Planning and Environment. Available: <http://www.fta.dot.gov/documents/FTA_Noise_and_Vibration_Manual.pdf>. Accessed: October 6, 2015.

[4] California Department of Transportation. 2013. *Transportation and Construction Vibration Guidance Manual.* September. < http://www.dot.ca.gov/hq/env/noise/pub/TCVGM_Sep13_FINAL.pdf>. Accessed: January 7, 2016.

Table 3.6-2. Vibration Source Levels for Construction Equipment

Equipment	PPV at 25 Feet	PPV at 50 Feet	PPV at 75 Feet	PPV at 100 Feet	PPV at 175 Feet
Pile driver (sonic/vibratory)	0.734	0.2595	0.1413	0.0918	0.0396
Hoe ram	0.089	0.0315	0.0171	0.0111	0.0048
Large bulldozer	0.089	0.0315	0.0171	0.0111	0.0048
Loaded trucks	0.076	0.0269	0.0146	0.0095	0.0041
Jackhammer	0.035	0.0124	0.0067	0.0044	0.0019
Small bulldozer	0.003	0.0011	0.0006	0.0004	0.0002

Source: Federal Transit Administration. 2006. *Transit Noise and Vibration Impact Assessment.* FTA-VA-90-1003-06. Office of Planning and Environment. Available: <http://www.fta.dot.gov/documents/FTA_Noise_and_Vibration_Manual.pdf>. Accessed: October 6, 2015.

Table 3.6-3. Vibration Damage Potential Threshold Criteria Guidelines

	Maximum PPV (in/sec)	
Structure and Condition	**Transient Sources[a]**	**Continuous/Frequent Intermittent Sources[b]**
Extremely fragile historic buildings, ruins, ancient monuments	0.12	0.08
Fragile buildings	0.2	0.1
Historic and some old buildings	0.5	0.25
Older residential structures	0.5	0.3
New residential structures	1.0	0.5
Modern industrial/commercial buildings	2.0	0.5

Source: California Department of Transportation. 2013. *Transportation and Construction Vibration Guidance Manual.* September. Available: <http://www.dot.ca.gov/hq/env/noise/pub/TCVGM_Sep13_FINAL.pdf>. Accessed: January 7, 2016.

Notes:

a. Transient sources create a single, isolated vibration event (e.g., blasting or drop balls).

b. Continuous/frequent intermittent sources include impact pile drivers, pogo-stick compactors, crack-and-seat equipment, vibratory pile drivers, and vibratory compaction equipment.

Table 3.6-4. Vibration Annoyance Potential Criteria Guidelines

	Maximum PPV (in/sec)	
Structure and Condition	**Transient Sources[a]**	**Continuous/Frequent Intermittent Sources[b]**
Barely perceptible	0.04	0.01
Distinctly perceptible	0.25	0.04
Strongly perceptible	0.9	0.10
Severe	2.0	0.4

Source: California Department of Transportation. 2013. *Technical Noise Supplement to the Traffic Noise Analysis Protocol*. September. Available: <http://www.dot.ca.gov/hq/env/noise/pub/TeNS_Sept_2013A.pdf>. Accessed: October 6, 2015

Notes:

a. Transient sources create a single, isolated vibration event (e.g., blasting or drop balls).

b. Continuous/frequent intermittent sources include impact pile drivers, pogo-stick compactors, crack-and-seat equipment, vibratory pile drivers, and vibratory compaction equipment.

Ground-borne vibration can also be quantified by the root-mean-square (RMS) velocity amplitude, which is useful for assessing human annoyance. The RMS amplitude is expressed in terms of the velocity level in decibel units (VdB). The background vibration velocity level in residential areas is usually around 50 VdB or lower. The vibration velocity level threshold of perception for humans is approximately 65 VdB. Most perceptible indoor vibration is caused by sources within buildings, such as the operation of mechanical equipment, movement of people, or the slamming of doors. Typical outdoor sources of perceptible ground-borne vibration are heavy construction equipment, steel-wheeled trains, and traffic on rough roads. If a roadway is smooth, the ground-borne vibration from traffic is rarely perceptible.

Table 3.6-5 summarizes the typical ground-borne vibration velocity levels and average human response to vibration that may be anticipated when a person is at rest in quiet surroundings. If the person is engaged in any type of physical activity, vibration tolerance increases considerably. The duration of the event has an effect on human response, as does its daily frequency of occurrence. Generally, as the duration and frequency of occurrence increase, the potential for adverse human response increases.

Table 3.6-5. Typical Levels of Ground-borne Vibration

Human or Structural Response	Vibration Velocity Level (VdB)	Typical Sources (50 feet from source)
Threshold for minor cosmetic damage to fragile buildings	100	Blasting from construction project
		Bulldozer or heavy-tracked construction equipment
Difficulty in reading computer screen	90	
		Upper range of commuter rail
Threshold for residential annoyance for occasional events (e.g., commuter rail)	80	Upper range of rapid transit
Threshold for residential annoyance for frequent events (e.g., rapid transit)		Typical commuter rail Bus or truck over bump
	70	Typical rapid transit
Approximate threshold for human perception of vibration; limit for vibration-sensitive equipment		Typical bus or truck on public road
	60	
		Typical background vibration
	50	

Source: Federal Transit Administration. 2006. *Transit Noise and Vibration Impact Assessment*. FTA-VA-90-1003-06. Office of Planning and Environment. Available: <http://www.fta.dot.gov/documents/FTA_Noise_and_Vibration_Manual.pdf>. Accessed: October 6, 2015.

Ground-borne noise is a secondary component of ground-borne vibration. When a building structure vibrates, noise is radiated into the interior of the building. Typically, this is a low-frequency sound that can be perceived as a low rumble. The magnitude of the sound depends on the frequency characteristic of the vibration and the manner in which the room surfaces in the building radiate sound. Ground-borne noise is quantified by the A-weighted sound level inside the building. The sound level accompanying vibration is generally 25 to 40 dBA lower than the vibration velocity level in VdB. Ground-borne vibration levels of 65 VdB can result in ground-borne noise levels of up to 40 dBA, which can disturb sleep. Ground-borne vibration levels of 85 VdB can result in ground-borne noise levels of up to 60 dBA, which can be annoying to daytime noise-sensitive land uses such as schools.[5]

[5] Federal Transit Administration. 2006. *Transit Noise and Vibration Impact Assessment*. FTA-VA-90-1003-06.

Existing Site Conditions and Noise Sources

The TE Connectivity (TE) Campus located at the Project site has multiple sources of stationary noise-generating equipment, which can be observed from surrounding land uses.[6] The equipment at the TE Campus that generates noise includes cooling towers, boilers, baghouses, air compressors, chiller utility pumps, and beam tower vents. TE Connectivity and other tenants are currently in the process of vacating the Project site. As a result, some equipment has been decommissioned, while other equipment is still in operation.

The TE Campus is intended to operate within the confines of the noise conditions specified in the ministerial permit designated for the Campus. The permit was established for the TE Campus to ensure that surrounding land uses that are sensitive to noise would not be subject to adverse effects from the noise-generating equipment present at the Campus. To document compliance with the ministerial permit, noise levels generated at the TE Campus were measured in a noise monitoring and abatement report, submitted to the City in January 2015.[7] Noise was measured at the following three locations south of the TE Campus, along the Dumbarton spur railroad tracks.

- At the chain-link fence, adjacent to Beechwood School
- At the residential property line, 260 feet south of existing Buildings 307 and 308
- At the residential property line, 309 feet south of existing Building 309

At the first two locations, noise from the TE Campus was observed to be louder than the background levels of noise during some periods, while at the third location, TE Campus noise was not observed. At the second and third locations, noise from the TE Campus was found to comply with the conditions of the ministerial permit. Noise measured at the first location was found to comply with the permit during the daytime hours but to comply with the permit only partially during the nighttime hours. Please refer to Appendix 3.6-1 of the noise assessment report, which includes the full dataset of measured noise levels.

Existing Noise Levels

Figure 2-1 in Chapter 2, *Project Description*, depicts the Project site location and adjacent uses. Noise-sensitive land uses[8] in the Project vicinity include multiple neighborhoods of single-family residences, a neighborhood playground (Hamilton Park), Beechwood School, Mt. Olive Apostolic Original Holy Church of God, the Onetta Harris Community Center (including the Belle Haven Pool and Belle Haven Youth Center), and Menlo Park Senior Center. All of these sensitive land uses are south of the Project site. The shortest distance between the Project site and the nearest sensitive land use is approximately 75 feet, which is the distance to the single-family residences located on Sandlewood Street. Beechwood School is located 180 feet from the Project site at its closest distance, and an existing office building is located

[6] Throughout this EIR, the employee activity at the existing TE Connectivity site is considered to be zero for reasons discussed in Chapter 3.0, *Environmental Impact Analysis*. However, because the Project site was partially occupied at the time measurements were taken, the activity on the site is reflected in the noise measurements. As a result, the analysis presented in this section (unlike other sections) assumes employee activity at the site.

[7] Tyco Electronics. 2015. *TE Connectivity Annual Noise Monitoring and Abatement Report for CY 2014*. January 30. Available in Appendix 3.6-1.

[8] Noise-sensitive land uses are generally defined as locations where people reside or where the presence of unwanted sound could adversely affect the use of the land. Noise-sensitive land uses typically include single- and multi-family residential areas, health care facilities, lodging facilities, and schools. Recreational areas where quiet is an important part of the environment can also be considered sensitive to noise. Some commercial areas may be considered noise sensitive as well, such as the outdoor restaurant seating areas.

approximately 200 feet west of the Project site at its closest distance. Kelly Park, located southwest of the Project site, is used primarily for active recreation, such as tennis, soccer, and swimming; therefore, it is not considered a noise-sensitive land use for this analysis.

The existing ambient noise environment in the Project area is characteristic of an urban environment (e.g., highway and local traffic, aircraft overflights, commercial noise sources). Noise from vehicle traffic on Bayfront Expressway/State Route 84 (Bayfront Expressway) is the dominant noise source at the Project site. To a lesser extent, the noise environment at the Project site is also influenced by vehicle traffic on local roadways (Constitution Drive and Chilco Street) as well as existing industrial machinery noise and construction activity noise on the Project site.

To quantify existing ambient noise levels in the Project area, long-term (multi-day) and short-term (15-minute) ambient noise measurements were conducted between October 1 and October 5, 2015, for the long-term measurements, and on October 1, 2015, for the short-term measurements. Measurements were conducted at locations in and around the Project site. Long-term measurement locations were selected to capture 24-hour noise levels in areas that are sensitive to noise throughout the day, such as residences and schools. In general, short-term measurements were selected to capture noise levels in areas that are not sensitive to noise throughout the day.

The locations of the noise measurement sites are shown in Figure 3.6-1. Tables 3.6-6 and 3.6-7 summarize the results of the noise measurement survey. For the complete dataset of measured noise levels, please refer to Appendix 3.6-2.

Table 3.6-6. Long-Term Noise Levels Measurements in and around the Project Site

				Measured L_{dn} by date			
Site	**Site Description**	**Date and Time**	**Primary Noise Sources**	**Thurs. 10/1[a]**	**Fri. 10/2**	**Sat. 10/3**	**Sun. 10/4**
LT-1	Soccer field at Beechwood School	Start: 10/01/2015 10:56 a.m. End: 10/05/2015 12:12 p.m.	Machinery noise from existing equipment on Project site; construction noise at Project site; children playing on soccer field; vehicles traveling on Chilco Street	65.7	70.5	69.8	68.5
LT-2	Eastern terminus of Sandlewood Street	Start: 10/01/2015 11:24 a.m. End: 10/05/2015 12:26 p.m.	Vehicles on Sandlewood Street and Hamilton Avenue; machinery noise from existing land uses on Project site; construction noise at Project site; vehicles entering and exiting Mt. Olive Apostolic Original Holy Church	54.3	60.9	59.0	63.8

Note: See Appendix 3.6-2 for data.

LT = long-term (multi-day) ambient noise measurement.

a. Measurements on this date started in the late morning; thus, a complete,24-hour dataset was not collected. L_{dn} values are based on the partial-day data. Partial-day data were also collected on October 5 but are not reported here because of the limited measurement period. See Appendix 3.6-2 for all available data measured on each day.

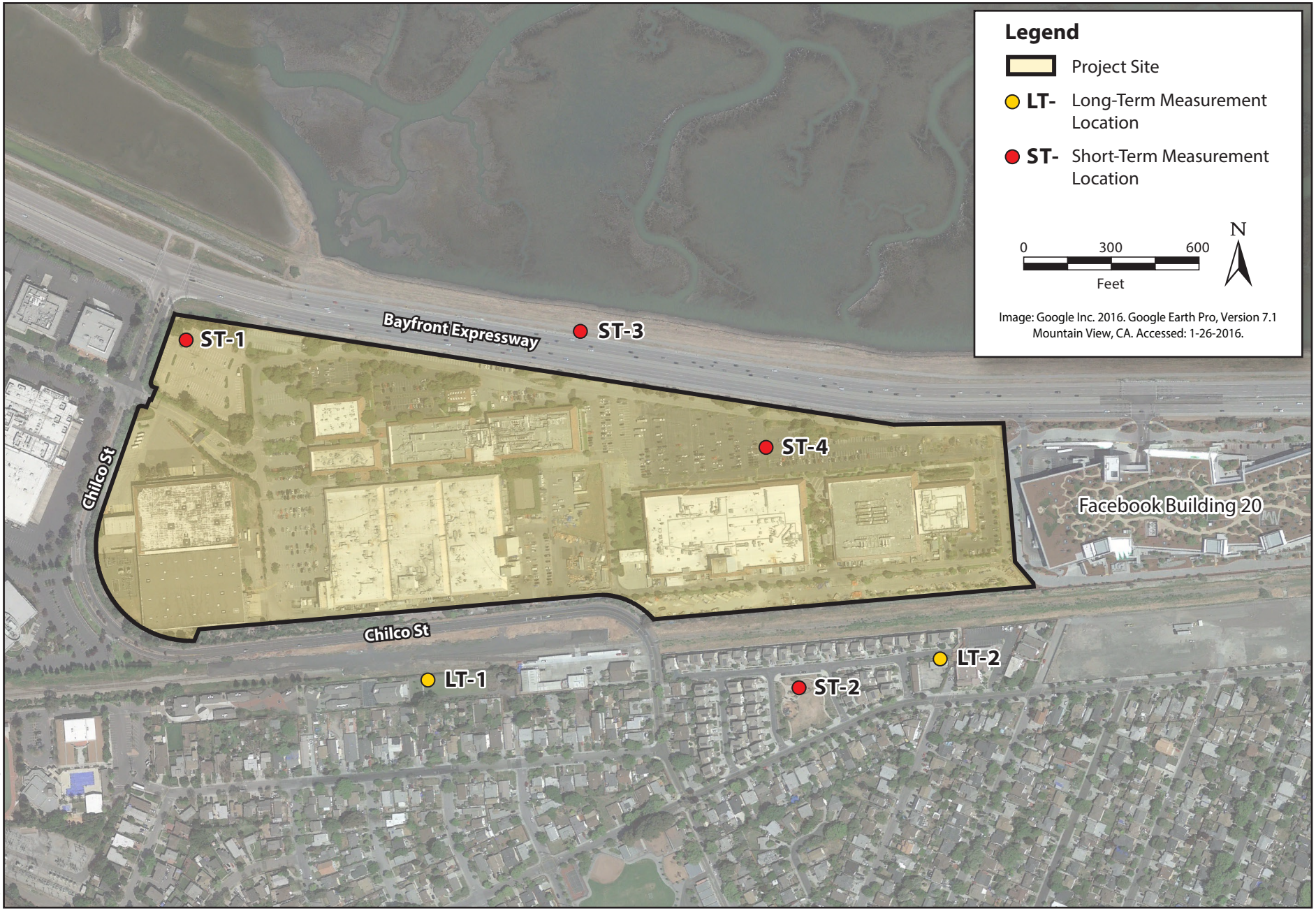

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Figure 3.6-1
Noise Measurement Locations
Facebook Campus Expansion Project Draft EIR

Table 3.6-7. Short-Term Noise Levels Measurements in and around the Project Site

Site	Site Description	Date and Time	Primary Noise Sources	Measured Noise Level (dBA)		
				L_{eq}	L_{max}	L_{min}
ST-1	Parking lot at northwest corner of Project site (location of proposed hotel)	10/01/2015 at 1:11 p.m.	Distant traffic on Middlefield Road; distant aircraft overflight; distant train horn; wind blowing leaves	60.6	69.5	49.2
ST-2	Playground on Hamilton Avenue	10/01/2015 at 12:13 p.m.	Vehicles on Hamilton Avenue and roadways adjacent to the playground; aircraft; construction equipment; backup alarm indicators	56.6	74.9	43.2
ST-3	Bay Trail	10/01/2015 at 2:22 p.m.	Vehicles on SR 84; aircraft	66.5	80.2	44.7
ST-4	Parking lot, approximately 120 feet (in front of existing Building 307)	10/01/2015 at 1:42 p.m.	Vehicles on SR 84, on Constitution Drive, and entering and exiting the parking lot; aircraft	63.2	71.9	46.4

Note: See Appendix 3.6-2 for data files.
ST = short-term (15–20 minute) ambient noise measurement.

As shown in Table 3.6-6, existing noise levels at Beechwood School (Site LT-1) range from 65.7 to 70.5 L_{dn}. Noise sources observed at this location include vehicle traffic on Chilco Street, aircraft overflights, and a constant machinery-type noise, most likely originating from stationary equipment at the TE Campus. Because LT-1 is located at a soccer field, it is probable that the noise environment is also influenced by children playing on the field. Noise from construction activity at the TE Campus was also heard. As discussed above, noise originating at the TE Campus was, in general, found to comply with the conditions of the ministerial permit, except for noise measured near Beechwood School, which was found to be in partial compliance with the permit.

Noise levels on Sandlewood Street, near the single-family residences and Mt. Olive church (Site LT-2), range from 54.3 to 63.8 L_{dn} (Table 3.6-6). Noise sources observed at this location include vehicle traffic, aircraft overflights, and construction equipment at the Project site. The noise assessment report for the TE Campus ministerial permit[9] determined that noise in this area is in compliance with the conditions of the permit, but the noise report assessed stationary-source noise only. Construction equipment noise (primarily backup indicator noises from large equipment), which was heard during the measurement period on October 1, 2015, was not considered in the TE Campus noise assessment report.

Although aircraft overflights are periodically audible at Sites ST-1, ST-3, and ST-4, the noise environment at these sites was determined to be influenced primarily by vehicle traffic on State Route (SR) 84. As shown in Table 3.6-7, noise levels at these locations were 60.6 dBA L_{eq}, 66.5 dBA L_{eq}, and 63.2 dBA L_{eq}, respectively. Noise sources at ST-2, which was located at a neighborhood playground on

[9] Tyco Electronics. 2015. *TE Connectivity Annual Noise Monitoring and Abatement Report for CY 2014*. January 30. Available in Appendix 3.6-1.

Hamilton Avenue, include frequent aircraft overflights, construction noise at the Project site, and vehicles on surrounding roadways. SR 84 has less of an influence on noise levels at this location compared with the other short-term sites because this site is located much farther from this highway than the other sites. The presence of intervening structures, between the measurement location and SR 84, along with the increased distance from SR 84 to the measurement site, contribute to the lower measured noise level at ST-2 compared with the other locations. Average noise during the 15-minute measurement period was determined to be 56.6 dBA L_{eq} at ST-2.

Existing Ground-borne Vibration Levels

The most common sources of ground-borne vibration in the Project area and the city are construction activities and roadway truck traffic. Large delivery trucks typically generate ground-borne vibration velocity levels of around 63 VdB at 50 feet from the source.[10] As described above, the vibration velocity level threshold of perception for humans is approximately 65 VdB. Therefore, existing traffic vibration is neither distinctly nor generally perceptible. Additionally, vibration velocity levels of around 63 VdB would generally not produce ground-borne noise that would disturb sleep.

Environmental Impacts

This section describes the impact analysis related to noise for the Project. It describes the methods used to determine the impacts of the Project and lists the thresholds used to conclude whether an impact would be significant. Impacts are determined to be less than significant (LTS), less than significant with mitigation (LTS/M), or significant and unavoidable (SU); there can also be no impact (NI). Measures to mitigate (i.e., avoid, minimize, rectify, reduce, eliminate, or compensate for) significant impacts accompany each impact discussion, as needed.

Thresholds of Significance

In accordance with Appendix G of the California Environmental Quality Act (CEQA) Guidelines, the Project would be considered to have a significant effect if it would result in any of the conditions listed below.

- Expose persons to or generate noise levels in excess of standards established in a local general plan or noise ordinance or applicable standards of other agencies.
- Expose persons to or generate excessive ground-borne vibration or ground-borne noise levels.
- Result in a substantial permanent increase in ambient noise levels in the Project vicinity, above levels existing without the Project.
- Result in a substantial temporary or periodic increase in ambient noise levels in the Project vicinity, above levels existing without the Project.
- Be located within an airport land use plan area or, where such a plan has not been adopted, within 2 miles of a public airport or public use airport and expose people residing or working in the Project area to excessive noise levels.
- Be located in the vicinity of a private airstrip and expose people residing or working in the Project area to excessive noise levels.

[10] Federal Transit Administration. 2006. *Transit Noise and Vibration Impact Assessment.* FTA-VA-90-1003-06. Office of Planning and Environment. Available: <http://www.fta.dot.gov/documents/FTA_Noise_and_Vibration_Manual.pdf>. Accessed: October 6, 2015.

Methods for Analysis

This noise impact analysis evaluates the temporary noise increase associated with Project construction activities, operational noise generated by sound-generating equipment and onsite activities, traffic noise associated with Project-related changes in traffic patterns, and the exposure of the Project site to traffic and other noise sources.

Noise impacts associated with onsite demolition and construction activities were evaluated using the noise calculation method and construction equipment noise data in the Federal Highway Administration (FHWA) roadway construction noise model (RCNM). The noise data include the A-weighted L_{max}, measured at a distance of 50 feet from the construction equipment, and the utilization factors for the equipment. The utilization factor, which is the percentage of time each piece of construction equipment is typically operated at full power over the specified time period, is used to estimate L_{eq} values from L_{max} values. For example, the L_{eq} value for a piece of equipment that operates at full power over 50 percent of the time is 3 dB less than the L_{max} value.[11]

Direct and cumulative noise impacts associated with increased traffic volumes generated by the Project were evaluated for:

- Existing conditions,
- Existing conditions plus Project condition (existing plus year 2020 Project trips),
- Forecast general plan year 2040 without Project condition (cumulative no Project), and
- Forecast general plan year 2040 with Project condition (cumulative with Project).

Modeling was conducted with use of a spreadsheet that was based on the FHWA Traffic Noise Model (TNM), Version 2.5. This spreadsheet calculates the traffic noise level at a fixed distance from the centerline of a roadway according to the traffic volume, roadway speed, and vehicle mix that is predicted to occur under each condition. Average daily traffic volumes shown in Section 3.3, *Transportation and Traffic*, and received from TJKM (for the forecast general plan no-Project condition)[12] were utilized to determine the traffic noise impact along the major Project traffic access routes. A reasonable default vehicle mix (i.e., the proportion of automobiles, trucks, buses, and other vehicles) was used for future and Project-related traffic. Traffic noise was evaluated in terms of how Project-related traffic noise increases could affect existing noise-sensitive land uses as well as proposed onsite sensitive land uses along the major Project traffic access roadways.

The evaluation of operational noise impacts associated with proposed onsite activities and stationary sources was based on the proposed site plan layout and the types of noise-generating equipment and noise-generating activities provided by the Project Sponsor.

Noise from point sources (e.g., construction equipment and stationary operational equipment) was estimated using point-source attenuation of 6 dB per doubling of distance in addition to ground attenuation of 1.5 dB per doubling of distance, for a total of 7.5 dB of attenuation per doubling of distance. Noise generated by line sources (e.g., vehicles traveling on streets) was estimated using line-source attenuation of 3 dB per doubling of distance from the noise source.

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[11] Federal Highway Administration. 2006. FHWA Roadway Construction Noise Model User's Guide. FHWA-HEP-05-054. January.

[12] Burgett, Colin. TJKM. January 28, 2016—email. Refer to Appendix 3.6-3.

Impacts Not Evaluated in Detail

Adjacency to Airports. The closest airport to the Project site is Palo Alto Airport, located approximately 2.4 miles to the southeast. This general aviation airport does not serve commercial aviation and has one runway; the majority of its operations involve small single-engine planes.[13] This airport does not have an adopted Airport Land Use Compatibility Plan, and the Project site is more than 2 miles from the airport. Additionally, the Project site is not located within the noise-sensitive area identified by the airport.[14] Therefore, the Project would not be exposed to excessive noise from this airport. The closest airport with an adopted airport land use plan is San Carlos Airport, located about 4.6 miles to the northwest. This airport is included in the San Mateo County Comprehensive Airport Land Use Plan, adopted in December 1996. The Project site is not located within the 55 dBA noise contour of this airport.[15] There would be ***no impacts*** related to operations at public or private airports; therefore, these impacts are not evaluated further.

Impacts and Mitigation Measures

Impact NOI-1: Exposure to Excessive Noise Levels. The Project could expose persons to or generate noise levels in excess of standards established in the General Plan, noise ordinance or applicable standards of other agencies. (LTS/M)

Construction Noise

Construction is anticipated to occur over a period of approximately 4 years. According to the noise ordinance for the city, construction activities that occur between the hours of 8:00 a.m. and 6:00 p.m. Monday to Friday do not need to comply with the 60 dBA daytime standard outlined in the City Municipal Code. During these hours, however, the ordinance states that no piece of equipment shall generate noise in excess of 85 dBA at 50 feet. Construction occurring outside the hours of 8:00 a.m. to 6:00 p.m. would need to comply with the daytime (7:00 a.m. to 10:00 p.m.) noise standard in the noise ordinance (i.e., 60 dBA L_{eq}).

Standard construction work hours for the Project would be 7:00 a.m. to 7:00 p.m. Monday through Friday; therefore, 1 hour in the morning and 1 hour in the evening would not be covered by the exemption in the noise ordinance. During these 1-hour periods in the morning and evening that are outside the construction noise exemption period, the 60 dBA daytime noise limit in the noise ordinance would apply. Additionally, although standard construction work hours would end at 7:00 p.m. on weekdays, it is possible that construction activities could occur between the hours of 7:00 p.m. and 10:00 p.m. Monday through Friday and 8:00 a.m. and 6:00 p.m. on Saturdays, resulting in additional hours of construction activity that would not be covered by the 8:00 a.m. to 6:00 p.m. weekday exception of the noise ordinance. Construction occurring during these hours on weekdays and on Saturdays would be limited by the 60 dBA daytime noise limit in the noise ordinance. No noise-generating exterior building work or site work would occur on Sundays or holidays. As stated in Chapter 2, *Project Description*, construction activities would comply with the noise requirements in the

[13] AirNav.com. 2013. KPAO—Palo Alto Airport of Santa Clara County. Available: <http://www.airnav.com/airport/KPAO>. Accessed: September 9, 2015.
[14] City of Palo Alto. n.d. *Palo Alto Airport Noise Sensitive Area Map*. Available: <http://www.cityofpaloalto.org/gov/depts/pwd/palo_alto_airport/default.asp>. Accessed: September 9, 2015.
[15] County of San Mateo. 2002. *San Carlos Airport Master Plan Update Airport Modernization Project Draft Environmental Impact Report*.

City of Menlo Park Noise Ordinance (City Municipal Code Section 8.06) at all times. It should be noted that, during the construction exemption hours (8:00 a.m. to 6:00 p.m. on weekdays), the daytime noise limit does not apply; thus, construction noise can exceed the daytime noise limit of 60 dBA so long as no piece of equipment generates noise in excess of 85 dBA at 50 feet (per City Municipal Code Section 8.06.040 b.1).

In general, construction equipment would operate throughout the Project site on a daily basis and would only occasionally operate on the edges of the Project site closest to the adjacent uses. Additionally, to evaluate as a worst-case scenario, the construction schedule assumes that a maximum of two buildings would be under construction at the same time. Construction activities at each building are expected to include building demolition, site grading and utility installation, building foundation construction, construction of the building cores and shells, and paving/architectural coatings. For each phase of construction activity, construction would require the use of heavy-duty, noise-generating equipment. Construction activities would also involve the use of small power tools, generators, mechanical equipment, and other noise sources. During each construction phase, there would be a different mix of equipment operating. Therefore, noise levels would vary, based on the equipment in operation and the location of the construction activity.

Table 3.6-8 presents the typical L_{max} of the construction equipment that would be used for the Project's construction work. The A-weighted L_{max} levels are based on noise levels measured at a distance of 50 feet from the construction equipment. The utilization factors for the equipment are defined as the fraction of time that the equipment typically runs at maximum capacity. The utilization factors are used to estimate L_{eq} values from L_{max} values. The noise reference levels and utilization factors assumed for this analysis are from the FHWA Road Construction Noise Model User's Guide.[16]

It is important to note that the noise levels in Table 3.6-8 are typical values and based on the construction equipment that is likely to be used for Project construction; thus, there could be wide fluctuations in the noise levels, depending on actual site-specific conditions and the type and mix of equipment used at the construction site. As shown in Table 3.6-8, above, the loudest equipment piece, a pile driver, could generate noise levels of up to 94 dBA L_{eq} at a distance of 50 feet. This is the only piece of equipment on the above list that would result in noise levels in excess of the 85 dBA standard for powered equipment, as described in the City Noise Ordinance. In addition, during hours outside of the weekday exemption of 8:00 a.m. to 6:00 p.m., it is possible that noise levels from construction activities could be in excess of the daytime (7:00 a.m. to 10:00 p.m.) noise ordinance noise limit of 60 dBA L_{eq}. Note that the nighttime limit of 50 dBA described in the noise ordinance would not apply because no construction activity is proposed to occur between 10:00 p.m. to 7:00 a.m.

Table 3.6-9 shows the estimated sound levels from the three loudest pieces of equipment as a function of distance, based on calculated point-source attenuation over "soft" (i.e., acoustically absorptive) ground.

[16] Federal Highway Administration. 2006. *FHWA Roadway Construction Noise Model User's Guide*. FHWA-HEP-05-054. January.

Table 3.6-8. Typical Noise Levels by Construction Equipment

Equipment	Acoustical Utilization Factor (%)	Typical Noise Level (dBA) at 50 feet from Source	
		L_{max}	L_{eq}
Backhoe	40	78	74
Blade[a]	40	85	81
Bobcat[b]	40	79	75
Concrete crusher[c]	20	90	83
Crane	16	81	73
Dump truck	40	77	72
Excavator	40	81	77
Generator	50	81	78
Gradall	40	83	79
Pickup truck	40	75	82
Pile driver	20	101	94
Scraper	40	84	80
Tire wash[d]	10	82	72

Source: Federal Highway Administration. 2006. *FHWA Roadway Construction Noise Model User's Guide.* FHWA-HEP-05-054. January.

Notes:

a. Based on FHWA noise level for a grader.
b. Based on FHWA noise level for a front-end loader.
c. Based on FHWA noise level for a concrete saw.
d. Based on FHWA noise level for a vacuum street sweeper.

Table 3.6-9. Calculated Reasonable Worst-Case Construction Noise Emission Levels[a]

Distance between Source and Receiver (feet)	Geometric Attenuation (dB)	Ground Effect Attenuation (dB)	Calculated L_{max} Sound Level (dBA)[b]	Calculated L_{eq} Sound Level (dBA)[b]
50	0	0.0	101	95
100	-6	-1.5	94	87
200	-12	-3.0	86	79
300	-16	-3.9	82	75
400	-18	-4.5	79	72
500	-20	-5.0	76	70
600	-22	-5.4	74	68
700	-23	-5.7	73	66
800	-24	-6.0	71	64
900	-25	-6.3	70	63
1,000	-26	-6.5	69	62
1,200	***-28***	***-6.9***	***67***	***60***
1,400	-29	-7.2	65	58
1,600	-30	-7.5	64	57
1,800	-31	-7.8	63	56
2,000	-32	-8.0	61	54
2,200	-33	-8.2	60	53
3,000	-36	-8.9	57	50

Note: ***Bold italic*** text indicates that construction noise (L_{eq}) from the Project would exceed City of Menlo Park Municipal Code noise limitations at approximately 1,200 feet.

a. Noise levels in this table are from the three loudest pieces of equipment only.

b. Noise levels in this table are unmitigated and therefore do not include the mitigation described below under Mitigation Measure NOI-1.1.

As discussed previously, noise from construction activities between the hours of 8:00 a.m. and 6:00 p.m. Monday through Friday is exempt from the general City of Menlo Park Noise Ordinance limitations; therefore, construction noise would not need to comply with the 60 dBA L_{eq} daytime noise limitation during these hours. However, construction noise occurring between 7:00 a.m. and 8:00 a.m., between 6:00 p.m. and 10:00 p.m., and on Saturdays would not be included in this exception and would need to comply with the daytime (7:00 a.m. to 10:00 p.m.) noise standard of the noise ordinance of 60 dBA L_{eq}. Comparing the noise levels in Table 3.6-9 to the City of Menlo Park Noise Ordinance limitations for daytime hours shows that construction noise could exceed the 60 dBA L_{eq} limit at residential properties within 1,200 feet. However, it is also important to note that noise levels would most likely attenuate to below 60 dBA at less than 1,200 feet because the calculated noise levels in Table 3.6-9 do not account for local shielding effects. Buildings, fences, trees, and other features would further attenuate the propagation of noise in the Project area; thus, the distances specified in Table 3.6-9 represent a reasonable worst-case scenario of construction noise because they do not assume any intervening structures. In addition, the Project contractor would implement certain Project requirements to reduce potential construction noise impacts. These include ensuring that truck routes would be one way to reduce the need for backup alarms on equipment, performing continuous noise monitoring at the

perimeter of the Project site (noise data would be provided to the City on a monthly basis), and installing signage with the disturbance coordinator's contact information for questions, comments, and complaints from the public. Nevertheless, as discussed above, construction activities could result in noise that would exceed the Menlo Park 85 dBA limit for powered equipment at 50 feet during the hours between 8:00 a.m. and 6:00 p.m. and be in excess of 60 dBA L_{eq} during "daytime" (7:00 a.m. to 10:00 p.m.) hours before or after this range (the 50 dBA nighttime noise limit would not apply during these hours). This could result in a ***potentially significant*** impact.

MITIGATION MEASURE. Mitigation Measure NOI-1.1 would reduce construction-related impacts by locating equipment away from sensitive land uses, requiring sound control devices on equipment, utilizing noise-reducing enclosures, and implementing other practices. After implementing these practices, noise from construction activities would be reduced to less than 85 dBA at 50 feet between the hours of 8:00 a.m. and 6:00 p.m. on weekdays, less than 60 dBA at nearby sensitive receptors between the hours of 7:00 a.m. and 8:00 a.m. and 6:00 p.m. and 10:00 p.m. on weekdays, and between 7:00 a.m. and 10:00 p.m. on Saturdays. Thus, this impact would be ***less than significant with mitigation***.

NOI-1.1: Implement Noise Control Measures to Reduce Construction Noise during Project Construction. The Project Sponsor shall submit a Construction Noise Plan for review and approval by the Planning and Building Divisions prior to the issuance of the demolition permit. The Project Sponsor shall comply with construction noise limits specified in Section 8.06 of the City of Menlo Park Municipal Code by implementing measures during demolition and construction of the Project. These measures may include, but are not limited to:

- To the extent feasible, schedule the noisiest construction activities, such as demolition and grading activities, during times that would have the least impact on nearby residential and other receptors. This could include restricting construction activities in the areas of potential impact to the early and late hours of the workday, such as from 8:00 a.m. to 10:00 a.m. or 4:00 p.m. to 6:00 p.m., Monday through Friday.
- Use best available noise control techniques (e.g., improved mufflers, equipment redesign, intake silencers, ducts, engine enclosures, acoustically attenuating shields or shrouds) on equipment and trucks used for Project construction wherever feasible.
- Use hydraulically or electrically powered impact tools (e.g., pile drivers, jack hammers, pavement breakers, rock drills) used for Project construction wherever possible to avoid noise associated with compressed air exhaust from pneumatically powered tools. However, where use of pneumatic tools is unavoidable, use an exhaust muffler on the compressed air exhaust; this muffler can lower noise levels from the exhaust by up to about 10 dBA. Use external jackets on the tools themselves where feasible. This could achieve a reduction of 5 dBA. Use quieter equipment, such as drills, rather than impact equipment whenever feasible.
- Use "quiet" gasoline-powered compressors or electric compressors, and use electric rather than gasoline- or diesel-powered forklifts for small lifting to the extent feasible.
- Locate stationary noise sources, such as temporary generators, as far from nearby receptors as possible; such sources shall be muffled and enclosed within temporary enclosures and shielded by barriers or other measures to the extent feasible.

- Install temporary noise barriers (generally approximately 8 feet in height) around construction areas adjacent to sensitive receptors to reduce construction noise from equipment to acceptable levels. Specifically, the noise barriers shall reduce noise levels during the hours of 8:00 a.m. to 6:00 p.m. on weekdays to 85 dBA at a distance of 50 feet from the construction equipment. In addition, the noise barriers shall reduce overall construction noise to less than 60 dBA L_{eq}, as measured at the applicable property lines of adjacent uses, during the hours of 7:00 a.m. to 8:00 a.m. and 6:00 p.m. to 10:00 p.m. weekdays and 7:00 a.m. to 10:00 p.m. on Saturdays. The noise barriers shall be installed unless an acoustical engineer submits documentation that confirms that the barriers are not necessary to achieve these attenuation levels or provides specific locations and heights that would achieve the required attenuation.
- Prohibit trucks from idling along streets serving the construction site.
- Prior to any pile-driving activities, notify all surrounding property owners and occupants within 300 feet of the Project site, informing them of the estimated start date and duration.
- Implement "quiet" pile-driving technology (e.g., vibratory pile driving or pre-drilled pile holes) where feasible, in consideration of geotechnical and structural requirements and conditions.
- Monitor the effectiveness of noise attenuation measures by taking noise measurements during pile-driving activities to ensure compliance with the 85 dBA standard at 50 feet for construction equipment and during general construction occurring during non-exempted daytime hours to ensure compliance with the 60 dBA L_{eq} daytime standard.

Operational Noise

Traffic

Impacts on Offsite Uses. The Project would lead to an increase in traffic in the vicinity of the Project site. Section 3.3, *Transportation and Traffic*, provides average daily traffic (ADT) data for 87 segments in the general vicinity of the Project; however, many of these roadway segments were either located far away from the Project site (where Project traffic would have little effect) or would not experience substantial traffic volume increases as a result of Project implementation. Note that a 10 percent increase in traffic generally results in an approximately 1 dB increase in noise, which is not considered to be a substantial increase in noise. To provide a conservative analysis, all roadway segments where Project-generated traffic would increase the total roadway volumes by 10 percent or more were considered in the analysis. After these segments were selected for analysis, segments that were located within the area bounded by Bay Road to the south, University Avenue to the east, and Marsh Road to the west (as well as a few additional segments located just outside of this area), regardless of the Project-related traffic volume increase, were added to the list of segments to be analyzed to characterize the existing and future noise environment in proximity to the Project for informational purposes.

The Project would result in significant impacts related to traffic noise along a roadway segment if the resulting traffic noise level would exceed the applicable land use compatibility standard for the adjacent land use where existing levels were below the standard or, if the Project-related increase is 3 dB or greater, in areas where the standard is exceeded under existing conditions. As described above, a change in sound level of 3 dB is considered barely noticeable. According to the Noise Element,

residential land uses are normally compatible with a noise level of 60 L_{dn}, hotels are normally compatible with noise levels of up to 65 L_{dn}, and commercial uses are normally compatible with noise levels of 70 L_{dn}.

An initial analysis was conducted using a reference distance of 50 feet from each roadway segment centerline. Modeling results demonstrated that Project-generated traffic would have the potential to increase noise levels to above 60 L_{dn} in residential areas where existing traffic volumes do not currently result in an exceedance of the standard. This analysis indicated that significant impacts could occur at residential outdoor use areas along the following roadway segment (additional data presented in Appendix 3.6):

- Chilco Street between Hamilton Avenue and Terminal Avenue

Note that the segment of Chilco Street between Constitution Drive and Bayfront Expressway and the segment of Constitution Drive between Chilco Street and Chrysler Drive also resulted in with-Project noise levels above 60 L_{dn} in areas where existing noise levels were modeled to be less than 60 L_{dn}. However, the only nearby receptors at those segments are commercial land uses (with a standard of 70 L_{dn}); therefore, the 70 L_{dn} standard is not exceeded along these segments.

The analysis along the segment of Chilco Street between Hamilton Avenue and Terminal Avenue was then further refined. Rather than utilizing the typical reference distance, the modeling distance was adjusted to reflect the actual distance to the receivers (specifically, the residential outdoor use areas) along this segment. When accounting for the actual distances to receptors, this segment would still experience a significant impact related to traffic noise. The closest outdoor use area associated with a residence is located approximately 30 feet from the roadway centerline. Modeling for this closer distance results in an existing noise level of 59 L_{dn} and existing plus-Project noise level of 62 L_{dn}. These results indicate an instance in which Project-added traffic increases the noise levels from below the 60 L_{dn} standard to a level above the standard; the Project-added traffic increases noise levels by 3 dB.

Although these results demonstrate that traffic noise along this segment could result in significant impacts, only one receptor along the segment (471 Hamilton Avenue) is close enough to the roadway to actually experience potentially significant noise levels. Furthermore, although there are two other residences and one church along this roadway segment, none of these buildings have outdoor use areas close to the roadway; all other outdoor use areas along this segment (besides the area for 471 Hamilton Avenue) are more than 90 feet away from the roadway centerline and shielded from Chilco Street by buildings.

The outdoor use area for 471 Hamilton Avenue, which is approximately 30 feet from the roadway centerline, currently has a privacy fence that meets the standard for noise attenuation barriers. The wall is solid wood and has no cracks or gaps through or below it. The FHWA Traffic Noise Model was used to estimate the attenuation provided by the existing solid wood fence. Given the height of the fence and site geometry, this wall is expected to reduce traffic noise by approximately 4 dB.

Because the existing plus-Project noise level at the only residential receptor with potential impacts along this segment (30 feet from the roadway centerline) was modeled to result in a noise level of only 2 dB more than the applicable threshold (refer to Table 3.6-10), the 4 dB reduction in noise levels achieved by the existing privacy fence would reduce impacts related to with-Project noise levels at this receptor to ***less than significant***.

Table 3.6-10. Direct Traffic Noise Levels and Potential Impacts at Actual Distances to Offsite Receptors

Roadway	Segment	Approx. Distance to Nearest Receptor (feet)	Receptor Land Use Type	Compatibility Standard (Normally Acceptable) (L_{dn})	Existing L_{dn} at Receptor Distance[a]	Existing plus-Project (2020) L_{dn} at Receptor Distance[a]	Existing plus-Project Noise Exceeds Standard?	Difference (dB)	Potentially Significant Impact?
Chilco Street	Constitution Dr. to Bayfront Expwy.	100	C	70	60	64	No	NA	No
Constitution Drive	Chilco St. to Chrysler Dr.	40	C	70	59	63	No	NA	No
Chilco Street	Hamilton Ave. to Terminal Ave.	30	R	60	59	62	**Yes**	**3.0**	**Yes**[b]

Notes:

Bold = potentially significant impact, R = residential, C = Commercial, NA = not applicable (because standard not exceeded)

a. Modeling results presented in this table do not account for shielding or attenuation offered by buildings and privacy fences located between the roadway and nearby receptors.

b. This impact is identified as potentially significant because Project traffic could increase noise levels to above 60 L_{dn}. However, the impact would be less than significant because, as discussed above, the existing privacy fence at 471 Hamilton Avenue would reduce noise to a less-than-significant level.

Impacts on Onsite Uses. The California Supreme Court held that lead agencies are not required to analyze the impacts of the environment on a project's future users or residents, unless the project exacerbates existing environmental hazards (see *California Building Industry Association v. Bay Area Air Quality Management District* [2015], 62 Cal. 4th 369) or the legislature indicates by specific code (Public Resources Code Sections 21096, 21151.8, 21155.1, 21159.21, 21159.22, 21159.23, and 21159.24). Therefore, this analysis does not assess the potential for noise impacts from existing noise sources on onsite Project uses, unless the Project would increase the noise level from the existing noise sources.

The Project would result in the addition of traffic along some roadway segments in the vicinity of the Project site. Therefore, the Project has the potential to increase the noise level from existing noise sources. In light of the *California Building Industry Association v. Bay Area Air Quality Management District* case, noise impacts on onsite uses (specifically, the proposed hotel or outdoor common areas) should be assessed.

Project-generated traffic would have the potential to increase noise levels along the roadway segment adjacent to the proposed onsite hotel to above the 65 L_{dn} standard for hotel land uses. This roadway segment is:

- Chilco Street between Constitution Drive and Bayfront Expressway

For Chilco Street between Constitution Drive and Bayfront Expressway, the proposed onsite hotel would be located as close as approximately 125 feet away from the centerline of Chilco Street. When considering traffic on Chilco alone, with- and without-Project noise levels at this distance would be below the 65 L_{dn} standard (refer to Table 3.6-11 for the modeling results for this segment).

The proposed hotel would also be located approximately 230 feet away from the centerline of Bayfront Expressway. Existing noise levels at the location of the proposed hotel are currently estimated to be approximately 66 L_{dn}, based on the noise measurements (in L_{eq}) taken in the vicinity. The noise at this location includes traffic noise from both Bayfront Expressway and Chilco Street. Although Chilco Street–only traffic noise would not result in noise levels that would be in excess of the standard for hotels with existing plus-Project conditions, existing plus-Project traffic noise at the hotel site would be approximately 67 L_{dn} when adding traffic noise from Bayfront Expressway. This is in excess of the normally acceptable noise standard for hotel land uses, as described in the City's Noise Element. The City's Noise Element, however, includes a conditionally acceptable noise range for this use of up to 70 L_{dn}. Noise levels in this range are considered conditionally acceptable as long as interior noise is less than 45 dBA. This is generally achieved with conventional construction, because conventional construction (particularly for hotel uses) includes fresh-air supply systems or air-conditioning systems to provide fresh air with windows closed. Noise levels at the future hotel site, including potential noise from Bayfront Expressway, would be conditionally compatible with the proposed onsite hotel, and this impact would be ***less than significant***.

The potential exists for onsite outdoor use areas that face Bayfront Expressway to be exposed to noise levels that would be in excess of the noise compatibility standard. Measurements of existing Bayfront Expressway noise near the proposed outdoor use areas indicated that the noise level is approximately 66 L_{dn}. The current ADT along this roadway segment is approximately 56,000, according to Caltrans roadway data. Because the Project would add traffic to this already busy roadway, it would have the potential to exacerbate potential noise effects from this roadway. As stated in Section 3.3, *Transportation and Traffic*, the Project would increase daily (weekday) vehicle trips by 16,329. Much of this traffic would be entering the Project vicinity via US 101; however, conservatively assuming that all of this traffic would be traveling on Bayfront Expressway, this would result in a maximum noise increase

Table 3.6-11. Existing and Existing plus-Project Noise Levels at Actual Distance to Onsite Receptors along Significant Segments

Roadway	Segment	Approx. Distance to Nearest Receptor (feet)	Receptor Land Use Type	Compatibility Standard (Normally Acceptable)	Existing L_{dn} at Receptor Distance	Existing plus-Project (2020) L_{dn} at Receptor Distance	Existing plus-Project Noise Exceed Standard?	Difference	Significant Impact?
Chilco Street	Constitution Dr. to Bayfront Expwy.	125	H (p)	65	60	64	No	NA	No

Notes:
Bold = significant impact, H (p) = Hotel (proposed), NA = not applicable (because standard not exceeded)

of approximately 1 dB at the onsite outdoor use areas. Therefore, even if Project-added traffic were to increase the noise effects, the noise levels would still be below the normally acceptable standards for commercial and office outdoor use areas (i.e., 70 L_{dn}).

The onsite hotel may have outdoor use areas (most likely in the form of pool and deck areas). However, the Project Sponsor has stated that if these uses are included in the design, then they would be facing the south or the east. Having these uses oriented to face the south or the east would result in complete or partial shielding, helping to block the line of sight between Bayfront Expressway and the outdoor use areas. This complete or partial shielding is expected to result in a 2 to 3 dB reduction in noise levels from Bayfront Expressway (or more, if they are south-facing) at these areas, and noise levels from roadway traffic is not expected exceed the normally acceptable 65 L_{dn} level. Noise levels at the future Project outdoor use areas that would face Bayfront Expressway would be compatible with the applicable standards, and this impact would be ***less than significant***.

General Onsite Activity

At the time of the noise measurements, the Project site was occupied. Some noise from general onsite activity already occurs because of the occupied status of these parcels. With the Project, more employee and visitor activity would be possible. Therefore, an increase in the noise level associated with employee and hotel guest activity could occur. The outdoor common areas and amenities provided on the Project site are intended to encourage informal (and, on occasion, formal) gatherings throughout the day. Noise from employee and hotel guest activity is anticipated, such as conversations in outdoor use areas; this would occur mostly during the beginning and end of the workday and during lunch hours.

Sensitive receptors located in proximity to the Project site include multiple neighborhoods of single-family residences, a neighborhood playground (Hamilton Park), Beechwood School, Mt. Olive Apostolic Original Holy Church of God, the Onetta Harris Community Center (including the Belle Haven Pool and Belle Haven Youth Center), and Menlo Park Senior Center. All of these sensitive land uses are south of the Project site. The distance between the outdoor areas of the Project site, areas where people might gather to talk or socialize (non-parking lot outdoor use areas), and the nearest sensitive land use is more than 250 feet. This represents the distance between the southern edge of the publicly accessible open space located between proposed Buildings 21 and 22 and the single-family residences located on Sandlewood Street.

The noise level of a single individual talking at a normal level a distance of 1 meter is approximately 57 dBA.[17] Assuming approximately 100 people are talking in a single area, the noise level at a distance of 1 meter would be approximately 77 dBA. For this type of noise source, the decibel level of a sound decreases (or attenuates) exponentially as the distance from the source of that sound increases. The noise level of the 100 people would attenuate by about 6 dBA for each doubling of distance from the source. At the closest residences to the outdoor areas of the Project site, areas where people might gather to talk or socialize (approximately 250 feet from the green area located south of proposed Building 22), the noise level would attenuate to approximately 40 dBA. Therefore, human activity on the Project site would not exceed 60 dBA at the nearest noise-sensitive land use and would not exceed the noise ordinance limit for residential land uses or the City General Plan compatibility standard. Additionally, Bayfront Expressway (and other busy roadways) is located in the general vicinity of the Project site; these other noise sources have the potential to generate noise far in excess of noise from general human activity, such as people conversing. For noise impacts on the onsite hotel, because

[17] Harris, Cyril M. 1979. *Handbook of Noise Control*. McGraw-Hill. New York.

outdoor meeting or gathering spaces would not be located near the hotel, it is unlikely that noise from human activity would result in a noticeable increase in the existing noise levels. As discussed above for the offsite sensitive land uses, the hotel would be located near Bayfront Expressway, which would have a much greater influence over noise levels than human voices. Therefore, impacts related to human activity and conversations onsite would be ***less than significant.***

Heating, Ventilation, and Air-Conditioning Systems

The new buildings associated with the Project would require heating, ventilation, and air-conditioning (HVAC) systems. Mechanical HVAC equipment located on the ground or rooftops of new buildings would have the potential to generate noise levels that would average approximately 66 dBA at a distance of 50 feet.[18] Although exact locations of future systems are not known at this time, it is possible that HVAC systems for Building 21 could be located along the southern edge of the building. The southern edge of Building 21 is approximately 150 feet from nearby noise-sensitive land uses (residences along Sandlewood Street); therefore, the associated HVAC equipment for this building could be as close as 150 feet from these residential receptors. Noise from the HVAC systems could be reduced to approximately 56 dBA L_{dn} at these distances and, therefore, at the nearest residential receptor, based solely on standard attenuation that occurs over distance (6 dBA per doubling of distance). For equipment located on the ground, this noise level would be below the daytime (7:00 a.m. to 10:00 p.m.) noise standard of 60 dBA from the noise ordinance but in excess of the nighttime noise standard of 50 dBA. For roof-mounted equipment, 66 dBA at a distance of 50 feet would exceed the 50 dBA limit specified in zoning ordinance (Section 16.08.095). Further attenuation of HVAC noise would most likely be achieved by possible shielding from intervening structures; therefore, actual noise levels would be even lower than the estimates discussed here. However, the new HVAC systems may expose persons to noise in excess of the applicable nighttime noise standard and zoning ordinance (Section 16.08.095). Impacts related to HVAC usage would be ***potentially significant***.

MITIGATION MEASURE. Incorporation of Mitigation Measure NOI-1.2 would reduce noise levels at nearby residences to allowable levels (i.e., less than 50 dBA during nighttime hours for equipment located on the ground and less than 50 dBA at a distance of 50 feet for roof-mounted equipment). Therefore, this impact would be ***less than significant with mitigation.***

NOI-1.2: Implement Noise Control Measures to Reduce HVAC Noise during Project Operation. The Project Sponsor shall design the Project HVAC system to limit noise to the applicable standard at the property line of nearby noise-sensitive receptors. Measures that can implemented to achieve this include, but are not limited to:

- Maximize the distance between HVAC systems and nearby sensitive receptors,
- Provide enclosures around the HVAC units,
- Incorporate local barriers around equipment, and
- Utilize mufflers or silencers on HVAC systems.

[18] U.S. Environmental Protection Agency. 1971. *Noise from Construction Equipment and Operations, Building Equipment and Home Appliances.* December 31.

Prior to the issuance of building permits, the Project Sponsor shall prepare a report, identifying measures that will be implemented to ensure that exterior HVAC noise levels will comply with the following noise limits:

- The 60 dBA L_{eq} daytime and 50 dBA L_{eq} nighttime noise standards for equipment located on the ground,
- The zoning ordinance limit of 50 dBA at a distance of 50 feet for roof-mounted equipment.

Parking Lot and Garage

The Project would include new parking areas, allowing future employees to park onsite. Specifically, approximately 3,533 parking spaces would be provided within surface parking lots and in podium parking areas under the proposed buildings (podium parking would be constructed on podiums over surface parking lots). Noise sources from parking structures and lots would include human speech, vehicle doors slamming, cars starting, tires squealing, accidental car alarm incidents, and other automotive noise. Parking area noise is difficult to quantify because of the many variables. Variations in sound levels reflect factors such as parking structure design and the number of vehicles moving through the structure at any given time. However, noise from parking garages is characterized as temporary and periodic noise. At certain times of the day, such as during the midday period, there may be increased activity in parking lots as employees and guests travel for lunch. Even during these periods, however, there most likely would not be substantial overlap in vehicle noise because of the variation in employee schedules and behavior and the short duration of parking lot vehicle activity. Overall, the temporary and periodic noise sources within the parking areas would be different from each other in kind, time, duration, and location; therefore, the overall effects would be separate and, in most cases, would not affect the same receptors at the same time. The type of noise associated with parking structures is considered a nuisance noise effect, and impacts would be ***less than significant***.

Truck Pick-Ups and Deliveries

The Project site would include a total of three loading docks. One dock would be located at the proposed office buildings (i.e., Buildings 21 and 22), and one dock would be located near Chilco Street between Building 23 and the proposed surface parking lot to the east. At Building 21, it is currently anticipated that 10 deliveries of food products would be made per day, while two deliveries of equipment would be made per week. At Building 22, approximately nine deliveries of food products would be made per day, and equipment would be delivered twice per week.

Trucks that would be used to pick up and deliver supplies at the Project site would create intermittent noise (e.g., from idling engines and the beeping from backup warning signals). However, operation of the Project would not involve large-scale commercial services, manufacturing, or similar work that would require frequent truck deliveries and pickups. Simultaneous truck deliveries to the same structure are not anticipated, and simultaneous deliveries to the Project site as a whole would be expected to occur only occasionally because of varying delivery schedules. Trucks are exempted from the City's short-term noise level limit of 60 dBA at residential land uses, provided the trucks do not idle for more than 10 minutes. State law currently prohibits heavy-duty diesel delivery trucks from idling more than

5 minutes. [19] Additionally, given the short duration and relative infrequency of truck trips to the Campus, truck deliveries would not be a source of excessive ambient noise. Therefore, noise impacts related to truck deliveries would be ***less than significant***.

Emergency Generators

Stand-by emergency power generators may be located in several buildings associated with the Project. Emergency generators create temporary and periodic noise from testing. Sound levels from these generators vary, depending on the type of generator and the noise attenuation that has been incorporated into its design and placement. The generators would be tested monthly for approximately 30 minutes to 1 hour. Given the temporary and periodic nature of emergency generator testing, generators would not permanently increase ambient noise levels; however, these generators would be subject to the City's Noise Ordinance standard of 60 dBA for residential land uses. Without accounting for noise attenuation, the emergency generators may generate sound levels of up to 97 dBA at 23 feet from the generator.[20]

The Project is anticipated to include two generators south of Building 21 and two in Building 22. The generators would all be 500-kilowatt, 762-horsepower diesel units. They would run for only 12 hours per year (approximately). The generators proposed to be located close to nearby noise-sensitive receptors are the units that would be located south of the parking area associated with Building 21; these units could be located as close as 100 feet from nearby residences. At this distance, emergency generator testing could result in noise levels in excess of 80 dBA. At this proposed generator location, very limited noise attenuation would be provided by intervening structures, and noise levels would be in excess of thresholds.

The generators are not anticipated to be in use frequently because they are intended to be a backup or emergency power source; however, because they would be tested monthly, noise levels from generator testing could exceed the City's Noise Ordinance if a noise attenuation enclosure were not installed to surround the emergency generators. Accordingly, this impact is considered ***potentially significant***.

MITIGATION MEASURES. Implementation of Mitigation Measures NOI-1.3 and NOI-1.4 would reduce impacts to less-than-significant levels. This impact would be ***less than significant with mitigation***.

NOI-1.3 *Install Sound Enclosures around Emergency Generators.* The Project Sponsor shall reduce the sound level from the operating generators to a maximum sound level of less than the 60 dBA noise standard at nearby noise-sensitive land uses. Measures that could accomplish this standard include, but are not limited to:

- Installing sound enclosures around all emergency generators,
- Utilizing mufflers to reduce generator noise, and
- Utilizing equipment that meets this standard.

[19] California Air Resources Board. 2006. *Final Regulation Order – Requirements to Reduce Idling Emissions from New and In-Use Trucks, Beginning in 2008*. October 16.

[20] City of Menlo Park. 2011. *Menlo Park Facebook Campus Project EIR*. December.

Prior to the issuance of building permits, the Project Sponsor shall prepare a report, identifying measures that shall be implemented to ensure that exterior noise levels from emergency generators comply with the 60 dBA L_{eq} daytime/nighttime noise standards.

NOI-1.4 *Limit Generator Testing to Daytime Hours.* The Project Sponsor shall limit generator testing to between the hours of 8:00 a.m. and 6:00 p.m.

Recycled Water System

A water recycling system may be installed as part of the Project. The system would include constructed wetlands, a mechanical equipment room, primary tanks, and a headworks building. All pumps, the lift station, and other noise-generating equipment associated with the recycled water facility would be housed inside buildings. The headworks building would have blowers. Specific details on the size and type of mechanical equipment to be used has not yet been determined, but it is anticipated that all motors associated with the mechanical equipment would be less than 10 horsepower.

The primary tanks and headworks buildings would be located relatively close to residences south of the Project site. Although it is possible that noise levels would be reduced to less-than-significant levels, based on the design of the building enclosures, the designs for the building enclosures have not been finalized. As such, the potential exists for noise from operation of these facilities to exceed the City's daytime and nighttime noise standards of 60 dBA-L_{eq} and 50 dBA-L_{eq} respectively. Therefore, if the recycled water system is installed as part of the Project, its impact would be considered to be ***potentially significant***.

MITIGATION MEASURE. Implementation of Mitigation Measures NOI-1.5 would reduce this impact to less than significant by ensuring that building structures that would house mechanical equipment would be designed to limit noise from mechanical equipment to levels that would be in compliance with City standards. This impact would be ***less than significant with mitigation***.

NOI-1.5 *Design Enclosures around Mechanical Equipment Associated with the Recycled Water System to Limit Exterior Noise.* The Project Sponsor shall design the recycled water system such that noise generated by mechanical equipment complies with the City noise standards of 60 dBA L_{eq} (daytime) and 50 dBA L_{eq} (nighttime) at nearby residences. Measures that could accomplish this include, but are not limited to:

- Designing equipment room enclosures, access doors, and other equipment room openings to limit noise that could be transmitted to the exterior
- Utilizing mufflers to limit blower noise

Prior to the issuance of building permits, the Project Sponsor shall prepare a report, identifying measures that shall be implemented to ensure that exterior noise levels from the recycled water system comply with the daytime and nighttime noise standards.

Impact NOI-2: Expose Persons to or Generate Excessive Ground-borne Vibration or Ground-borne Noise Levels. The Project would not expose persons to or generate excessive vibration or ground-borne noise. (LTS)

Typical outdoor sources of perceptible ground-borne vibration and noise are construction equipment, steel-wheeled trains, and heavy vehicles crossing over bumps. If a roadway is smooth, then the ground-borne vibration and noise from traffic is rarely perceptible.

Operation of the Project would consist of typical office operations and would not involve vibratory or impact equipment that would generate ground-borne vibration. Therefore, because there would be no ground-borne vibration or noise impacts associated with Project operation, the discussion of vibration impacts focuses on the ground-borne vibration and noise impacts associated with equipment during Project construction.

The operation of heavy-duty construction equipment could generate localized ground-borne vibration and noise at buildings adjacent to the construction site. Ground-borne vibration rarely causes damage to normal buildings, with the occasional exception of blasting and pile-driving during construction. It is anticipated that pile driving would be required during the construction of each building foundation. Table 3.6-2, above, summarizes typical vibration velocity levels for the various types of construction equipment that would be used for the Project.

Existing buildings (and occupants) that could be affected by ground vibration include residences, Beechwood School, and the Mt. Olive Church south of the Project site. Office buildings west of the Project site could also be affected by ground vibration during construction. As discussed in the Environmental Setting section, above, general construction activity could occur as close as 75 feet from existing residences on Sandlewood Street during construction of the green space area of proposed Building 21, directly north of the Dumbarton Rail Corridor. Construction activities associated with developing this area could involve a grader or large bulldozer; however, pile driving would not occur in this portion of the Project site. Given the reference levels shown in Table 3.6-2, PPV levels could be as high as 0.0171 PPV for a large dozer at 75 feet.[21]

Pile driving would be used exclusively to construct building foundations. Given the conceptual site plan for the Project (Figure 2-3), building foundations and the associated pile driving could occur, as a worst-case scenario, at distances of 275 feet from residences south of proposed Building 21 and 200 feet from the existing commercial building west of proposed hotel. At distances of 275 and 200 feet, PPV levels from pile driving would be 0.02 and 0.03, respectively.

Given the information in Tables 3.6-3 and 3.6-4, these worst-case PPV levels from general construction activities and pile driving would be below the damage threshold for the most fragile buildings and below the perceptibility threshold. Therefore, vibration disturbance during construction is not expected to damage buildings or be perceptible to people. This impact is considered to be ***less than significant***.

Impact NOI-3. Substantial Permanent Increase in Ambient Noise Levels. The Project would result in a permanent increase in ambient noise levels in the Project vicinity, above levels existing without the Project. (LTS/M)

Development of the Project could result in a permanent increase in ambient noise levels in the Project vicinity, as described for Impact NOI-1, above. Traffic along some roadway segments in the Project area would increase with Project development, and noise levels along some roadway segments would be expected to increase as well. Further, as discussed in Impact NOI-1, noise from Project HVAC systems, onsite emergency generators, and potentially the recycled water system may also result in a permanent increase in noise levels.

[21] This value is based on the distances specified and the reference levels and formula shown in Table 3.6-2.

As described under Impact NOI-1, implementation of Mitigation Measure NOI-1.2 would reduce impacts related to HVAC noise levels to less than significant at nearby receptors. Additionally, Mitigation Measures NOI-1.3 and NOI-1.4 would reduce impacts related to emergency generator noise to less than significant. Mitigation Measure NOI-1.5 would reduce noise impacts related to the potential recycled water system. With regard to traffic noise impacts on offsite receptors, Project-added traffic would result in a potentially significant traffic noise impact along one roadway segment in the vicinity of the Project site. However, only one receptor along the segment (471 Hamilton Avenue) is located close enough to the roadway to actually experience potentially significant noise levels.

As discussed under Impact NOI-1, the outdoor use area for 471 Hamilton Avenue is located approximately 30 feet from the roadway centerline and currently has a privacy fence that meets the standard for noise attenuation barriers. The privacy fence is solid wood and has no cracks or gaps through or below it. The FHWA Traffic Noise Model was used to estimate the attenuation provided by the existing solid wood fence. Given the height of the fence and site geometry, this wall is expected to reduce traffic noise by approximately 4 dB. Because the existing plus-Project noise level at the only residential receptor with potential impacts along this segment (30 feet from the roadway centerline) was modeled to result in a noise level of only 2 dB more than the applicable threshold (refer to Table 3.6-10), the 4 dB reduction in noise levels achieved by the existing privacy fence would reduce impacts related to with-Project noise levels at this receptor to less than significant.

Because implementation of Mitigation Measures NOI-1.2, NOI-1.3, NOI-1.4, and NOI-1.5 would reduce impacts related to stationary-source noise levels to less than significant, and the Project would not result in direct traffic-noise impacts on nearby receptors, the Project would not result in a substantial permanent increase in ambient noise levels; this impact would be ***less than significant with mitigation***.

Impact NOI-4. Substantial Temporary or Periodic Increase in Ambient Noise Levels. The Project could result in a substantial temporary or periodic increase in ambient noise levels in the Project vicinity, above levels existing without the Project. (LTS/M)

Construction

As discussed above for Impact NOI-1, construction activities could result in noise that would exceed the Menlo Park 85 dBA limit for powered equipment at 50 feet, resulting in a ***potentially significant*** impact. Mitigation Measure NOI-1.1, *Implement Noise Control Measures to Reduce Construction Noise during Project Construction,* described above under Impact NOI-1, would reduce construction-related impacts by locating equipment away from sensitive land uses. The mitigation measure would require sound control devices on equipment, noise-reducing enclosures, and other practices. As discussed previously, with implementation of this measure, noise from construction activities would be reduced to less than 85 dBA at 50 feet; thus, this impact would be ***less than significant with mitigation***.

Operational Noise

As discussed under Impact NOI-1, stand-by emergency power generators would be located in several buildings associated with the Project. As discussed above, all of these generators would be located more than 100 feet from the nearest residence and expected to result in noise levels in excess of 80 dBA at the nearest sensitive receptor without incorporation of any attenuation. However, implementation of Mitigation Measures NOI-1.3 and NOI-1.4, described under Impact NOI-1, would reduce impacts to less than significant. This impact would be ***less than significant with mitigation.***

Cumulative Impacts

The geographic context for the cumulative noise analysis from localized construction and stationary-source noise includes areas immediately surrounding the Project site, because noise diminishes rapidly with distance (6 dBA per doubling of distance for point and stationary sources). For cumulative vehicular noise impacts, the cumulative context is based on the cumulative context for the traffic analysis, which includes existing and future developments, including other current projects, probable future projects, and projected future growth within the city through 2040. This analysis is based on the projects listed in Table 3.0-3.

Impact C-NOI-1: Cumulative Exposure to Excessive Noise. The Project, in combination with other development within the city, could result in a substantial increase in exposure of persons to noise in excess of the standards established in the City General Plan or Municipal Code. The Project's contribution would be cumulatively significant. (LTS/M)

Construction Noise

Other projects that would contribute to cumulative noise impacts include the demolition of Buildings 307–309 (6) and the renovation of Building 23 (5), which are both separate projects from the Project.

Besides the demolition of Buildings 307–309 and renovation of Building 23, both of which are on the Project site, the closest planned project in the vicinity of the Project site is the Chilco Street Improvements Project (14). This project, which is located immediately adjacent to the Project site along Chilco Street, would include development of a Class 1 bike route, restriping, new fencing, and storm drain improvements, among other improvements. The proposed Dumbarton Rail Trail Project (15) is also located adjacent to the Project site (immediately south of the southern Project boundary); this 4.5-mile-long bicycling and walking pathway would run adjacent to the current Dumbarton Rail Corridor. The nearest proposed land use project is the Commonwealth Corporate Center, located approximately 550 feet west of the Project site. However, construction on this project is largely complete and is not expected to overlap with Project construction.

Although demolition of Buildings 307–309 and renovation of Building 23 would occur prior to implementation of the Project and the Chilco Street Improvements Project and the proposed Dumbarton Rail Trail Project may occur after Project construction, all of these projects are considered concurrent for the purposes of this analysis. Construction noise effects may result in a cumulative noise impact on nearby sensitive receptors. As discussed under Impact NOI-1, construction activity associated with the Project would generate noise that could affect existing adjacent land uses. However, with implementation of Mitigation Measure NOI-1.1, construction noise impacts are expected to be less than significant. Specific construction noise mitigation measures that could be applied to demolition of Buildings 307–309, renovation of Building 23, the Chilco Street Improvements Project, and the Dumbarton Rail Trail Project are not known at this time. However, it is likely that noise mitigation measures similar to those of the Project would be applied to other projects for compliance with applicable City noise standards. Given this, and the fact that construction noise is highly localized, it is not anticipated that significant cumulative construction noise impacts would occur. Thus, cumulative impacts are considered ***less than significant with mitigation***.

Operational Noise

Stationary Noise

The implementation of other development projects would have the potential to increase ambient noise by creating new operational noise sources (such as HVAC equipment, parking lots, etc.). However, the Chilco Street Improvements Project and the proposed Dumbarton Rail Trail Project, which would be located adjacent to the Project site, would not result in stationary-source operational noise. In addition, the renovation of Building 23 could result in stationary-source noise, generated by HVAC and other equipment, at the Project site. However, this level of noise would most likely not result in a substantial change from the level of noise currently generated at this building because it is reasonable to assume that the existing building currently generates HVAC or other equipment noise. Thus, renovating Building 23 would most likely not drastically increase or decrease noise generated by stationary sources. Such noise would not combine with Project operational noise in a substantial way, given the anticipated distances between stationary equipment at Building 23 and the Project buildings and the nearest sensitive land uses south of the Dumbarton Rail Corridor (i.e., hundreds of feet). No other land use projects with stationary noise sources are located in proximity to the Project (all are more than 550 feet away). Operational noise impacts from stationary sources associated with other development would not be anticipated to combine with Project noise sources to have a significant effect on nearby noise-sensitive land uses (e.g., the school and residences located south of the inactive Dumbarton Rail Corridor). Given the distances between the Project and the closest development projects in the area, and the intervening shielding between the Project and the closest other proposed development project (Commonwealth Corporate Center), the potential cumulative impacts related to stationary noise sources would be ***less than significant.***

Traffic Noise

Cumulative growth in the city could lead to increased noise levels from vehicular traffic. For areas of the city where noise levels already exceed significance thresholds, other development could result in a significant cumulative noise impact.

Modeling for potential cumulative impacts in the Project vicinity was conducted. Segment-specific noise levels under existing conditions were compared with noise levels during 2040 with implementation of the forecast general plan to determine where substantial noise increases may occur. Table 3.6-12 compares noise levels with implementation of the other projects (forecast year 2040 general plan) with existing noise levels.

A significant cumulative traffic noise impact would result if noise levels at existing sensitive land uses were to increase from below the applicable noise threshold under existing conditions to above the applicable threshold under the future scenario, including other development. Alternatively, a cumulative traffic noise impact would also occur if noise levels at existing noise-sensitive land uses were already in excess of thresholds and were to increase substantially under the future scenario (3 dB or more above existing traffic noise levels without the Project). If a cumulative traffic noise impact is anticipated along a given roadway segment, then the Project contribution to this impact must be assessed. The Project would result in a cumulatively considerable contribution to the overall increase in traffic noise levels (3 dB or more) if it were to result in an increase of 1 dB or more that would be attributable solely to the Project.

An initial cumulative impact analysis was conducted using a reference distance of 50 feet from each roadway segment centerline; modeling results demonstrated that other development could result in noise levels in excess of the 60 L_{dn} threshold for residential land uses along segments of Chilco Street and O'Brien drive.

There would be a ***potentially significant*** cumulative impact from vehicular noise from other development along the following two segments:

- Chilco Street between Hamilton Avenue and Terminal Avenue
- O'Brien Drive between University Avenue and Kavanaugh Drive

Modeling for the segment of Adams Drive between University Drive and Adams Court, the segment of Haven Avenue between Bayfront Expressway/Marsh Road and the city limit, the segment of Constitution Drive between Chilco Street and Chrysler Drive, and the segment of O'Brien Drive between Kavanaugh Drive and Willow Road also showed potential cumulative noise impacts when considering the aforementioned 60 L_{dn} standard. However, the only nearby receptors along these segments are commercial, with a standard of 70 L_{dn}; therefore, the 70 L_{dn} standard is not exceeded along these segments.

For some segments determined to have potential cumulative traffic noise impacts, implementation of the Project would be a primary contributor to future vehicular traffic. Of the two previously described roadway segments with significant cumulative impacts, Project-added traffic would result in a cumulatively considerable increase in traffic noise levels at a distance of 50 feet along one roadway segment. This roadway segment is:

- Chilco Street between Hamilton Avenue and Terminal Avenue

The analysis for the two segments determined to have potential cumulative traffic noise impacts was further refined. Rather than utilizing the typical reference distance of 50 feet, the modeling distance was adjusted to reflect the actual distance between the roadway centerline and the noise-sensitive receivers along these segments. The Project-related increase in noise raises the noise levels along this segment to above the 60 L_{dn} threshold when using actual distances to receptors, and the Project-related increase in noise is equal to or greater than 1 dB (refer to Table 3.6-12 for the results of the modeling to determine potential cumulative impacts and Table 3.6-13 for the Project's contribution to a potential cumulative impact).

Because the Project-related increase in noise is equal to or greater than 1 dB along the segment of Chilco Street from Hamilton Avenue to Terminal Avenue, the Project could make a cumulatively considerable contribution to a cumulative traffic noise impact along this segment. However, as discussed under Impact NOI-1, only one receptor along the segment of Chilco Street between Hamilton Avenue and Terminal Avenue (471 Hamilton Avenue) is located close enough to the roadway to actually experience potentially significant noise levels. The outdoor use area for 471 Hamilton Avenue, which is located approximately 30 feet from the roadway centerline, currently has a privacy fence that meets the standard for noise attenuation barriers. The wall is solid wood and has no cracks or gaps through or below it. The FHWA Traffic Noise Model was used to estimate the attenuation provided by the existing solid wood fence. Given the height of the fence and site geometry, this wall is expected to reduce traffic noise by approximately 4 dB.

Table 3.6-12. Cumulative Traffic Noise Levels and Potential Impacts to Offsite Receptors

Roadway	Segment	Approx. Distance to Nearest Receptor (feet)	Receptor Land Use Type	Compatibility Standard (Normally Acceptable) (L_{dn})	Existing L_{dn} at Receptor Distance	Cumulative (Forecast General Plan, including Project) L_{dn}	Cumulative Exceeds Standard with Existing Standard?	Difference between Existing and Forecast General Plan, (if above standard)	Significant Cumulative Impact?
Chilco Street	Hamilton Avenue to Terminal Avenue	30	R	60	59.0	61.0	**Yes**	2	**Yes**
O'Brien Drive	University Avenue to Kavanaugh Drive	30	R	60	59.0	61.0	**Yes**	2	**Yes**
Constitution Drive	Chilco Street to Chrysler Drive	40	C	70	59.0	62.0	No	NA	No
Adams Drive	University Drive to Adams Court	45	C	70	52.0	60.0	No	NA	No
O'Brien Drive	Kavanaugh Drive to Willow Road	45	C	70	60.0	64.0	No	NA	No
Haven Avenue	Bayfront Expressway/ Marsh Road to city limit	50	C	70	61.0	65.0	No	NA	No

Notes:
Bold = significant impact, R = residential, C = Commercial, NA = not applicable (because standard not exceeded)

Table 3.6-13. Project Contribution to Cumulative Traffic Noise Impacts to Offsite Receptors

Roadway	Segment	Significant Cumulative Impact?	Cumulative without-Project L_{dn} at Nearby Receptors	Cumulative plus-Project L_{dn} at Nearby Receptors	Project Contribution to Noise Level	Cumulatively Considerable Contribution?
Chilco Street	Hamilton Avenue to Terminal Avenue	**Yes**	59.0	61.0	**2**	**Yes**
O'Brien Drive	University Avenue to Kavanaugh Drive	**Yes**	61.0	61.0	0	No

Notes:

A "cumulatively considerable contribution" is a greater than a 1 dB increase in noise levels already above 60 L_{dn} without Project-added traffic.

Bold = significant impact

Because the cumulative plus-Project noise level at the only residential receptor with potential impacts along this segment (30 feet from the roadway centerline) was modeled to result in a noise level of only 1 dB more than the applicable threshold (refer to Table 3.6-13), a 4 dB reduction in noise levels achieved by the existing privacy fence would reduce impacts related to with-Project noise levels at this receptor to less than significant. This cumulative impact is ***less than significant.***

Impact C-NOI-2: Cumulative Exposure to Ground-borne Vibration. Construction activities associated with Project-related development and other future development in the city would not expose sensitive receptors to excessive ground-borne vibration. The Project's cumulative impact would be less than significant. (LTS)

Cumulative impacts related to construction vibration would not occur. As described previously, although pile driving may be used for Project construction (to construct building foundations), the worst-case estimated ground vibration levels at nearby sensitive land uses would be below the damage threshold for the most fragile buildings and below the perceptibility threshold at nearby sensitive land uses. Therefore, there would be no direct Project effects on offsite receptors related to construction vibration. The nearest project for the purposes of this analysis is the onsite demolition of Buildings 307–309 and renovation of Building 23, both of which are on the Project site. The closest planned projects in the vicinity of the Project site (and offsite) are the Chilco Street Improvements Project and the proposed Dumbarton Rail Trail Project. The nearest planned land use project is the Commonwealth Corporate Center, located approximately 550 feet west of the Project site. As discussed under Impact C-NOI-1, however, construction on this project is largely complete and not expected to overlap with Project construction.

Nearby offsite projects (Chilco Street Improvements and the proposed Dumbarton Rail Trail Project) located adjacent to the Project site would use equipment during construction activities (including, but not limited to, an excavator and a backhoe) that could generate some vibration; however, it is not anticipated that these construction projects would involve impact equipment or result in meaningful vibration levels. The demolition of Buildings 307–309 and the renovation of Building 23 could result in some construction vibration on the Project site; however, vibration associated with demolition activities is highly localized (generally within 50 to 100 feet of the construction activity).

As discussed under Impact NOI-2, above, building foundations and the associated pile driving for the Project could occur, as a worst-case scenario, at distances of 275 feet from residences south of proposed Building 21 and 200 feet from the existing commercial building west of proposed hotel. At distances of 275 and 200 feet, PPV levels from pile driving would be 0.02 and 0.03, respectively.

Given the information in Tables 3.6-3 and 3.6-4, these worst-case scenario PPV levels from general construction activities and pile driving would below the damage threshold for the most fragile buildings and below the perceptibility threshold. Because construction vibration associated with other projects would be highly localized, the potential for construction vibration from other development projects to combine with vibration generated by the Project would be low. Additionally, because all new development projects are subject to CEQA and/or National Environmental Policy Act (NEPA) review, potential vibration impacts associated with each individual project would be assessed. For these reasons, development in the Project vicinity would not result in the exposure of people to excessive vibration levels during construction; cumulative impacts related to construction vibration would be ***less than significant***.

Impact C-NOI-3: Cumulative Permanent Increase in Noise Levels. Operation of the Project, in combination with other development in the city, would result in a substantial permanent ambient noise level increase in the Project vicinity. However, the Project's contribution would not be cumulatively significant. (LTS)

As described above under Impact C-NO-1, cumulative increases in traffic would result in substantial noise level increases from vehicular traffic along six roadway segments in the vicinity of the Project site. Therefore, cumulative impacts along these segments would be significant. The Project, however, would result only in a cumulatively considerable increase in noise along one of these six segments (Chilco Street from Hamilton Avenue to Terminal Avenue), because the Project-related increase would exceed 1 dB along a segment where a cumulative impact was modeled to occur. The Project's contribution to this impact could be cumulatively considerable if receptors along this segment would be affected. However, as described under Impact C-NOI-1, only one receptor along this segment (471 Hamilton Avenue) is located close enough to the roadway to actually experience potentially significant noise levels. The outdoor use area for 471 Hamilton Avenue, which is located approximately 30 feet from the roadway centerline, currently has a privacy fence that meets the standard for noise attenuation barriers. The wall is solid wood and has no cracks or gaps through or below it. The FHWA Traffic Noise Model was used to estimate the attenuation provided by the existing solid wood fence. Given the height of the fence and site geometry, this wall is expected to reduce traffic noise by approximately 4 dB.

Because the cumulative plus-Project noise level at the only residential receptor with potential impacts along this segment (30 feet from the roadway centerline) was modeled to result in a noise level of only 1 dB more than the applicable threshold (refer to Table 3.6-13), a 4 dB reduction in noise levels achieved by the existing privacy fence would reduce impacts related to with-Project noise levels at this receptor to less-than-significant levels. Therefore, the Project would not make a cumulatively considerable contribution to a cumulative impact at nearby noise-sensitive land uses. This cumulative impact is ***less than significant***.

Impact C-NO-4: Cumulative Temporary Increase in Noise Levels. Construction activities associated with Project-related development and other future development in the city would not expose sensitive receptors to a substantial temporary increase in the ambient noise level. The Project's cumulative impact would be less than significant. (LTS)

With regard to cumulative temporary increases in noise levels, the closest potential construction activity (the main source of Project-related temporary noise) would occur on the future Project site. Specifically, Buildings 307–309 at the Project site (where Building 21 would be constructed) would be demolished, and Building 23 would be renovated as part of separate projects. Besides demolition of Buildings 307–309 and renovation of Building 23, all of which are on the Project site, the closest planned projects in the vicinity of the Project site are the Chilco Street Improvements Project and the proposed Dumbarton Rail Trail Project, located adjacent to the Project site.

The nearest planned land use project is the Commonwealth Corporate Center, located approximately 550 feet west of the Project site. As discussed under Impact C-NOI-1, however, construction on this project is largely complete and is not expected to overlap with Project construction.

Although demolition of Buildings 307–309 and renovation of Building 23 would occur prior to implementation of the Project, and the Chilco Street Improvements Project and the proposed Dumbarton Rail Trail Project may occur after Project construction, all three are considered concurrent

for the purposes of this analysis. Construction noise effects may result in a cumulative noise impact on nearby sensitive receptors. As discussed under Impact NOI-1 and Impact C-NOI-1, above, construction activity associated with the Project would generate noise that could affect existing adjacent land uses. However, with implementation of Mitigation Measure NOI-1.1, construction noise impacts are expected to be less than significant. Specific construction noise mitigation measures that could be applied to demolition of Buildings 307–309, renovation of Building 23, the Chilco Street Improvements Project, and to the Dumbarton Rail Trail Project are not known at this time, but it is likely that noise mitigation measures similar to those associated with the Project would be applied to other projects for compliance with applicable City noise standards. Given this, and the fact that construction noise is highly localized, it is not anticipated that significant cumulative construction noise impacts would occur. This cumulative impact is, therefore, considered ***less than significant***.

3.7 Cultural Resources

This section describes the affected environment and regulatory setting for cultural resources, including brief descriptions of the prehistoric and historic setting of the Facebook Campus Expansion Project (Project) area and the results of the archaeological resources investigation conducted for the Project. Applicable federal, state, and local regulations are identified, followed by impact analysis and mitigation measures, as applicable, to reduce potentially adverse impacts on cultural resources. This section is based on a records search at the Northwest Information Center (NWIC) of the California Historical Resources Information System, a search of the Native American Heritage Commission (NAHC) sacred lands database, archival research at the City of Menlo Park (City) Planning Department's Permit Center, and geological information.

Issues identified in response to the Notice of Preparation (NOP) (Appendix 1) were considered in preparing this analysis. Applicable issues that were identified pertain to the documentation of an archaeological records search and Native American consultation.

Existing Conditions

Regulatory Setting

Federal

National Historic Preservation Act. Federal regulations for cultural resources are governed primarily by Section 106 of the National Historic Preservation Act (NHPA) of 1966, which applies to actions taken by federal agencies. The goal of the Section 106 review process is to offer a measure of protection to sites that are determined eligible for listing in the National Register of Historic Places (NRHP). The criteria for determining NRHP eligibility are found in 36 Code of Federal Regulations (CFR) Part 60. Section 106 of the NHPA requires federal agencies to take into account the effects of their undertakings on historic properties and affords the federal Advisory Council on Historic Preservation a reasonable opportunity to comment on such undertakings. The council's implementing regulations, Protection of Historic Properties, are found in 36 Code of Federal Regulations (CFR) Part 800. The NRHP criteria (contained in 36 CFR 60.4) are used to evaluate resources with respect to complying with NHPA Section 106. The criteria state that eligible resources comprise districts, sites, buildings, structures, and objects that possess integrity of location, design, setting, materials, workmanship, feeling, and association, and:

a. Are associated with events that have made a significant contribution to the broad patterns of our history;

b. Are associated with the lives of persons significant in our past;

c. Embody the distinctive characteristics of a type, period, or method of construction or that possess high artistic values or that represent a significant distinguishable entity whose components may lack individual distinction; or

d. Have yielded, or may be likely to yield, information important to history or prehistory.

Archaeological site evaluation assesses the potential of each site to meet one or more of the criteria for NRHP eligibility, based upon visual surface and subsurface evidence (if available) at each site location, information gathered during the literature and records searches, and the researcher's knowledge of and familiarity with the historic or prehistoric context associated with each site.

Paleontological Resources Preservation Act. The federal Paleontological Resources Preservation Act of 2002 was enacted to codify the generally accepted practice of limiting the collection of vertebrate fossils and other rare and scientifically significant fossils to qualified researchers. These researchers must obtain a permit from the appropriate state or federal agency and agree to donate any materials recovered to recognized public institutions where they will remain accessible to the public and other researchers.

State

California Public Resources Code. Under the California Environmental Quality Act (CEQA), public agencies must consider the effects of their actions on both historical resources and unique archaeological resources. Pursuant to Public Resources Code Section 21084.1, a "project that may cause a substantial adverse change in the significance of an historical resource is a project that may have a significant effect on the environment."

Historical resource is a term with a defined statutory meaning (see Public Resources Code Section 21084.1 and State CEQA Guidelines Section 15064.5(a) and (b)). The term embraces any resource listed in or determined to be eligible for listing in the California Register of Historical Resources (CRHR). The CRHR includes resources listed in or formally determined eligible for listing in the NRHP as well as some California State Landmarks and Points of Historical Interest.

Properties of local significance that have been designated under a local preservation ordinance (local landmarks or landmark districts) or that have been identified in a local historical resources inventory may be eligible for listing in the CRHR and are presumed to be historical resources for the purposes of CEQA, unless a preponderance of evidence indicates otherwise (Public Resources Code Section 5024.1; California Code of Regulations, Title 14, Section 4850). Unless a resource that has been listed in a survey is demolished or it loses substantial integrity or there is a preponderance of evidence indicating that it is otherwise not eligible for listing, a lead agency should consider the resource to be potentially eligible for the CRHR.

In addition to assessing whether historical resources that may be affected by a proposed project have been listed or identified in a survey process, lead agencies have a responsibility to evaluate the resources against the CRHR criteria prior to making a finding as to a project's impacts on the resources (Public Resources Code Section 21084.1; State CEQA Guidelines Section 15064.5 (a)(3)). In general, a historical resource, under this approach, is defined as any object, building, structure, site, area, place, record, or manuscript that:

a. Is historically or archeologically significant or is significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, or cultural annals of California; and

b. Meets any of the following criteria:

    1. Is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage;

    2. Is associated with the lives of persons important in our past;

    3. Embodies the distinctive characteristics of a type, period, region, or method of construction or represents the work of an important creative individual or possesses high artistic values; or

    4. Has yielded, or may be likely to yield, information important in prehistory or history.

As noted above, CEQA also requires lead agencies to consider whether projects will affect unique archaeological resources. Although CEQA does not define a unique paleontological resource or site, Public Resources Code Section 21083.2 (g) states that *unique archaeological resource* means an archaeological artifact, object, or site about which it can be clearly demonstrated that, without merely adding to the current body of knowledge, there is a high probability that it meets any of the following criteria:

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

With only slight modification, this definition is equally applicable to recognizing a unique *paleontological* resource or site. Additional guidance is provided in CEQA Section 15064.5 (a)(3)(D), which indicates "generally, a resource shall be considered historically significant if it has yielded, or may be likely to yield, information important in prehistory or history."

Under Section 21083.2 of the Public Resources Code, options on how to treat such resources include activities that preserve the resources in place in an undisturbed state. Other acceptable methods of mitigation under Public Resources Code Section 21083.2 include excavation and curation or study in place without excavation and curation (if the study finds that the artifacts would not meet one or more of the criteria for defining a unique archaeological resource).

Section 7050.5 (b) of the California Health and Safety Code specifies a protocol for when human remains are discovered. The code states:

> In the event of discovery or recognition of any human remains in any location other than a dedicated cemetery, there shall be no further excavation or disturbance of the site or any nearby area reasonably suspected to overlie adjacent remains until the coroner of the county in which the human remains are discovered has determined, in accordance with Chapter 10 (commencing with Section 27460) of Part 3 of Division 2 of Title 3 of the Government Code, that the remains are not subject to the provisions of Section 27492 of the Government Code or any other related provisions of law concerning investigation of the circumstances, manner and cause of death, and the recommendations concerning treatment and disposition of the human remains have been made to the person responsible for the excavation, or to his or her authorized representative, in the manner provided in Section 5097.98 of the Public Resources Code.

State CEQA Guidelines Section 15064.5(e) requires that excavation activities be stopped whenever human remains are uncovered and that the county coroner be called in to assess the remains. If the county coroner determines that the remains are those of Native Americans, the NAHC must be contacted within 24 hours. At that time, the lead agency is required to consult with the appropriate Native Americans, as identified by the NAHC, and direct the lead agency (or applicant), under certain circumstances, to develop an agreement with the Native Americans for the treatment and disposition of the remains.

Local

City of Menlo Park General Plan. The following goal and policies from the Open Space Element of the City of Menlo Park General Plan are relevant to the Project.

> **Goal OSC3:** Protect and Enhance Historic Resources. Protect and enhance cultural and historical resources for their aesthetic, scientific, educational, and cultural values.
>
> *Policy OSC3.1:* Prehistoric or Historic Cultural Resources Investigation and Preservation. Preserve historical and cultural resources to the maximum extent practical.
>
> *Policy OSC32:* Prehistoric or Historic Resources Protection. Require significant historic or prehistoric artifacts to be examined by a qualified consulting archaeologist or historian for appropriate protection and preservation and ensure compliance with local, state, and federal regulations.
>
> *Policy OSC3.3*: Archaeological or Paleontological Resources Protection. Protect prehistoric or historic cultural resources either onsite or through appropriate documentation as a condition of removal. Require that when a development project has sufficient flexibility, avoidance and preservation of the resource shall be the primary mitigation measure, unless the City identifies superior mitigation. If resources are documented, undertake coordination with descendants and/or stakeholder groups, as warranted.
>
> *Policy OSC3.4*: Prehistoric or Historic Cultural Resources Found During Construction. Requires that if cultural resources, including archaeological or paleontological resources, are uncovered during grading or other onsite excavation activities, construction shall stop until appropriate mitigation is implemented.
>
> *Policy OCS3.5*: Consultation with Native American Tribes. Consult with those Native American tribes with ancestral ties to the Menlo Park city limits regarding General Plan Amendments and land use policy changes.

ConnectMenlo General Plan Update. The City's General Plan (Land Use and Circulation Elements) and M-2 Area Zoning Update, also known as ConnectMenlo, is under way. Although not yet adopted, the following draft policy in ConnectMenlo pertains to the Project and is identified for informational purposes.

> *Policy LU-7.8* Cultural Resource Preservation. Promote preservation of buildings, objects, and sites with historic and/or cultural significance.

Environmental Setting

Prehistoric Setting

The Project site is located along the southwest edge of the San Francisco Bay (Bay). The San Francisco Bay–Delta Cultural Sequence, often referred to as the Central California Taxonomic System, was defined largely on the basis of stylistic variation in artifacts from burials found in the lower Sacramento Valley.[1]

[1] Lillard, J., R. Heizer, and F. Fenenga. 1939. *An Introduction to the Archaeology of Central California*. Department of Anthropology Bulletin 2. Sacramento Junior College, Sacramento.

Over time, this sequence has been refined as research yielded new clues to the early development of the Bay Area. The following summary is extracted from Byrd and Meyer (2011),[2] which used several studies, including Milliken et al. (2007),[3] Rosenthal and Meyer (2004),[4] and Moratto (1984).[5]

Terminal Pleistocene (13,500–11,600 BP). The Terminal Pleistocene is largely contemporaneous with the Clovis and Folsom periods of the Great Plains and the southwest and generally considered to be represented by wide-ranging mobile hunters and gatherers who regularly exploited large game.[6] Throughout California, the Terminal Pleistocene is most often represented by isolated fluted points.[7,8]

Early Holocene (11,600–7700 BP). Early Holocene prehistoric material in the Bay Area is sparse; only four sites date to this period: two sites at Los Vaqueros Reservoir (Contra Costa County [CCO]-696 and -637) in the East Bay, the Blood Alley site (Santa Clara County [SCL]-178) in the Coyote Narrows of the Santa Clara Valley, and SCR-177 at Scott's Valley in the Santa Cruz Mountains.[9,10] Their deposits, which indicate diverse resource exploitation, demonstrate that the general region was occupied throughout this time segment, but strong insight into the nature of this early occupation is still lacking.

Middle Holocene (7700–4000 BP). In the Bay Area, Middle Holocene assemblages can include various types of groundstone; points; chopping, scraping, and pounding implements; and shell beads and ornaments.[11,12] Exploitation of the Bay's estuary, mud flats, and freshwater tidal marshes was common, and the presence of a diverse range of habitation sites, including the basal layers of some Bay-margin

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[2] Byrd, B. F., and J. Meyer. 2011. *Initial Cultural Resources Investigation, San Francisquito Creek Flood Damage Reduction and Ecosystem Restoration Project, Santa Clara and San Mateo Counties, California.* Redacted version. Prepared for Kristin O'Kane, Santa Clara Water District, San José.

[3] Milliken, R., R. T. Fitzgerald, M. G. Hylkema, R. Groza, T. Origer, D. G. Bieling, A. Leventhal, R. S. Wiberg, A. Gottsfield, D. Gillette, V. Bellifemine, E. Strother, R. Cartier, and D. A. Fredrickson. 2007. Punctuated Change in the San Francisco Bay Area, Chapter 8, pages 99–123. In Terry L. Jones and Kathryn A. Klar, (eds.), *California Prehistory: Colonization, Culture, and Complexity.* Altamira Press, New York.

[4] Rosenthal, J. S., and J. Meyer. 2004. *Landscape Evolution and the Archaeological Record: A Geoarchaeological Study of the Southern Santa Clara Valley and Surrounding Region.* Center for Archaeological Research at Davis. Publication 14. University of California, Davis.

[5] Moratto, M. 1984. *California Archaeology*. Academic Press, New York.

[6] Haynes, G. M. 2002. *The Early Settlement of North America: The Clovis Era*. Cambridge University Press, Cambridge.

[7] Erlandson, J., T. C. Rick, T. L. Jones, and J. F. Porcasi. 2007. One If by Land, Two If by Sea: Who Were the First Californians? In *California Prehistory: Colonization, Culture, and Complexity*, edited by T. L. Jones and K. Klar, pp. 53–62. Altamira Press, Walnut Creek.

[8] Rondeau, M. F., J. Cassidy, and T. L. Jones. 2007. Colonization Technologies: Fluted Projectile Points and the San Clemente Island Woodworking/Microblade Complex. In *California Prehistory: Colonization, Culture, and Complexity,* edited by T. L. Jones and K. Klar, pp. 63–70. Altamira Press, New York.

[9] Hildebrandt, W. R. 1983. *Archaeological Research of the Southern Santa Clara Valley Project: Based on a Data Recovery Program from Sites CA-SCl-54, CA-SCl-163, CA-SCl-178, CA-SCl-237, and CA-SCl-241 Located in the Route 101 Corridor, Santa Clara County, California.* Daniel, Mann, Johnson, and Mendenhall and San José State University. Los Angeles and San José. Submitted to California Department of Transportation, District 4, San Francisco. Report S-6369. On file at the Northwest Information Center, Sonoma State University, Rohnert Park, CA.

[10] Meyer, J., and J. S. Rosenthal. 1997. Archaeological and Geoarchaeological Investigations at Eight Prehistoric Sites in the Los Vaqueros Reservoir Area, Contra Costa County. In *Los Vaqueros Project Final Report*. Anthropological Studies Center, Sonoma State University, Rohnert Park, California. Submitted to the Contra Costa Water District, Concord. Report on file, Northwest Information Center, Sonoma State University, Rohnert Park, CA.

[11] Fitzgerald, R. T., Jr. 1993. *Archaic Milling Cultures of the Southern San Francisco Bay Region*. Edited by G. S. Breschini and T. Haversat. Coyote Press Archives of California Prehistory Number 35. Coyote Press.

[12] Meyer, J., and J. S. Rosenthal. 1998. *An Archaeological Investigation of Artifacts and Human Remains from CA-CCO-637, Los Vaqueros Project Area, Contra Costa County, California.* Anthropological Studies Center, Sonoma State Academic Foundation, Inc., Rohnert Park, California. Submitted to Contra Costa Water District, Concord, CA.

shell mounds, suggests higher population levels, more complex adaptive strategies, and longer seasonal occupation than during the early Holocene. Notable sites in the vicinity of the Project site include SCL-484, -674, and -832; SMA-269 and -273; and SFR-28, all of which contained several isolated human burials.

Late Holocene (4000–170 BP). The Late Holocene is generally divided into five "slices," based on specific types of shell beads. It is well documented in the Bay Area; more than 200 sites reflect widespread occupation by complex hunter-gatherers.[13] Important mounds along the Peninsula margins include the University Village site (SMA-77), the San Bruno Mountain mound (SMA-40), and the Ynigo Mound (SCL-12/H).[14,15] The artifact assemblages include various types of beads and pendants, bone tools, "flower pot" mortars, and the bow and arrow. Funerary rituals were strongly patterned and included flexed interments and "killed" grave offerings, along with occasional cremations. Extensive trade relations also appear to have flourished with neighboring groups.

Ethnographic Setting

Menlo Park is situated within territory once occupied by Costanoan (also commonly referred to as Ohlone) language groups. Eight Ohlone languages were spoken in the area from the southern edge of the Carquinez Strait to portions of the Big Sur and Salinas Rivers south of Monterey Bay and approximately 50 miles inland from the coast. Menlo Park lies on the approximate ethnolinguistic boundary between the Tamyen and Ramaytush languages. Tamyen, or Santa Clara Costanoan, was spoken around the south end of San Francisco Bay and in the lower Santa Clara Valley and seems to have had about 1,200 speakers. Ramaytush, or San Francisco Costanoan, was spoken by about 1,400 people in San Mateo and San Francisco Counties.[16]

Ohlone territories were composed of one or more land-holding groups that anthropologists refer to as *tribelets*. The tribelet consisted of a principal village that was occupied year-round, with a series of smaller hamlets and resource gathering and processing locations occupied intermittently or seasonally.[17] The Puichon tribelet lived on the west shore of San Francisco Bay between lower San Francisquito Creek and lower Stevens Creek, now the areas of Menlo Park, Palo Alto, and Mountain View.[18]

Seven Spanish missions were founded in Ohlone territory between 1776 and 1797. Although living within the mission system, the Ohlone commingled with other groups, including the Yokuts, Miwok, and Patwin. Members of the Puichon tribelet went to Mission San Francisco between 1781 and 1794 and to Mission Santa Clara from 1781 to as late as 1805. Mission life was devastating to the Ohlone

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[13] Milliken, R., R. T. Fitzgerald, M. G. Hylkema, R. Groza, T. Origer, D. G. Bieling, A. Leventhal, R. S. Wiberg, A. Gottsfield, D. Gillette, V. Bellifemine, E. Strother, R. Cartier, and D. A. Fredrickson. 2007. Punctuated Change in the San Francisco Bay Area, Chapter 8, pages 99–123. In Terry L. Jones and Kathryn A. Klar, (eds.), *California Prehistory: Colonization, Culture, and Complexity.* Altamira Press, New York.

[14] Byrd, B. F., and J. Berg. 2009. *Phase II Excavations in the Caltrans Right-of-Way at CA-SCL-12/H, Santa Clara County, California.* 04-SCL-101/237 PM 46.10-46.3/Prepared for Caltrans District 4.

[15] Clark, M. R. 1989. *Evaluative Archaeological Investigations at the San Bruno Mountain Mound Site, CA-SMA-40, South San Francisco, California*. Report on file, Northwest Information Center, Sonoma State University, Rohnert Park, CA.

[16] Levy, R. 1978. Costanoan. Pages 398–413 in W. C. Sturtevant (ed.), *Handbook of North American Indians*, 8, California. Washington, DC: Smithsonian Institution.

[17] Kroeber, A. L. 1955. Nature of the Land-Holding Group. *Ethnohistory* 2:303–314.

[18] Milliken, R. 1995. *A Time of Little Choice: The Disintegration of Tribal Culture in the San Francisco Bay Area 1769–1810.* Ballena Press Anthropological Papers No. 43. Novato, CA: Ballena Press.

population.[19] When the first mission was established in Ohlone territory in 1776, the Ohlone population was estimated to be 10,000. By 1832, the Ohlones numbered less than 2,000 as a result of introduced disease, harsh living conditions, and reduced birth rates.[20,21,22]

Ohlone recognition and assertion began to move to the forefront during the early twentieth century, enforced by legal suits brought against the United States government by Indians of California (1928–1964) for reparation due them for the loss of traditional lands. The Ohlone participated in the formation of political advocacy groups, which brought focus upon the community and reevaluation of rights due its members.[23] In recent years, the Ohlone have become increasingly organized as a political unit and have developed an active interest in preserving their ancestral heritage. Many Ohlones are active in maintaining their traditions and advocating for Native American issues.

Historic Setting

Regional History

Spanish rule came to the Menlo Park area in 1769 when the exploration party led by Don Gaspar de Portola camped near "El Palo Alto" after their discovery of the Bay. The colonization of the San Francisco Peninsula began after the expedition of Juan Bautista de Anza passed through Menlo Park on its way to establishing Mission Dolores and the Presidio of San Francisco in 1776.[24]

The mission padres, explorers, military personnel, travelers, and settlers occupied areas of what is today Menlo Park, developing and populating the land. As a reward for their contribution to the settling movement, some pioneers were granted huge portions of land by the Spanish and, after 1822, by the Mexican government. The largest land grant on the San Francisco Peninsula was the Rancho de las Pulgas, an area of more than 35,000 acres, which was awarded to presidio comandante Don José Dario Arguello in 1795 by Governor Diego de Borica and endorsed on behalf of his son Luis Arguello in 1820 by Pablo Sola, the last Spanish governor of California. This land extended north and south from San Mateo Creek to San Francisquito Creek and east and west from the Bay to today's Cañada Road in Woodside. The present boundaries of Menlo Park would have been within this rancho, which became part of the new state of California. The Arguello family obtained legal title to their lands in 1853. Later, the land was subdivided.

In August 1854, Menlo Park received its official name when two Irishmen, Dennis J. Oliver and D. C. McGlynn, whose wives were sisters, purchased 1,700 acres (some sources say it was 640 acres) bordering present-day El Camino Real and built two houses with a common entrance. Across the drive they erected a huge wooden gate with tall arches on which the name of their estate "Menlo Park" was printed in foot-high letters. When the railroad came through in 1863, the Menlo Park station was

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[19] Ibid.

[20] Cook, S. F. 1943a. The Conflict between the California Indians and White Civilization, I: The Indian Versus the Spanish Mission. *Ibero-Americana 21*. Berkeley, California.

[21] Cook, S. F. 1943b. The Conflict between the California Indians and White Civilization, II: The Physical and Demographic Reaction of the Non-Mission Indians in Colonial and Provincial California. *Ibero-Americana* 22. Berkeley, California.

[22] Levy, R. 1978. Costanoan. Page 486 in W. C. Sturtevant (ed.), *Handbook of North American Indians*, 8, California. Washington, DC: Smithsonian Institution.

[23] Bean, L. J. 1994. *The Ohlone Past and Present: Native Americans of the San Francisco Bay Region*. Ballena Press, Menlo Park, page xxiv.

[24] PaloAltoHistory.com. *Palo Alto: Rooted in History*. Available: <http://www.paloaltohistory.com>. Accessed: September 9, 2015.

unnamed, so a railroad official looked over at the gates and decided that "Menlo Park" would be officially adopted. This station is now California State Landmark No. 955, the oldest California station in continuous operation.[25]

San Mateo County became independent of San Francisco County in 1856. A county road had been laid from San Francisco to Belmont and soon extended to San José. This opened the San Francisco Peninsula to the residents of San Francisco who wished to establish summer residences in the country. Among the first to buy large tracts of land and build mansions were the Atherton, Hopkins, Flood, Mills, Donohoe, and Felton families. These estates were largely self-sufficient, working farms, and some had their own services, such as barber shops, general stores, blacksmith shops, livery stables, saloons, and hotels.[26]

On March 23, 1874, Menlo Park became the second incorporated city in San Mateo County, although only for a short time. The purpose was to provide a quick way to raise money for road repairs. This incorporation, which included Fair Oaks (later Atherton) and Ravenswood (later East Palo Alto), lasted only until 1876.[27]

Twentieth-Century History

Menlo Park remained relatively rural until World War I, when it was suddenly populated in 1917 by 27,000 soldiers who were in training at Camp Fremont for the 8th Division of the U.S. Army and for the 41st Division of the California National Guard before their planned deployment to France. Camp Fremont was located on land that extended from Valparaiso Avenue to San Francisquito Creek and El Camino Real to the Alameda de las Pulgas. Camp Fremont was in operation from 1917 to 1919 and covered 25,000 acres in Menlo Park. The transitory military population spurred the commercial growth of Menlo Park; its first gas station, water services, paved streets, and small businesses were a direct result. At the end of World War I, there was no longer a need for Camp Fremont, and the U.S. Army ordered the post closed. The buildings were sold off at auction, and the camp closed in January of 1920. At the camp's closure, the town reverted to being a small town with a population of 2,300.[28]

Menlo Park reincorporated in 1923, with much the same boundaries as the earlier town. Incorporation planning involving Menlo Park and Atherton culminated in a dramatic race to the county courthouse to file differing plans. Atherton representatives arrived only minutes before those from Menlo Park, who had wished to include Atherton in their plans. Final incorporation of Menlo Park took place in November 1927. However, growth continued at a slow rate. By 1940, 20 years after the closing of Camp Fremont, Menlo Park's population rose by less than 1,000, giving the City 3,258 residents.[29]

Near the Bay, Menlo Park developed light industrial plants after World War II. By the 1950s, as bayside land along the San Francisco Peninsula grew through silt accumulation and the infill of wetlands, land that was less desirable for residential and retail commercial space and more affordable and level for

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[25] Durham, David L. 1998. *California's Geographic Names: A Gazetteer of Historic and Modern Names of the State*.

[26] ESA. 2011. *Menlo Park El Camino Real Downtown Specific Plan DEIR.* Prepared for City of Menlo Park, San Francisco, CA; City of Menlo Park. 2013. *General Plan Housing Element.* City of Menlo Park, Menlo Park, CA.

[27] Ibid.

[28] City of Menlo Park. 2013. 4.4-7; Menlo Park Historical Association. 2002. *Early Days in Menlo Park.* Available: <http://www.menlopark.org/homepage/history.html>. Accessed: September 9, 2015; California State Military Museum. 2010. *Historic California Posts: Camp Fremont*. Available: <http://www/militarymuseum.org/cpfremont.html>. Accessed: September 9, 2015; U.S. Bureau of the Census. 1952. U.S. Government Printing Office, Washington, DC.

[29] City of Menlo Park. 2013. *Menlo Park Association*. 2002.

industrial development became available. The further development of railroads for freight, the waterfront for some industries, and US 101 provided transportation networks that were essential for the economical trade of raw materials and manufactured products. This area, which includes the Project site, forms a district that has been in transition from industrial/light industrial to high-tech and other business offices from the late twentieth century to the present.

Raychem Corporation

Raychem Corporation, the first company based on radiation chemistry for developing industrial products, was founded in 1957 by Paul M. Cook, a chemical engineer. Cook leased the 4,800-gross-square-foot (gsf) rectangular building with a barrel roof at 2821 Fair Oaks Avenue in Redwood City, California, on January 1, 1957, to develop this idea. He named his venture Irradiated Products, Inc., and began mortgaging his house and pulling together $50,000 in equity capital to rent the first high-energy electron accelerator, which arrived in March 1957. Richard Muchmore, a manufacturing executive, and James Meikle, an engineer, joined Cook in January 1957 as co-founders. The partners changed the name of the company to Raytherm in March 1957 and finally to Raychem Corporation in 1960 to avoid confusion with the already established Raytheon Corporation.

Cook and his associates at Raychem Corporation were successful in using the high-energy electron accelerator in a production setting for the first time at their site in Redwood City, proving that beams produced by high-energy electron accelerators could be reliable for constant industrial use and that high-energy radiation was safe for industrial environments. Raychem's success was in developing *radiation crosslinking*, a process by which certain polymers are exposed to radiation and cross linked to produce characteristics such as toughness, abrasion resistance, cut-through resistance, solvent and chemical resistance, improved high-temperature performance, and elastic memory. Radiation crosslinking would become a cornerstone technology, supporting a worldwide industry based on improved performance of electronics components, electrical insulation, and industrial and telecommunication infrastructures. Radiation crosslinking made possible the commercialization of another important technology, elastic memory for polymer materials, which allows cross-linked expanded materials to revert to their original proportions when exposed to heat. Radiation crosslinking was first performed at Raychem's facility in Redwood City with the rented General Electric (GE) high-energy electron accelerator, which produced a beam of high-energy electrons. By 1960, other companies that were developing followed Raychem's pioneering work with radiation chemistry. The lightweight and high-performance aspects of Raychem's irradiated products made them ideal for military applications and military contractors were Raychem's initial customers.[30]

To accommodate the growth from their success in applied radiation chemistry, Raychem moved out of the small Redwood City building and purchased an approximately 80-acre industrial property in Menlo Park in 1965. The initial property included the Project site and the parcel immediately to the east. In 1977, the property expanded farther to the east to Willow Road. In 1992, the property acquired an additional site, bound by Hacker Way/Network Circle north of Bayfront Expressway/State Route (SR) 84 (Bayfront Expressway).[31]

The Raychem buildings on the Project site, constructed during the first phase of the company's development of the site in the mid- to late 1960s, were designed and constructed by Michael R. Cabak, a little-known civil and structural engineer. According to U.S. Census marriage and divorce records,

[30] Ahrendt. 1997. *A National Historic Chemical Landmark.*

[31] Ibid; City of Menlo Park, Department of Planning, Permits-Plans; historicaerials.com. Accessed: September 8, 2015.

Michael Cabak was born in approximately 1928 and married three times in San Mateo and Santa Clara Counties. He started his career in the early 1960s and began Cabak Associates in Menlo Park in 1969, which later dissolved in 1991.[32]

The buildings on the Project site are designed in the Corporate Modern style. They feature primarily two-story steel and concrete construction, with full-height concrete block column surrounds supporting the thick and wide eaves, in the manner of Frank Lloyd Wright, and façades of glass separated by spandrel panels of blue glass. Appendix 3.7 contains the detailed description and photographs of the existing buildings on the Project site at the time of the NOP release.

Table 3.7-1 lists all of the buildings constructed on the Project site in or prior to 1971.[33] Figure 2-2 shows the existing sites and locations of the buildings on the Project site.

Table 3.7-1. Raychem Corporation Buildings at 300–309 Constitution Drive, Menlo Park

Building #	Name: Raychem Use	Construction Date
23 (300)	Distribution Center/Warehouse	1969 (north)/circa 1975 (south)
301	Sales	1967
302	Administration	1967
303	Research and Development	1967
304	Library	1990
305 A, B, C	Manufacturing, Buildings A, B and C	1966
305 C Addition	Beam Room	1969
306	Research and Development	1968
307[a]	Building E	1969
308[a]	Building H	1970
309[a]	Data Center	1990
CTF	Chemical Transfer Facility	1989
ACB	Air Compressor Building (west of 305 A)	1986

Source: ICF International, 2016.

Note:

a. Prior to the City's consideration of the Project, two buildings (307–309) were slated to be demolished. This will occur as a separate project. Therefore, for purposes of this analysis, the buildings that were on the Project site at the time of the NOP release (the baseline) are included. It is assumed that Buildings 307–309 are existing at the Project site.

In April 1997, the American Chemical Society designated the original Raychem building in Redwood City as a National Chemical Landmark for being the site of the application of the new science of radiation chemistry. At that time, Raychem had grown into a company that employed 8,500 people in more than 45 countries. Raychem was purchased by Tyco International in 1999, which split into Tyco Connectivity and Tyco Electronics. According to available permits, the Raychem site in Menlo Park switched ownership in 2000. A review of historic aerials noted no major exterior changes to the buildings on the Project site since 2000.

[32] U.S. Census Record, Marriage and Divorce Records, 1958, 1969, 1980. Accessed through Ancestry.com in September 2015; Wysk Company. *Profile: Cabak Associates*. Available: <www.wysk.com>. Accessed: September 10, 2015.

[33] The construction dates of the buildings in the Project site were provided by permits and plans filed by the company with the City of Menlo Park Planning Department and accessible at the Permits counter and by historic aerials at historicaerials.com.

Founder: Paul M. Cook

Paul M. Cook was born on April 25, 1924, in Ridgewood, New Jersey. Cook's father founded the Cornish Wire Company and was that company's president and chief mechanical engineer. Cook took an early interest in chemistry and technology. He attended the Massachusetts Institute of Technology (MIT) after high school in 1941 and studied with Warren K. Lewis. Cook enlisted in the Army in 1943 and attended Stanford University for two semesters while studying chemical engineering through the Army Specialized Training Program. Cook left the Army in 1946 to work but returned to MIT to complete his degree in 1947.

Cook started a wire company with his older brother after graduating from MIT but left in 1949 to join the Stanford Research Institute (SRI) as a chemical engineer and spearhead a new study sponsored by the U.S. government's Atomic Energy Commission, researching the potential industrial uses of waste fission products. The study was not successful. However, through the conclusions reached in his experiments for the study, Cook became convinced of the potential of radiation chemistry for developing industrial products. In the early 1950s, engineers at GE pioneered significant work in irradiated plastics and used radiation to cross link polyethylene in a tape form. This, along with his own experiments at SRI, called the Stanford Research Institute at the time, further convinced Cook that radiation could be used to develop new materials for industrial applications. SRI is now an internationally recognized research-and-development non-profit organization created by Stanford University and located at 333 Ravenswood Avenue, Menlo Park. Cook established the Radiation Engineering Laboratory at SRI in 1952 and became its president. By the next year, Cook began an SRI-funded off-hours business, the Sequoia Process Corporation, to make electronic hook-up wire for connecting electronic components. Cook left SRI in late 1953 to become Sequoia's full-time CEO. He left in 1956 because of disagreements with the vision for the company. Cook wanted to explore developing new, unique products using high-energy radiation, but parties at the company did not agree. Cook took to his own venture again and began Raychem with two other engineers in 1957 and successfully commercialized radiation chemistry.[34]

Historical Significance and Resource Evaluation

California Register of Historic Resources Criteria (CRHR)

The former Raychem Corporation property on the Project site is evaluated below under CRHR Criteria 1 through 4. The current study concludes that the buildings on the Project site do not appear to be eligible for the CRHR under Criteria 1, 2 3, and 4, nor as contributors to a CRHR-eligible historic district.

CRHR Criterion 1

Under CRHR Criterion 1 (event), the Project site is not significantly associated with the events surrounding the historical contributions of Raychem Corporation to the development of applied radiation chemistry. Raychem's significance is tied specifically to developing radiation crosslinking and making the application of radiation chemistry to industrial production possible. However, this event of historical significance did not take place on the Project site, occupied by Raychem from 1966 to 2000, but at the site in Redwood City, California, which Raychem leased in 1957. Therefore, the Project site does not appear to be eligible for listing in the CRHR under Criterion 1 for association with a significant event.

[34] Ahrendt. 1997. *A National Historic Chemical Landmark*; James J. Bohning, 1992. *Transcript of an Interview: Paul M. Cook.* Interview by James J. Bohning at San Carlos, California. Chemical Heritage Foundation, Oral History Program: Philadelphia, PA.

CRHR Criterion 2

Under CRHR Criterion 2 (person), the Project site is not significantly associated with Paul M. Cook, the founder of Raychem Corporation. Cook is significant for his contribution to the development of radiation chemistry in applied science. However, his experiments with fellow co-founders that led to the successful marketing and manufacture of radiation crosslinking do not appear to be sufficiently historically significant to merit CRHR eligibility and were initiated at a site in Redwood City 9 years prior to development of the Project site. Therefore, the Project site does not appear to be eligible for listing in the CRHR under Criterion 2 for association with a person of historical significance.

CRHR Criterion 3

Under CRHR Criterion 3 (architectural significance), the Project site is not associated with the works of a master Modern architect, nor does it possess high artistic value. The majority of the buildings at the Project site were designed and constructed in the Corporate Modern style of architecture by engineer and architect Michael Cabak. The buildings feature primarily two-story steel and concrete construction with full-height concrete block column surrounds that support the thick, wide eaves and façades of glass, which are separated by spandrel panels of blue glass. These features, however, lack architectural merit. The Project site, therefore, does not appear eligible for listing in the CRHR under Criterion 3 as the design of a master architect or as having architectural significance.

CRHR Criterion 4

CRHR Criterion 4 (information source), commonly applies to properties that contain or are likely to contain information bearing on an important archaeological research question about human history that can only be answered by the actual physical materials of cultural resources. Under Criterion 4, the Project site does not appear to be significant as a source, or likely source, of important historical or prehistorical information, nor does it appear likely to yield important information about historic construction methods, materials, or technologies.

Paleontological Setting

The fossil-yielding potential of a particular area is highly dependent on the geologic age and origin of the underlying rocks as well as on the processes that the rocks have undergone, both geologically and anthropogenically.[35] As discussed in Section 3.9, *Geology and Soils*, the overlying materials at the Project site are Novato clay, a silty clay that is interbedded with sand, and urban land, also known as artificial fill.

Table 3.7-2 lists the paleontological sensitivity of the map units in the vicinity of the Project site, which is within the Palo Alto quadrangle. For those geologic units with paleontological sensitivity, the types of fossils that may be present are also provided. For an explanation of how paleontological sensitivity is determined, see *Methods for Analysis*, below. Geologic units of Pleistocene age and older have potential to contain paleontological resources. Because California's Pleistocene nonmarine strata have yielded many important vertebrate fossils, continental deposits of Pleistocene age are generally treated as paleontologically sensitive in California.

[35] *Anthropogenic* means caused by human activity.

Table 3.7-2. Surficial Geologic Units in the Project Area

Age[a]	Geologic Unit[a]	Map Symbol[a]	Location with Respect to Project Site	Potential Fossil Type	Paleontological Sensitivity[b]
Historic	Artificial fill	af	Project site	N/A	Low
Historic	Artificial levee fill	alf	Project site	N/A	Low
Holocene	Bay mud	Qhbm	Project site	N/A	Undetermined
Holocene	Basin deposits	Qhb	Project site	N/A	Undetermined
Holocene	Floodplain deposits	Qhfp	Adjacent to Project site	N/A	Undetermined
Holocene	Natural levee deposits	Qhl	Near Project site	N/A	Undetermined
Holocene	Alluvial fan and fluvial deposits	Qhaf	Near Project site	N/A	Undetermined
Pleistocene	Alluvial fan and fluvial deposits	Qpaf	Near Project site	Contains freshwater mollusks and extinct late Pleistocene vertebrate fossils.[a]	High
Holocene	Older alluvial fan deposits	Qpoaf	Near Project site	Contains freshwater mollusks and extinct Pleistocene vertebrate fossils.[a]	High
Lower Pleistocene and upper Pliocene	Santa Clara Formation	Qtsc	Near Project site	"Rare" fossils appear in the Santa Clara Formation, including a land mammal from the late Pliocene and plant fossils from the late Pliocene(?) and early Pleistocene.	Undetermined
Upper(?) and middle Miocene	Ladera Sandstone	Tlad	Near Project site	At and near the base of Ladera Sandstone are medium to thick lenticular beds of well-cemented, fossiliferous chert-granule sandstone, which interfingers with fine-grained sandstone.[b]	High
Middle Miocene	Monterey Formation	Tm	Near Project site	Covering a large area of California and an extended period of time, this formation of marine deposits contains fossils of whales, dolphins, crabs, and kelps and other soft-bodied seaweeds.[c]	High

Age[a]	Geologic Unit[a]	Map Symbol[a]	Location with Respect to Project Site	Potential Fossil Type	Paleontological Sensitivity[b]
Middle Miocene	Page Mill Basalt	Tpm	Near Project site	N/A	Low
Middle and lower Eocene	Whiskey Hill Formation	Tw	Near Project site	N/A	Undetermined
Unspecified	Sandstone	fs	Near Project site	N/A	Undetermined
Unspecified	Greenstone	fg	Near Project site	N/A	Undetermined
Cretaceous and/or Jurassic	Serpentine	sp	Near Project site	N/A	Undetermined

Notes:

a. Brabb, E.E., R.W. Graymer, and D.L. Jones. 2000. *Geologic Map and Map Database of the Palo Alto 30' x 60' Quadrangle, California*. U.S. Geological Survey, Miscellaneous Field Studies Map MF-2332. Version 1. Available: <http://pubs.usgs.gov/mf/2000/mf-2332/>. Accessed: September 21, 2015.

b. *Paleontological sensitivity* is based on the type of geologic unit or formation and to what extent the unit has been affected by human activities. See *Methods for Analysis,* below, for a more detailed explanation.

c. Vanderhurst, W. Lee, Jon C. Cummings, and David W. Andersen. 1982. The Santa Clara Formation as a Record of Late Cenozoic Uplift of the Santa Cruz Mountains, Santa Clara County, California. In R.V. Ingersoll and M.D. Woodburne (eds.), *Cenozoic Nonmarine Deposits of California and Arizona*. Society of Economic Paleontologists and Mineralogists, Pacific Section. University of California. 122 p.

d. University of California Museum of Paleontology. n.d. *Localities of the Miocene: The Monterey Foundation of California*. Available: <http://www.ucmp.berkeley.edu/tertiary/mio/monterey.html>. Accessed: September 21, 2015.

Northern Menlo Park is situated on Holocene alluvial fan deposits and Bay mud, which overlie older deposits, and on Pleistocene basin, alluvial fan, and stream terrace deposits.[36] These deposits all have potential to contain paleontological resources. Remains of land mammals, such as extinct mammoth, bison, and camel, have been reported from localities of similar age and origin in nearby areas, such as San Francisquito Creek, Middlefield Road in San Mateo County, and at the Stanford Linear Accelerator.[37] As discussed above, vertebrate fossils are considered sensitive paleontological resources. Much of northern Menlo Park is also situated on artificial fill of historic age. These Holocene and historic deposits overlie the Monterey Formation, which underlies the Bay Area as well as much of the rest of the California coast and parts of the southern Central Valley.

As shown in Table 3.7-2, the Miocene-age Monterey Formation has high paleontological sensitivity and has yielded fossils of marine mammals and other vertebrates.[38]

Project Site

Project Site Geology

The Project site is situated on Holocene alluvial fan deposits and Bay mud as well as artificial fill of historic age that overlies older deposits. The native deposits, including underlying older deposits, have the potential to contain paleontological resources. The geologic units that underlie the Project site are shown in Table 3.7-2.

Paleontological Potential at the Project Site

Artificial fill could include sediment from older rocks that originated elsewhere. Therefore, it is possible that there could be fossils in the artificial fill at the Project site, but because the fossils would have been transported from their original locations, they would lack stratigraphic context and be of limited scientific value. Pollen, plants, and shells have been recovered from Bay mud, but vertebrate fossils have not been reported. Remains of land mammals (extinct mammoth, bison, and horse) have been reported from localities in younger alluvium along the Bay margin in the Bay Area.[39] The Monterey Formation is known to produce marine fossils, including vertebrate fossils.[40] As discussed under *Methods for Analysis*, vertebrate fossils are considered sensitive paleontological resources.

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[36] Brabb, E.E., Graymer, R.W., and Jones. D.L. 2000. *Geologic Map and Map Database of the Palo Alto 30' x 60' Quadrangle, California*. U.S. Geological Survey Miscellaneous Field Studies Map MF-2332. Version 1. Available: <http://pubs.usgs.gov/mf/2000/mf-2332/>. Accessed: September 21, 2015.

[37] University of California Museum of Paleontology. n.d. UCMP specimen search. Available: <http://ucmpdb.berkeley.edu/>. Accessed: September 21, 2015.

[38] University of California Museum of Paleontology. n.d. *Localities of the Miocene: The Monterey Foundation of California.* Available: <http://www.ucmp.berkeley.edu/tertiary/mio/monterey.html>. Accessed: September 21, 2015.

[39] University of California Museum of Paleontology. n.d. UCMP specimen search. Available: <http://ucmpdb.berkeley.edu/>. Accessed: September 21, 2015.

[40] University of California Museum of Paleontology. n.d. *Localities of the Miocene: The Monterey Foundation of California.* Available: <http://www.ucmp.berkeley.edu/tertiary/mio/monterey.html>. Accessed: September 21, 2015.

Environmental Impacts

This section describes the impact analysis related to cultural resources for the Project. It describes the methods used to determine the impacts of the Project and lists the thresholds used to conclude whether an impact would be significant. Impacts are determined to be no impact (NI), less than significant (LTS), less than significant with mitigation (LTS/M), or significant and unavoidable (SU). Measures to mitigate (i.e., avoid, minimize, rectify, reduce, eliminate, or compensate for) significant impacts accompany each impact discussion, as needed.

Thresholds of Significance

In accordance with Appendix G of the State CEQA Guidelines, the Project would be considered to have a potentially significant effect if it would result in any of the conditions listed below.

- Cause a substantial adverse change in the significance of a historical resource, as defined in Section 15064.5.
- Cause a substantial adverse change in the significance of an archaeological resource, pursuant to Section 15064.5.
- Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature.
- Disturb any human remains, including those interred outside of formal cemeteries.

Methods for Analysis

Records Search

Background research was conducted to identify any known cultural resources within 0.5 mile of the Project site. The research included a records search at the NWIC, Sonoma State University, Rohnert Park, in August 2015. Sources consulted during the records search included cultural resources studies and resource records, the Historic Properties Data File (August 24, 2015), the NRHP, the CRHR, California Historic Resources Inventory, California Historical Landmarks, and California Points of Historical Interest (May 1992 and updates).

No previously recorded cultural resources were identified by the NWIC in or adjacent to the Project site. However, four resources have been recorded within 0.5 mile of the Project site.

- **P-41-000282/CA-SMA-242:** This resource consists of a medium-density shell midden, which is highly disturbed by plowing/grading, about 0.5 mile west of the Project site. Fire-cracked rock, carbon, baked clay, lithics, a bowl mortar, and a possible human bone fragment have also been recorded at this site. A 2008 site record update, however, stated that there was no evidence of the previously recorded site despite a thorough inspection of the ground surface. Surface deposits within the recorded site were most likely destroyed within the railroad right-of-way.[41] This resource has not been evaluated for NRHP/CRHR eligibility.

[41] Whittaker, A. 2008. Continuation Sheet for P-41-00282/CA-SMA-242. Record on file at the Northwest Information Center, Sonoma State University, Rohnert Park, CA.

- **P-41-002292:** This resource consists of a shell scatter along the west side of Willow Road, about 0.5 mile southeast of the Project site. This resource has not been evaluated for NRHP/CRHR eligibility.
- **P-41-002351:** This historic-era resource consists of the Ravenswood Salt Works District, also known as the Alviso or Schilling Arden Salt Company. The district is located about 0.1 mile north of the Project site, encompassing the former salt ponds that now are a part of the Refuge. This historic-era resource is considered not eligible for the NRHP.
- **P-41-002415/CA-SMA-425:** This resource consists of shell, mammal bone, charcoal, and stone tool debris within dark midden soil in an apparent pit feature. This resource is located about 0.3 mile west of the Project site. This resource has not been evaluated for NRHP/CRHR eligibility.

Five cultural resources studies have covered portions of the Project site.

- S-3021, Dietz, S. 1976. *Archaeological Reconnaissance of the 100.6-acre Raychem Corporation Properties in Menlo Park, California.* No resources were identified during this study.
- S-7346, Offermann, J. 1985. *Archaeological Survey Report, Landscaping Project along Routes 84 and 101 in San Mateo and Alameda Counties* (04-SM/Ala-101, 84, 04253-033231). No resources were identified during this study.
- S-36481, Whitaker, A., P. Kaijankowski, J. Meyer, and B. Byrd. 2009. *Archaeological Survey Report for the Dumbarton Rail Corridor Project, San Mateo and Alameda Counties, California.* P-41-000282/CA-SMA-242 was re-investigated, and the site record was updated (see above description) during this study.
- S-38063, Kaptain, N. 2009. *Smart Corridors Geoarchaeological Sensitivity Research*. No resources were identified during this study.
- S-39604, Whitaker, A., P. Kaijankowski, J. Meyer, B. Byrd, and S. Waechter. 2012. *Archaeological Survey Report for the Dumbarton Rail Corridor Project, San Mateo and Alameda Counties, California.* P-41-000282/CA-SMA-242 was included in the study area, but because the site had been re-investigated in 2008, it was not updated at this time.

An additional 15 studies have been conducted within 0.5 mile of the Project site. These 15 studies consisted of studies for residential and commercial development. No resources within or adjacent to the Project site were identified in any of these studies.

Native American Consultation

ICF International (ICF) contacted the NAHC on August 20, 2015, and requested a search of its sacred land files. The NAHC responded on August 31, 2015, stating that a records search of the files failed to indicate the presence of Native American cultural resources in the immediate Project area.

The NAHC provided a list of 10 Native American contacts who might have information pertinent to the Project or have concerns regarding the Project. A letter explaining the Project, along with a map depicting the Project area, was sent to the contacts listed by the NAHC on September 3, 2015. The letters solicited responses from each of the contacts, should they have any questions, comments, or concerns regarding the Project.

Letters were sent to the following contacts:

- Katherine Erolinda Perez
- Jakki Kehl
- Linda G. Yamane
- Irene Zwierlein, chairperson, Amah Mutsun Tribal Band of Mission San Juan Bautista
- Michelle Zimmer, Amah Mutsun Tribal Band of Mission San Juan Bautista
- Valentin Lopez, chairperson, Amah Mutsun Tribal Band
- Ann Marie Sayers, chairperson, Indian Canyon Mutsun Band of Costanoan
- Rosemary Cambra, chairperson, Muwekma Ohlone Indian Tribe of the San Francisco Bay Area
- Edward Ketchum, Amah Mutsun Tribal Band
- Andrew Galvan, Ohlone Indian Tribe

To date, no responses have been received from any of the Native American contacts regarding the Project. However, Native American correspondence is ongoing and will be updated if and when responses are received. Appendix 3.7 contains copies of the Native American correspondence.

Architectural and Historical Survey and Research

An ICF senior architectural historian conducted a survey of the Project site on August 17, 2015, and took photographs to note current conditions and visible alterations to the buildings. ICF conducted background research to gain a general understanding of the history of the City of Menlo Park, with a focus on settlement, development, and architecture. Available permits and plans filed with the City of Menlo Park were viewed in person by ICF architectural historian Aisha Fike on September 8, 2015, at the Planning Department permit counter in Menlo Park, California. An email was submitted to the Silicon Valley Historical Association on September 2, 2015, requesting available historical information pertaining to the Project site. John McLaughlin, who is with the association, responded on September 7, 2015, to inform ICF that the association does not have any specific information available for the subject property. Additional sources of information consulted include the California Historic Resources Inventory and the Menlo Park Historic Resources list; *San Francisco Chronicle* articles, through the San Francisco Library online database; Social Security Administration marriage and divorce records and Birth Index through Ancestry.com; and historic aerial photographs (historicaerials.com).

Paleontological Resources

As discussed above under *Paleontological Setting*, the fossil-yielding potential of a particular area depends on the geologic age and origin of the underlying rocks. It also depends on the processes that the rocks have undergone, both geologic and anthropogenic.

The Impact Mitigation Guidelines Revisions Committee of the Society of Vertebrate Paleontology (SVP) has published its *Standard Guidelines* in response to a recognized need to establish procedures for the investigation, collection, preservation, and cataloging of fossil-bearing sites. The *Standard Guidelines*, which are widely accepted among paleontologists and followed by most investigators, identify the two key phases of paleontological resource protection as (1) assessment and (2) implementation. Assessment involves identifying the potential for a project site or area to contain significant nonrenewable paleontological resources that could be damaged or destroyed by project excavation or construction. Implementation involves formulating and applying measures to reduce such adverse effects.

The SVP defines level of potential as one of four sensitivity categories for sedimentary rocks: High, Undetermined, Low, and No Potential.[42]

- **High Potential.** Assigned to geologic units from which vertebrate or significant invertebrate, plant, or trace fossils have been recovered as well as sedimentary rock units suitable for the preservation of fossils (e.g., Middle Holocene[43] and older, fine-grained fluvial sandstones…fine-grained marine sandstones, etc.). Paleontological potential consists of the potential for yielding abundant fossils, a few significant fossils, or "recovered evidence for new and significant taxonomic, phylogenetic, paleoecologic, taphonomic, biochronologic, or stratigraphic data."
- **Undetermined Potential.** Assigned to geologic units "for which little information is available concerning their paleontological content, geologic age, and depositional environment." In cases where no subsurface data already exist, paleontological potential can sometimes be assessed by subsurface site investigations.
- **Low Potential.** Field surveys or paleontological research may allow determination that a geologic unit has low potential for yielding significant fossils (e.g., basalt flows). Mitigation is generally not required to protect fossils.
- **No Potential.** Some geologic units have no potential to contain significant paleontological resources, such as high-grade metamorphic rocks (e.g., gneisses and schists) and plutonic igneous rocks (e.g., granites and diorites). Mitigation is not required.

Geologic maps were consulted to determine the geologic units present at and near the Project site. Once these were determined, a records search was conducted using the University of California Museum of Paleontology database of San Mateo County fossil records in the Project vicinity and the geologic units present. This was to confirm the presence of fossils in nearby areas with similar geologic settings and demonstrate the likelihood of fossil presence at the Project site. Based on information from the records search, paleontological sensitivity, based on SVP Guidelines, was assigned to each geologic unit present at the Project site (Table 3.7-2).

Impacts and Mitigation Measures

Impact CUL-1: Impacts on Historic Resources. The Project would not cause a substantial adverse change in the significance of a historical resource. (LTS)

The site survey and research conducted for the Project concluded that the former Raychem Corporation buildings at the Project site do not appear to be eligible for the CRHR under Criterion 1, 2, 3, or 4. The buildings also are not contributors to a CRHR-eligible historic district. As discussed above, technical inventions were successfully marketed by Raychem Corporation but not invented at the Project site (CRHR Criterion 1 [event]). Paul M. Cook, Raychem Corporation founder and engineer, did not market or initiate the manufacture of radiation crosslinking at the Project site (CRHR Criterion 2 [person]). Most of the buildings at the Project site were designed and constructed in the ubiquitous Corporate Modern

[42] Society of Vertebrate Paleontology. 2010. *Standard Procedures for the Assessment and Mitigation of Adverse Impacts to Paleontological Resources*. Impact Mitigation Guidelines Revision Committee. Available: <http://vertpaleo.org/PDFS/8f/8fe02e8f-11a9-43b7-9953-cdcfaf4d69e3.pdf>. Accessed: September 21, 2015.

[43] The Holocene is the time period in the last approximately 11,700 years of Earth's geologic history. The exact extent of the "Middle Holocene" is not generally agreed upon and defined. One generally accepted definition is the period from 7,000 years before present to 5,000 years before present (NOAA National Climate Data Center. 2008. The Mid-Holocene "Warm Period." Available: <http://www.ncdc.noaa.gov/paleo/globalwarming/holocene.html>. Accessed: September 21, 2015. Last updated: August 20, 2008.)

style of architecture by engineer and architect Michael Cabak and lack architectural merit (Criterion 3 [architectural significance]). The buildings have no potential to be a source of important historical information (Criterion 4 [information source]). In addition, no listed or eligible historic district encompasses or is located adjacent to the Project site. Therefore, demolition of Buildings 301–306, as proposed during construction of the Project, would not affect the historic resources at the Project site.

No previously recorded historic resources were identified on or adjacent to the Project site. However, one historic site has been recorded within 0.5 mile of the Project site. As discussed in *Methods for Analysis*, this site is P-41-002351 (Ravenswood Salt Works District). This resource is considered not eligible for the NRHP. Project implementation would not affect any of the listed historic resources because distance from the Project site prevents any potential for indirect impact on the setting of the historic resources. As such, Project implementation would not affect a historic resource at the Project site because it does not include any historic resources. In addition, because of distance, construction of the proposed buildings would not affect historic sites. Therefore, the impact would be ***less than significant.***

Impact CUL-2: Impacts on Archaeological Resources. The Project has the potential to encounter and damage or destroy previously unknown subsurface archaeological resources during construction. (LTS/M)

The Project site lies within an area once that was occupied by the Costanoan, or Ohlone, group of Native Americans. Native American archaeological sites in this area of San Mateo County tend to be situated near the historic margin of the Bay's tidal marshland and along creeks that drain upland terrain that borders the Bayshore plain. However, the majority of the Project site is located on former marshland. Therefore, prehistorically, there was a lack of stable, dry ground. The portion of the Project site not located within the former marshland is located on artificial fill.

No archaeological resources were identified in or adjacent to the Project site. However, three prehistoric sites have been recorded within 0.5 mile of the Project site. As discussed in *Methods for Analysis*, these sites are P-41-000282/CA-SMA-242 (a medium-density shell midden, highly disturbed by plowing/grading), P-41-002292 (a shell scatter), and P-41-002415/CA-SMA-425 (shell, mammal bone, charcoal, and stone tool debris within dark midden soil in an apparent pit feature). Therefore, there is a low probability for previously undiscovered archaeological resources to be encountered during construction of various elements of the Project. However, if encountered during Project construction, such resources could be damaged or destroyed, resulting in a ***potentially significant*** impact.

MITIGATION MEASURE. Impacts on archaeological resources would be reduced to a ***less-than-significant*** level by implementing Mitigation Measure CUL-2.1.

CUL-2.1: Perform Construction Monitoring, Evaluate Uncovered Archaeological Features, and Mitigate Potential Disturbance of Identified Significant Resources at the Project Site. Prior to demolition, excavation, grading, or other construction-related activities on the Project site, the Project Sponsor shall hire a qualified professional archaeologist (i.e., one who meets the Secretary of the Interior's professional qualifications for archaeology or one under the supervision of such a professional) to monitor, to the extent determined necessary by the archaeologist, Project-related earth-disturbing activities (e.g., grading, excavation, trenching). In the event that any prehistoric or historic-period subsurface archaeological features or deposits, including locally darkened soil (midden), that could conceal cultural deposits, animal bone, obsidian, and/or mortar are discovered during demolition/construction-related earthmoving activities, all

ground-disturbing activity within 100 feet of the discovery shall be halted immediately, and the Planning and Building Divisions shall be notified within 24 hours. The City shall consult with the Project archaeologist to assess the significance of the find. Impacts on any significant resources shall be mitigated to a less-than-significant level through data recovery or other methods determined adequate by the City that are consistent with the Secretary of the Interior's Standards for Archaeological Documentation. If Native American archaeological, ethnographic, or spiritual resources are discovered, all identification and treatment of the resources shall be conducted by a qualified archaeologist and Native American representatives who are approved by the local Native American community as scholars of the cultural traditions. In the event that no such Native American is available, persons who represent tribal governments and/or organizations in the locale in which resources could be affected shall be consulted. When historic archaeological sites or historic architectural features are involved, all identification and treatment is to be carried out by historical archaeologists or architectural historians who meet the Secretary of the Interior's professional qualifications for archaeology and/or architectural history.

Impact CUL-3: Impacts on Paleontological Resources. The Project could destroy a unique paleontological resource or site or unique geologic feature. (LTS/M)

The Project has the potential to directly or indirectly destroy a unique paleontological resource or site or unique geologic feature. Impacts on paleontological resources would depend on the depth, extent, and type of soil-disturbing activities that occur as a result of construction as well as the paleontological sensitivity of the materials underlying the site.

Site preparation would involve earthwork, such as excavation, grading, trenching, and the installation of foundation piles, all of which would encounter artificial fill and could encounter native deposits. Activities that disturb artificial fill would not result in a significant impact on paleontological resources because, as discussed above, fill has low paleontological sensitivity. Activities that intercept clay soils or the underlying older deposits could expose undisturbed deposits that contain fossils. These activities could damage or destroy fossils. Because the surficial soils and older underlying deposits have undetermined as well as high paleontological sensitivity, this is considered a ***potentially significant*** impact.

MITIGATION MEASURE. Mitigation Measure CUL-3.1 would ensure that construction personnel would recognize fossil materials and follow proper notification procedures in the event that such materials are uncovered during construction. Implementation of Mitigation Measure CUL-3.1 would reduce potentially significant impacts on paleontological resources to a ***less-than-significant*** level.

CUL-3.1: *Conduct Protocol and Procedures for Encountering Paleontological Resources*. Prior to the start of any subsurface excavations that would extend beyond previously disturbed soils, all construction forepersons and field supervisors shall receive training by a qualified professional paleontologist, as defined by the SVP, who is experienced in teaching non-specialists to ensure they recognize fossil materials and follow proper notification procedures in the event any such materials are uncovered during construction. Procedures to be conveyed to workers include halting construction within 50 feet of any potential fossil find and notifying a qualified paleontologist, who shall evaluate its significance.

If a fossil is determined to be significant and avoidance is not feasible, the paleontologist shall develop and implement an excavation and salvage plan in accordance with SVP standards. Construction work in these areas shall be halted or diverted to allow recovery of fossil remains in a timely manner. Fossil remains collected during the monitoring and salvage portion of the mitigation program shall be cleaned, repaired, sorted, and cataloged. Prepared fossils, along with copies of all pertinent field notes, photos, and maps, shall then be deposited in a scientific institution with paleontological collections. A final Paleontological Mitigation Plan Report shall be prepared that outlines the results of the mitigation program. The City shall be responsible for ensuring that the monitor's recommendations regarding treatment and reporting are implemented.

Impact CUL-4: Impacts on Human Remains. The Project has the potential to encounter or discover human remains during excavation or construction. (LTS/M)

As noted earlier, the NWIC background records search did not identify any human remains in or within 0.5 mile of the Project site. The Project site is located either within former marshland or on artificial fill. However, because three prehistoric sites have been recorded within 0.5 mile of the Project site, there is a potential for of encountering human remains during construction. Such resources may be eligible for listing in the CRHR. If encountered during construction, such resources could be damaged or destroyed, resulting in a ***potentially significant*** impact.

MITIGATION MEASURE. Mitigation Measure CUL-4.1 would reduce impacts to a ***less-than-significant*** level.

CUL-4.1: *Comply with State Regulations Regarding the Discovery of Human Remains at the Project Site.* If human remains are discovered during any construction activities, all ground-disturbing activity within 50 feet of the remains shall be halted immediately, and the county coroner shall be notified immediately, according to Section 5097.98 of the State Public Resources Code and Section 7050.5 of California's Health and Safety Code. Additionally, the Planning and Building Divisions shall be notified. If the remains are determined by the county coroner to be Native American, the NAHC shall be notified within 24 hours, and the guidelines of the NAHC shall be adhered to in the treatment and disposition of the remains. The Project Sponsor shall also retain a professional archaeologist with Native American burial experience to conduct a field investigation of the specific site and consult with the Most Likely Descendant, if any, identified by the NAHC. As necessary, the archaeologist may provide professional assistance to the Most Likely Descendant, including the excavation and removal of the human remains. The City of Menlo Park Community Development Department, Planning Division, shall be responsible for approval of recommended mitigation, consistent with the provisions and standards of state law, as set forth in State CEQA Guidelines Section 15064.5(e) and Public Resources Code Section 5097.98. The applicant shall implement approved mitigation, to be verified by the Planning Division, before the resumption of ground-disturbing activities within 50 feet of where the remains were discovered.

Cumulative Impacts

The geographic context for the analysis of cumulative impacts associated with cultural resources considers a broad regional system. The cumulative context for this cultural resources analysis is the Bay Area, an area where common patterns of prehistoric and historic development have occurred. This analysis accounts for anticipated cumulative growth within the nine counties that make up the Bay Area.

The projects considered in this analysis are shown in Table 3.0-3 of Chapter 3, *Environmental Impact Analysis.* In addition, buildout of the general plans of the nine Bay Area counties and associated cities is considered in the cumulative context.

Impact C-CUL-1: Cumulative Impacts on Historical Resources. Development in the Bay Area could have significant impacts on historical resources. However, construction of the Project would not contribute to a cumulative impact. (LTS)

Urban development that has occurred over the past several decades in the Bay Area has resulted in the demolition and alteration of historical resources. It is reasonable to assume that present and future development will continue to result in impacts on historical resources. Because all historical resources are unique and nonrenewable members of finite classes, all adverse effects or negative impacts erode a dwindling resource base. Federal, state, and local laws protect historical resources in most instances. Even so, it is not always feasible to protect historical resources, particularly when preservation in place would prevent implementation of projects. For this reason, the cumulative effects of development in the region on historical resources are considered significant.

The Project includes the demolition of Buildings 301–306 and the construction of two new office buildings (Buildings 21 and 22) and a 200-room hotel. Other separate projects on the Project site considered in the cumulative analysis include the renovation of Building 23 and the demolition of Buildings 307–309. These buildings are older than 50 years; however, none of the onsite buildings that would be demolished as part the Project, or other separate projects, are eligible for listing in the CRHR individually and are not considered part of a historic district. Therefore, the cumulative impact on historical resources would be ***less than significant.***

Impact C-CUL-2: Cumulative Impacts on Archaeological, Paleontological Resources, and Human Remains. Construction activities on the Project site and other development could result in impacts on archaeological resources, paleontological resources, and human remains. (LTS)

Given that known prehistoric resources have been identified within 0.5 mile of the Project site, there is the possibility that previously undiscovered archaeological resources, including human remains, could be encountered during construction. The Project, in combination with other foreseeable development in the identified geographic context, including other separate projects on the Project site, also has the potential to encounter and damage or destroy previously unknown paleontological resources during construction. All significant archaeological resources, paleontological resources, and human remains are unique and nonrenewable resources.

As analyzed above, the Project could contribute to the cumulative loss of archaeological, paleontological resources, and human remains. Therefore, the Project's contribution could be considerable. Mitigation Measures CUL-2.1, CUL-3.1, and CUL-4.1 prescribe discovery procedures for any previously unknown archaeological, paleontological resources, or human remains encountered during Project construction. The discovery procedures are consistent with professional standards and, because they pertain to discovered human remains, are compliant with state law. Compliance with these mitigation measures would reduce the Project's contribution to a cumulative impact to a ***less-than-significant*** level.

3.8 Biological Resources

This section describes the affected environment and regulatory setting for biological resources related to the Project. It also describes the potential impacts on biological resources that would result from implementation of the Project and feasible mitigation measures that would reduce these impacts. This section is based on a biological resources survey conducted by ICF International on August 17, 2015. The purpose of the biological resources survey was to determine if the Project would affect any wetlands and/or habitat that could support special-status species known in the San Francisco Bay (Bay) region and document any occurrences of those species if observed during the field survey.

Issues identified in response to the Notice of Preparation (NOP) (Appendix 1) were considered in preparing this analysis. Applicable issues that were identified include increased predator access to the nearby Don Edwards Bay National Wildlife Refuge (Refuge) and Bay due to the proposed bicycle/pedestrian bridge over Bayfront Expressway/State Route 84 (Bayfront Expressway) as well as other indirect impacts on native wildlife in the Refuge and the Bay.

Existing Conditions

Regulatory Setting

Federal

Endangered Species Act

The federal Endangered Species Act (ESA) was enacted in 1973. Under the ESA, the Secretary of the Interior and the Secretary of Commerce jointly have the authority to list a species as threatened or endangered (16 United States Code [USC] 1533[c]). The ESA is administered by both the National Marine Fisheries Service (NMFS) and U.S. Fish and Wildlife Service (USFWS). NMFS is accountable for animals that spend most of their lives in marine waters, including marine fish, most marine mammals, and anadromous fish, such as Pacific salmon. USFWS is accountable for all other federally listed plants and animals.

Pursuant to the requirements of ESA, an agency reviewing a proposed project within its jurisdiction must determine whether any federally listed threatened or endangered species may be present and whether the project would have a potentially significant impact on such species. In addition, the agency is required to determine whether the project is likely to jeopardize the continued existence of any species proposed to be listed under the ESA or result in the destruction or adverse modification of critical habitat proposed to be designated for such species (16 USC 1536[3][4]). Therefore, project-related impacts on these species or their habitats would be considered significant and would require mitigation.

Projects that would result in “take” (i.e., kill, harm, harass, etc.) of any federally listed threatened or endangered species are required to obtain authorization from NMFS and/or USFWS through either Section 7 (interagency consultation) or Section 10(a) (incidental take permit) of the ESA, depending on whether the federal government is involved in permitting or funding the project. The Section 7 authorization process is used to determine if a project with a federal nexus would jeopardize the continued existence of a listed species and what mitigation measures would be required to avoid jeopardizing the species. The Section 10(a) process allows take of endangered species or their habitats in non-federal activities.

Migratory Bird Treaty Act of 1918

The federal Migratory Bird Treaty Act (MBTA) enacts the provisions of treaties between the United States, Great Britain, Mexico, Japan, and the Soviet Union and authorizes the U.S. Secretary of the Interior to protect and regulate the taking of migratory birds. It establishes seasons and bag limits for hunted species and protects migratory birds, their occupied nests, and their eggs (16 USC 703; 50 Code of Federal Regulations [CFR] 21 and 50 CFR 10). Most actions that result in taking or in permanent or temporary possession of a protected species constitute MBTA violations. Examples of permitted actions that do not violate MBTA are the possession of a hunting license to pursue specific game birds, legitimate research activities, display in zoological gardens, bird-banding, and other similar activities. USFWS is responsible for overseeing compliance with MBTA, and the U.S. Department of Agriculture's Animal Damage Control Officer makes recommendations on related animal protection issues.

Clean Water Act

The federal Clean Water Act (CWA) is the primary federal law protecting the quality of the nation's surface waters, including lakes, rivers, and coastal wetlands. CWA empowers the U.S. Environmental Protection Agency (EPA) to set national water quality standards and effluent limitations and establishes permit review mechanisms to enforce them. Most CWA provisions are at least indirectly relevant to the management and protection of biological resources because of the link between water quality and ecosystem health. The portions that are most directly relevant to biological resources management are contained in Section 404, which regulates the discharge of dredged and fill materials into waters of the United States (comprising wetlands and other waters of the United States), which include the following water bodies:

- All areas within the ordinary high-water mark of a stream, including non-perennial streams with a defined bed and bank and any stream channel that conveys natural runoff, even if it has been realigned.
- Seasonal and perennial wetlands, including coastal wetlands.

Section 404 requires project proponents to obtain a permit from the U.S. Army Corps of Engineers (USACE) for all discharges of dredged or fill material into waters of the United States, including streams, ponds, and wetlands, before proceeding with a proposed activity. CWA Section 401 requires that applicants for a Section 404 permit must first obtain certification from the Regional Water Quality Control Board (RWQCB) that a project will comply with state water quality standards.

Fish and Wildlife Coordination Act

The Fish and Wildlife Coordination Act requires consultation by federal agencies with USFWS when the waters of any stream or other body of water are proposed, authorized, permitted, or licensed to be impounded, diverted, or otherwise controlled or modified under a federal permit or license (16 USC 661–667[e]).

Most USFWS comments on applications for permits under CWA Section 404 are conveyed to USACE through the consultation process required by this coordination act. This act may apply to the Project (e.g., through USACE permitting for the Project).

USFWS provides advisory comments and recommends mitigation measures to avoid impacts on wetlands or to modify activities that may directly affect wetlands. Mitigation recommended by USFWS may include restoring or creating habitat to avoid a net loss of wetland functions and values. Although consultation with USFWS is required, USACE is not required to implement FWS recommendations.

State

California Endangered Species Act

The California Endangered Species Act (CESA) was enacted in 1984. Under the CESA, the California Fish and Game Commission (CFGC) has the responsibility for maintaining a list of threatened species and endangered species. Pursuant to the requirements of the CESA, an agency reviewing a proposed project within its jurisdiction must determine whether any state-listed endangered or threatened species may be present and determine whether the project would have a potentially significant impact on such species. In addition, the California Department of Fish and Wildlife (CDFW) encourages informal consultation on any project that may affect a candidate species. The CESA prohibits the take of California listed animals and plants in most cases, but CDFW may issue incidental take permits under special conditions.

California Native Plant Protection Act

Regarding rare plant species, the CESA defers to the Native Plant Protection Act (NPPA) of 1977, which prohibits importing rare and endangered plants into California, taking rare and endangered plants (in certain circumstances), and selling rare and endangered plants. State-listed plants are protected mainly in cases where state agencies are involved in projects under the California Environmental Quality Act (CEQA). The NPPA does not prohibit take of rare and endangered plants incidental to possession or sale of real estate (California Fish and Game Code Section 1908); consequently, it does not prohibit removal of a rare or endangered plant in the course of development of land but rather only in the context or removal of the plant for the purposes of sale. Owners of land with known rare or endangered species are required to notify CDFW of plans to change land use a minimum of 10 days prior to the change to allow CDFW time to salvage the plants. However, if CDFW fails to respond within these 10 days, then the landowner may proceed with the land use change (California Fish and Game Code Section 1913(c)).

California Fish and Game Code

CDFW maintains lists of Species of Special Concern (SSC), species that must receive special attention from federal agencies during environmental review, although they are not otherwise protected under the ESA. Project-related impacts on such species would also be considered significant under the State CEQA Guidelines Section 15380 and would require mitigation.

The California Fish and Game Code provides protection from take for a variety of species, referred to as *fully protected species*. Section 3511 lists fully protected birds, Section 3515 lists fully protected fish, Section 4700 lists fully protected mammals, and Section 5050 lists fully protected amphibians and reptiles. The California Fish and Game Code, Section 86, defines take as “hunt, pursue, catch, capture, or kill or attempt to hunt, pursue, catch, capture, or kill.” Except for take related to scientific research, all take of fully protected species is prohibited.

Sections 3503 and 3800 of the California Fish and Game Code prohibit the “take, possession, or destruction of birds, their nests, or eggs” and the take of nongame birds, respectively. Section 3503.5 specifically prohibits the take, possession, or destruction of birds of prey (hawks, eagles, owls, and allies, often referred to as "raptors") and their nests. Human disturbance that causes nest abandonment and/or loss of reproductive effort (killing or abandonment of eggs or young) is considered “take.” Removal of vegetation is the most common action that can lead to a violation of these code sections.

California Species of Special Concern

CDFW maintains administrative lists of SSC, species that carry no special legal status but are considered to be at risk by CDFW; state, local, and federal governmental entities; regulators; land managers; planners; consulting biologists; and others. CDFW's Wildlife Branch, under its Nongame Wildlife Program, is responsible for producing and updating SSC publications for mammals, birds, reptiles, and amphibians. CDFW's Fisheries Branch is responsible for updates to the Fish SSC document. Section 15380 of the State CEQA Guidelines clearly indicates that SSC should be included in an analysis of project impacts if it can be shown that they meet the sensitivity criteria outlined therein. When analyzing the significance level of a project's impact on SSC, analysts typically consider factors such as population-level effects, proportion of the taxon's range affected by the project, regional effects, and impacts on habitat features necessary for survival.

Sensitive Natural Communities

Special-status or sensitive natural communities (vegetation types) have limited distribution statewide or within a county or region. CDFW's Vegetation Classification and Mapping Program (VegCAMP) works to classify and map the vegetation of California and determine the rarity of vegetation types. The current version of VegCAMP's List of Vegetation Alliances and Associations (or Natural Communities List[1]) indicates which communities are currently considered to be rare or highly imperiled. Communities with a state rarity ranking of S1–S3 (based on NatureServe's Heritage Methodology) are considered rare or imperiled, and impacts on such communities may be considered significant under CEQA.

Local

City of Menlo Park Municipal Code Chapter 13.24

The Project would be subject to the City of Menlo Park (City) Municipal Code (Municipal Code), Chapter 13.24,[2] which establishes regulations for the preservation of heritage trees. Chapter 13.24 defines heritage trees as:

- A tree or group of trees of historical significance, special character, or community benefit that have been specifically designated by resolution of the City Council;
- An oak tree (*Quercus* sp.) that is native to California and has a trunk with a circumference of 31.4 inches (diameter of 10 inches) or more, measured at 54 inches above natural grade. Trees with more than one trunk shall be measured at the point where the trunks divide, with the exception of trees that are under 12 feet in height, which will be exempt from this section; and
- All trees other than oaks that have a trunk with a circumference of 47.1 inches (diameter of 15 inches) or more, measured 54 inches above natural grade. Trees with more than one trunk shall be measured at the point where the trunks divide, with the exception of trees that are less than 12 feet in height, which are exempt from the ordinance (Ord. 928, Section 1 (part), 2004).

As required by the City's Municipal Code, tree surveys shall be conducted by an International Society of Arboriculture (ISA) certified arborist, and a tree report and map shall be prepared showing the locations of all pertinent trees prior to initiation of construction activities. Any work performed within an area 10 times the diameter of the tree (i.e., the tree protection zone) shall require submittal of a tree protection plan for review and approval by the Community Development Director or his/her designee

[1] California Department of Fish and Game. 2010. *List of Vegetation Alliances and Associations*. Vegetation Classification and Mapping Program. Sacramento, CA. September. Accessed: August 21, 2015.
[2] City of Menlo Park. 2010. *Menlo Park Municipal Code*. Section 16.46.030(7). December 14, 2010.

prior to issuance of any permit for grading or construction and shall be prepared by a certified arborist. Removal of heritage trees requires obtaining an appropriate permit from the Director of Public Works or his/her designee and payment of a fee. Applicants are required to submit a site plan with the Heritage Tree Removal Application, even if they have submitted a site plan to the City for a planning or building permit. The site plan facilitates the review by the City Arborist. For removals of two or more trees, applicants are required to submit a planting plan, indicating the species, size, and location of the proposed replacement trees on a site plan. Heritage tree permits related to construction will be charged for City-retained arborist expenses.

City of Menlo Park General Plan

City of Menlo Park General Plan. The following policies from the Open Space Element of the general plan are relevant to biological resources and the Project.

Policy OSC1.1: Natural Resources Integration with Other Uses. Protect Menlo Park's natural environment and integrate creeks, utility corridors, and other significant natural and scenic features into development plans.

Policy OSC1.3: Sensitive Habitats. Require new development on or near sensitive habitats to provide baseline assessments prepared by qualified biologists, and specify requirements relative to the baseline assessments.

Policy OSC1.4: Habitat Enhancement. Require new development to minimize the disturbance of natural habitats and vegetation, and requires re-vegetation of disturbed natural habitat areas with native or non-invasive naturalized species.

Policy OSC1.6: South Bay Salt Pond Restoration Project and Flood Management Project. Continue to support and participate in federal and state efforts related to the South Bay Salt Pond Restoration Project and flood management project. Provide public access to the Bay for scenic enjoyment and recreation opportunities as well as conservation education opportunities related to the open Bay, the sloughs, and the marshes.

Policy OSC1.15: Heritage Trees. Protect Heritage Trees, including during construction activities, through enforcement of the Heritage Tree Ordinance (Chapter 13.24 of the Municipal Code).

Policy OSC2.4: Parkland Standards. Strive to maintain the standard of 5 acres of parkland per 1,000 residents.

ConnectMenlo General Plan Update. The City General Plan (Land Use and Circulation Elements) and M-2 Area Zoning Update, also known as ConnectMenlo, is under way. Although not yet adopted, the following draft policies in ConnectMenlo pertain to the Project and are identified for informational purposes.

Policy LU-6.2: Open Space in New Development. Require new nonresidential, mixed-use, and multiple-dwelling development of a certain minimum scale to provide ample open space in the form of plazas, greens, community gardens, and parks whose frequent use is encouraged through thoughtful placement and design.

Policy LU-6.11: Bayfront Development. Allow development near the Bay only in already-developed areas.

Environmental Setting

The existing TE Connectivity Campus is bordered by Bayfront Expressway to the north, Facebook Building 20 to the east, the Dumbarton Rail Corridor to the south, and Chilco Street to the west and south. The Project site includes the existing buildings, paved parking lots, and associated ornamental

landscaping on the TE Connectivity Campus as well as an area on the north side of Bayfront Expressway, south of the existing San Francisco Bay Trail (Bay Trail) where the proposed bicycle/pedestrian bridge would touch down. The surrounding area comprises residential and commercial development to the east, west, and south and the Refuge to the north.

The Project site is relatively flat. Elevations on the site range from 7 to 10.5 feet North American Vertical Datum (NAVD). The Project site is built on Bay fill lands that formerly consisted of marshes, both saltwater and brackish water. The Natural Resource Conservation Service has mapped soils on the majority of the Project site as Urban Land–Orthents (reclaimed complex, 0 to 2 percent slopes) as well as Novato Clay (0 to 1 percent slopes) near the Project's boundary with Bayfront Expressway. Both Urban Land–Orthents and Novato Clay are generally associated with former tidal flats as well as salt marshes.

There are currently 770 trees at the Project site, including 274 trees that qualify as heritage trees under the City's Heritage Tree Ordinance.[3,4] Approximately 35 tree species are located on the Project site, with the most represented species being London plane (*Platanus x hispanica*), myoporum (*Myoporum laetum*), olive (*Olea europea*), Monterey pine (*Pinus radiata*), and Aleppo pine (*Pinus halepensis*). Other types of vegetation observed at the Project site include one English ivy (*Hedera helix*), prickly lettuce (*Lactuca serriola),* stinkwort (*Dittrichia graveolens*), fringed willowherb (*Epilobium ciliatum*), *Cotoneaster* sp., rosemary (*Rosmarinus officinalis*), iceplant (*Carpobrotus edulis*), cheeseweed (*Malva parviflora*), horseweed (*Conyza canadensis*), everlasting (*Pseudognaphalium* sp.), California poppy (*Eschscholzia californica*), and rough cat's ear (*Hypochaeris radicata*) growing in the pavement cracks and unpaved disturbed areas.

Developed areas have lower value for wildlife because of greater use by people and vegetation maintenance in these areas. Wildlife species that use developed habitats are typically adapted to a higher level of disturbance. Within the Project site, the quality of the habitat for wildlife is poor because of the lack of large, mature trees, water, and areas of natural vegetation. Wildlife species observed on the Project site include western scrub jay (*Aphelocoma californica*), northern mockingbird (*Mimus polyglottos*), house finch (*Haemorhous mexicanus*), mourning dove (*Zenaida macroura*), and European starling (*Sturnus vulgaris*). Other generalist species that have adapted to urban environments and are expected to occur on the Project site include raccoon (*Procyon lotor*), Virginia opossum (*Didelphis virginiana*), roof rat (*Rattus rattus*), Norway rat (*Rattus norvegicus*), feral and domestic cats (*Felis catus*), common raven (*Corvus corax*), American crow (*Corvus brachyrhynchos*), and striped skunk (*Mephitis mephitis*). Raptors could also nest on the electric transmission towers located on the northern edge of the Project site at the boundary with Bayfront Expressway; no existing raptor nests were observed on these towers during the site visit on August 17, 2015.

The portion of the Refuge adjacent to the Project site includes primarily salt marsh and peripheral halophyte marsh habitat. It provides suitable foraging, roosting, and nesting habitat for a variety of shorebirds, including western snowy plover (*Charadrius alexandrines nivosus*), least terns (*Sternula antillarum*), black skimmers (*Rynchops niger*), Forster's terns (*Sterna forsteri*), Caspian terns (*Hydroprogne caspia*), and other piscivorous birds. Habitat for Ridgeway's rail and salt-marsh harvest mouse is limited because of the narrow tidal marsh areas.[5]

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[3] SCBA Tree Consulting. 2015. *Tree Survey at 301–309 Constitution Drive.* December 21, 2015.

[4] City of Menlo Park. 2010. *Menlo Park Municipal Code*. Section 16.46.030(7). December 14, 2010.

[5] H.T. Harvey Associates. 2005. *Biology and Habitats Existing Conditions Report*. Prepared for the California State Coastal Conservancy, U.S. Fish and Wildlife Service, and California Department of Fish and Game. March. Available <http://www.southbayrestoration.org/pdf_files/Biology_Habitats_Existing_Conditions.3.25.05.pdf>.

Wetlands and Non-Wetland Waters of the United States

As described above, the Project site is built on Bay fill and is therefore located on historic saltwater or brackish water marshes that were filled in the 1960s to create more land for development. Although such Bay fill lands can sometimes revert to wetland conditions, the existing Project site is paved, landscaped, or otherwise graded; therefore, no wetlands or non-wetland waters of the United States are present. There is a large concrete drainage ditch on the south side of Bayfront Expressway adjacent to, but outside of, the Project site's boundary.

Special-Status Species

A list of special-status plant and wildlife species that have the potential to occur in the vicinity of the Project site was compiled from a California Natural Diversity Database (CNDDB) query[6] for the area with a 2-mile radius; USFWS[7] species list databases; the California Native Plant Society[8] (CNPS) *Online Inventory of Rare and Endangered Plants,* as shown on the U.S. Geological Survey's Palo Alto 7.5-minute quadrangle map; and other relevant sources. The results of these queries are presented in Table 3.8-1, along with a description of the habitat requirements for each species, its protection status, and a brief discussion of its likelihood to occur on the Project site. Figures 3.8-1 and 3.8-2 depict only the locations of the occurrences of listed special-status species from the CNDDB query (therefore, the information included in Table 3.8-1 is not identical to the information depicted in Figures 3.8-1 and 3.8-2). Species with distributions outside the Project site vicinity and/or for which suitable habitat is clearly absent (as determined by desktop aerial photo review) (e.g., marbled murrelet) are not included in Table 3.8-1. Only one special-status wildlife species, hoary bat (*Lasiurus cinereus*), has any potential to occur on the Project site. Many other special-status species occur or have the potential to occur in the adjacent Refuge and are noted as such in Table 3.8-1.

For the purposes of this analysis, special-status species include the following:

- Species that are listed, proposed for listing, or candidates for possible future listing as threatened or endangered under the ESA of 1973, as amended.
- Species that are listed or proposed for listing as threatened or endangered under the CESA of 1984, as amended.
- Species that are designated as Fully Protected under Sections 3511 (birds), 4700 (mammals), and 5050 (reptiles and amphibians) of the California Fish and Game Code.
- Species that are designated by CDFW as California SSC.
- Species that meet the definitions of rare or endangered under CEQA (Section 15380).

[6] California Department of Fish and Wildlife. 2015. *California Natural Diversity Database*. Available: http://www.dfg.ca.gov/biogeodata/cnddb/mapsanddata.asp. Accessed: August 21, 2015.
[7] U.S. Fish and Wildlife Service. 2015. *IPaC.* Available: <http://ecos.fws.gov/ipac/>. Accessed: August 21, 2015.
[8] California Native Plant Society. 2015. *Online Inventory of Rare and Endangered Plants*. Available: <http://www.dfg.ca.gov/biogeodata/cnddb/mapsanddata.asp>. Accessed: August 21, 2015.

Table 3.8-1. Special-Status Plant and Wildlife Species Known to Occur or Having Potential to Occur in the Project Vicinity

Scientific and Common Name	Fed/State/Other	Geographic Distribution	Habitat Requirements	Likelihood of Occurrence
Plants				
C*entromadia parryi* ssp. congdonii Congdon's tarplant	–/-/1B.1	East San Francisco Bay Area, Salinas Valley, Los Osos Valley.	Occurs in valley and foothill grasslands (alkaline). Blooms from May to October/November. Elevation ranges from 1 to 230 meters.	**None:** Documented within 2 miles of the Project site but not expected to occur because of a lack of suitable valley and foothill grassland habitat.
Cirsium praeteriens Lost thistle	-/-/1A	Unknown.	Perennial herb that is native to California. Elevation ranges from 0 to 100 meters.	**None:** Documented within 2 miles of the Project site but not expected to occur because the only sources of information for this site are 1897 and 1901 collections by Congdon. Presumed extinct.
Chloropyron maritimum ssp. *palustre* Point Reyes bird's-beak	-/-/1B,2	Coastal Northern California from Humboldt to Santa Clara Counties; Oregon.	Coastal salt-marsh and swamp habitats. Blooms from June to October. Elevation ranges from 0 to 10 meters.	**None:** Although there are known occurrences within 2 miles of the Project site, the absence of suitable habitat at the Project site precludes the species from occurring.
Stuckenia filiformis ssp. *alpina* Slender-leaved pondweed	-/-/2B.2	Klamath Ranges, Sierra Nevada, Great Central Valley, Central Coast, and San Francisco Bay Area.	Assorted shallow freshwater marshes and swamps. Blooms from May to July. Elevation ranges from 300 to 2,150 meters.	**None:** No suitable habitat occurs within or adjacent to the Project site. However, there are known occurrences within 2 miles of the Project site.

Scientific and Common Name	Fed/State/Other	Geographic Distribution	Habitat Requirements	Likelihood of Occurrence
Fish				
Spirinchus thaleichthys Longfin smelt	–FC/ST/SSC-	Upstream from Rio Vista (on the Sacramento River in the Delta), including the Cache Slough region and Medford Island (on the San Joaquin River in the Delta), through Suisun Bay and Suisun Marsh, San Pablo Bay, San Francisco Bay (main), South San Francisco Bay, the Gulf of the Farallones, Humboldt Bay, Eel River estuary, and local coastal areas.	Occurs in waters below 22 degrees Celsius; can tolerate a large range of salinities. Spends adult life in bays, estuaries, and nearshore coastal areas; migrates into freshwater rivers to spawn. Found mid-water and near the bottom; migrates up and down the water column for prey (Moyle 2002).	**None:** No aquatic habitat occurs on the Project site.
Amphibians				
Ambystoma californiense California tiger salamander	FT/ST/CSC	Central Valley, including Sierra Nevada foothills, up to approximately 1,000 feet above mean sea level and coastal region from Sonoma County south to Santa Barbara County.	Valley and foothill grasslands and adjacent oak woodlands; shelters in rodent burrows, and breeds in seasonal wetlands such as vernal pools.	**None:** No seasonal wetlands or valley and foothill grasslands are present on or adjacent to the Project site.
Rana draytonii California red-legged frog	FT/-/SSC	Found along the coast and coastal mountain ranges of California from Mendocino County to San Diego County and in the Sierra Nevada from Butte County to Stanislaus County.	Permanent and semi-permanent aquatic habitats, such as creeks and coldwater ponds with emergent and submergent vegetation; may aestivate in rodent burrows or cracks during dry periods.	**None:** No suitable aquatic habitat on or adjacent to the Project site.

Scientific and Common Name	Fed/State/Other	Geographic Distribution	Habitat Requirements	Likelihood of Occurrence
Reptiles				
Thamnophis sirtalis tetrataenia San Francisco garter snake	FE/SE/FP	Occurs in the San Francisco Bay Area from Half Moon Bay to the west side of the Santa Cruz Mountains. Populations found west of Bayshore Expressway, surrounding Crystal Springs and San Andreas Reservoirs, and at San Francisco International Airport, Laguna Salada, Pescadero Marsh, Ano Nuevo State Reserve, and Cascade Ranch.	Uses a variety of habitats, preferring grasslands or wetlands near ponds, marshes, and sloughs. May overwinter in upland areas away from water.	**None:** The CNDDB record is a non-specified occurrence from 1922 and identified as "unreliable" by USFWS. The Project site is not located within or near one of the known populations and does not contain suitable habitat for this species.
Birds				
Circus cyaneus Northern harrier	-/-/CSC	Breeds from sea level to 5,700 feet in elevation in the Central Valley and Sierra Nevada and up to 3,600 feet in northeastern California. Permanent resident of the northeastern plateau and coastal areas; less common resident of the Central Valley.	Grasslands and open habitats; typically nests on the ground in dense vegetation.	**None:** No suitable nesting habitat on the Project site. Known to occur on the nearby Refuge.
Laterallus jamaicensis coturniculus California black rail	-/ST/FP	Permanent resident in the San Francisco Bay and eastward through the Delta into Sacramento and San Joaquin Counties; small populations in Marin, Santa Cruz, San Luis Obispo, Orange, Riverside, and Imperial Counties.	Occurs most commonly in tidal emergent wetlands dominated by pickleweed or in brackish marshes that support bulrushes in association with pickleweed. In fresh water, usually found in bulrushes, cattails, and saltgrass. Usually found in immediate vicinity of tidal sloughs.	**None:** No suitable habitat on the Project site. May occur in nearby salt marshes on the Refuge.

Scientific and Common Name	Fed/State/Other	Geographic Distribution	Habitat Requirements	Likelihood of Occurrence
Rallus obsoletus obsoletus California Ridgway's (= clapper) rail	FE/SE/FP	Found along the Pacific Coast in Monterey and San Luis Obispo Counties.	Saltwater and brackish marshes traversed by tidal sloughs in the vicinity of the Bay. Associated with abundant growths of pickleweed but feeds away from cover on invertebrates from mud-bottom sloughs.	**None:** No suitable habitat on the Project site. May occur in nearby salt marshes on the Refuge.
Charadrius alexandrinus nivosus Western snowy plover	FT/-/SSC	Population defined as those birds that nest adjacent to or near tidal waters, including all nests along the mainland coast, peninsulas, offshore islands, and adjacent bays and estuaries. Twenty breeding sites are known in California, from Del Norte to San Diego County.	Coastal beaches, sand spits, dune-backed beaches, sparsely vegetated dunes, beaches at creek and river mouths, and salt pans at lagoons and estuaries.	**None:** No suitable nesting habitat on the Project site. Known to occur on the nearby managed pond/salt panne habitat on the Refuge.
Sternula antillarum browni California least tern	FE/SE/FP	Found along the Pacific Coast of California from San Francisco to Baja California	Nests are situated on barren to sparsely vegetated places near water, normally on sandy or gravelly substrates. In the Bay Area, breeding typically takes place on abandoned salt flats.	**None:** No suitable habitat on the Project site. May forage in nearby managed ponds on the Refuge.
Athene cunicularia Burrowing owl	–/–/SSC	Lowlands throughout California, including the Central Valley, northeastern plateau, southeastern deserts, and coastal areas; rare along South Coast.	Lowlands throughout California, including the Central Valley, northeastern plateau, southeastern deserts, and coastal areas; rare along South Coast. Level, open, dry, heavily grazed or low-stature grassland or desert vegetation with available burrows.	**None:** No open, dry habitat with available burrows occurs within or adjacent to the Project site.

Scientific and Common Name	Fed/State/Other	Geographic Distribution	Habitat Requirements	Likelihood of Occurrence
Geothlypis trichas sinuosa San Francisco (= saltmarsh) common yellowthroat	-/-/SSC	Found only in the San Francisco Bay Area in Marin, Napa, Sonoma, Solano, San Francisco, San Mateo, Santa Clara, and Alameda Counties.	Freshwater marshes in summer and salt or brackish marshes in fall and winter; requires tall grasses, tules, and willow thickets for nesting and cover.	**None:** No suitable habitat on the Project site. May occur in nearby salt marshes on the Refuge.
Melospiza melodia pusillula Alameda song sparrow	-/-/SSC	Found only in marshes along the southern portion of the San Francisco Bay.	Tidal marshes around the perimeter of San Francisco Bay.	**None:** No suitable habitat on the Project site. May occur in nearby salt marshes on the Refuge.
Mammals				
Lasiurus cinereus Hoary bat	-/-/SSC	Occurs throughout California from sea level to 13,200 feet.	Found primarily in forested habitats. Also found in riparian areas and in park and garden settings in urban areas. Day roosts in foliage of trees.	**Low:** Potentially suitable tree roosts on the Project site. Documented within 2 miles of the Project site in 1894. Seven additional occurrences were documented in San Mateo County in 1991 (outside of the 2-mile boundary).
Reithrodontomys raviventris Salt-marsh harvest mouse	FE/SE/FP	San Francisco Bay estuary and Suisun Marsh.	Occurs only in the saline emergent wetlands of the Bay and its tributaries. Pickleweed is primary habitat. Does not burrow; builds loosely organized nests. Requires higher areas for flood escape.	**None:** No suitable habitat on the Project site. May occur in nearby salt marshes on the Refuge.
Sorex vagrans halicoetes Salt-marsh wandering shrew	-/-/SSC,	Southern arm of the Bay in San Mateo, Santa Clara, Alameda, and Contra Costa Counties.	Upper half of the middle marsh zone where inundated by higher high tides that contain abundant vegetation cover, surface moisture, and organic detritus, with abundant amphipods and other crustaceans.	**None:** No suitable habitat on the Project site. May occur in nearby salt marshes on the Refuge.
Taxidea taxus American badger	-/-/SSC	Permanent resident found throughout most of the state, except in the northern North Coast area.	Dry, open grasslands, fields, and pastures from high alpine meadows to sea level.	**None:** No open grasslands, fields, or pastures occur at the Project site.

Scientific and Common Name	Fed/State/Other	Geographic Distribution	Habitat Requirements	Likelihood of Occurrence

Source:
California Department of Fish and Wildlife. 2015. *California Natural Diversity Database.*
California Native Plant Society. 2015. *Online Inventory of Rare and Endangered Plants*.
Nilsen, Tokatlian, Scullen, Burns. 2013. *Western Snowy Plover Monitoring in San Francisco Bay*. Milpitas, CA.
U.S. Fish and Wildlife Service. 2006. *San Francisco Garter Snake 5-Year Review: Summary and Evaluation*. Sacramento, California.
U.S. Fish and Wildlife Service. 2013. *Recovery Plan for Tidal Marsh Ecosystems of Northern and Central California*. Sacramento, California.

Notes:
Federal
FE = Federally listed as Endangered
FT = Federally listed as Threatened
FC = Federally candidate for listing
State
SE = State listed as Endangered
ST = State listed as Threatened
FP = State listed as Fully Protected

Other
SSC = California Species of Special Concern

California Rare Plant Rank
1A = Plants presumed extirpated in California and either rare or extinct elsewhere.
1B = Plants that are rare, threatened, or endangered in California and elsewhere.
2A = Plants that are presumed extirpated in California but common elsewhere.
2B = Plants that are rare, threatened, or endangered in California but more common elsewhere.
3 = Plants about which more information is needed.
4 = Plants of limited distribution - a watch list
CNPS Threat Code Extension
.1 = Species seriously endangered in California
.2 = Species fairly endangered in California
.3 = Species not very endangered in California

– = no status

Scientific and Common Name	Fed/State/Other	Geographic Distribution	Habitat Requirements	Likelihood of Occurrence
Likelihood of Occurrence Evaluations A rating of "low" indicates that the species was not found during biological surveys conducted to date on the site and is not expected given its known regional distribution or the quality of habitats on the site. A rating of "none" indicates that the species would not be expected to occur on the Project site because the site is not within the known range of the species or does not support suitable habitat.				

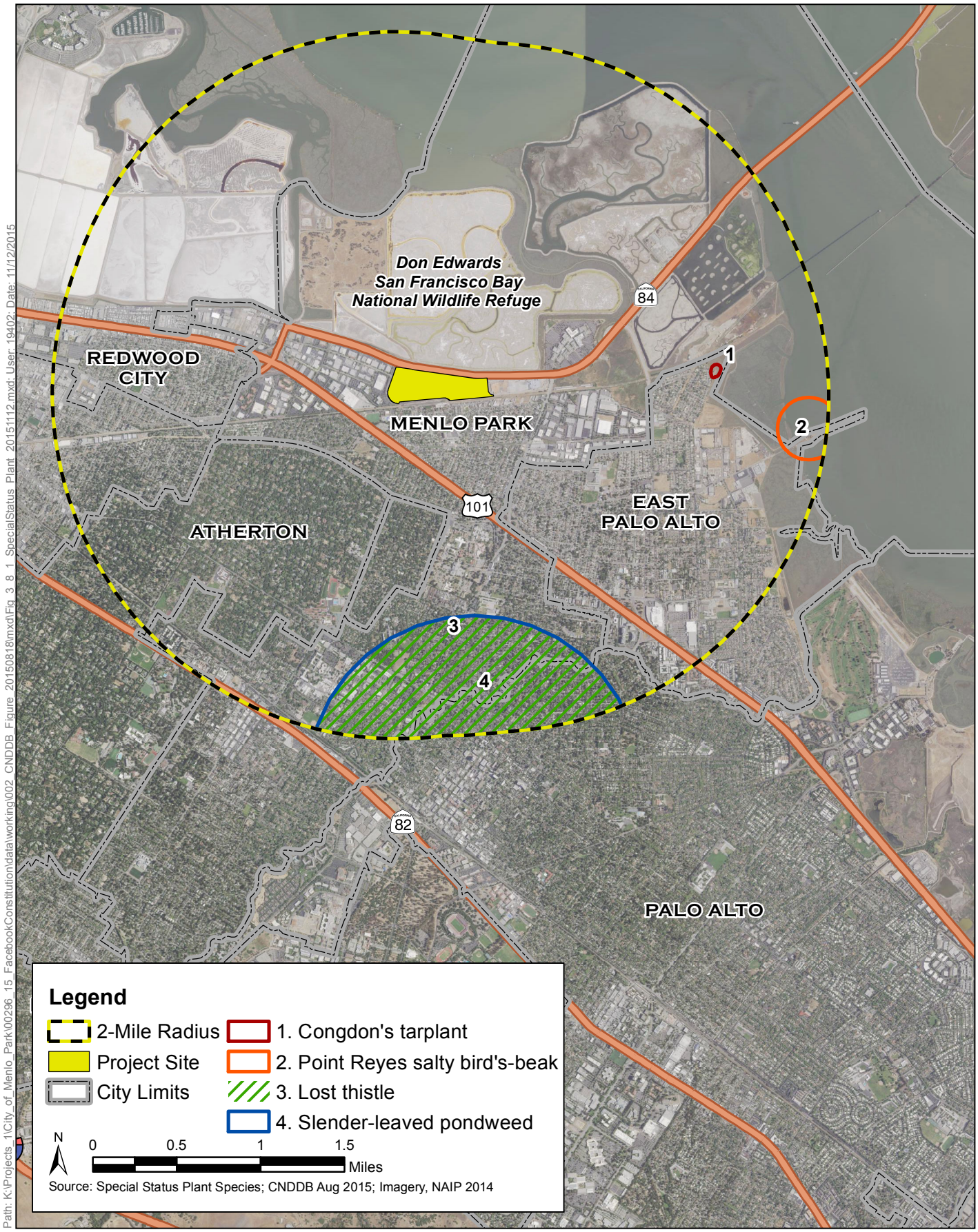

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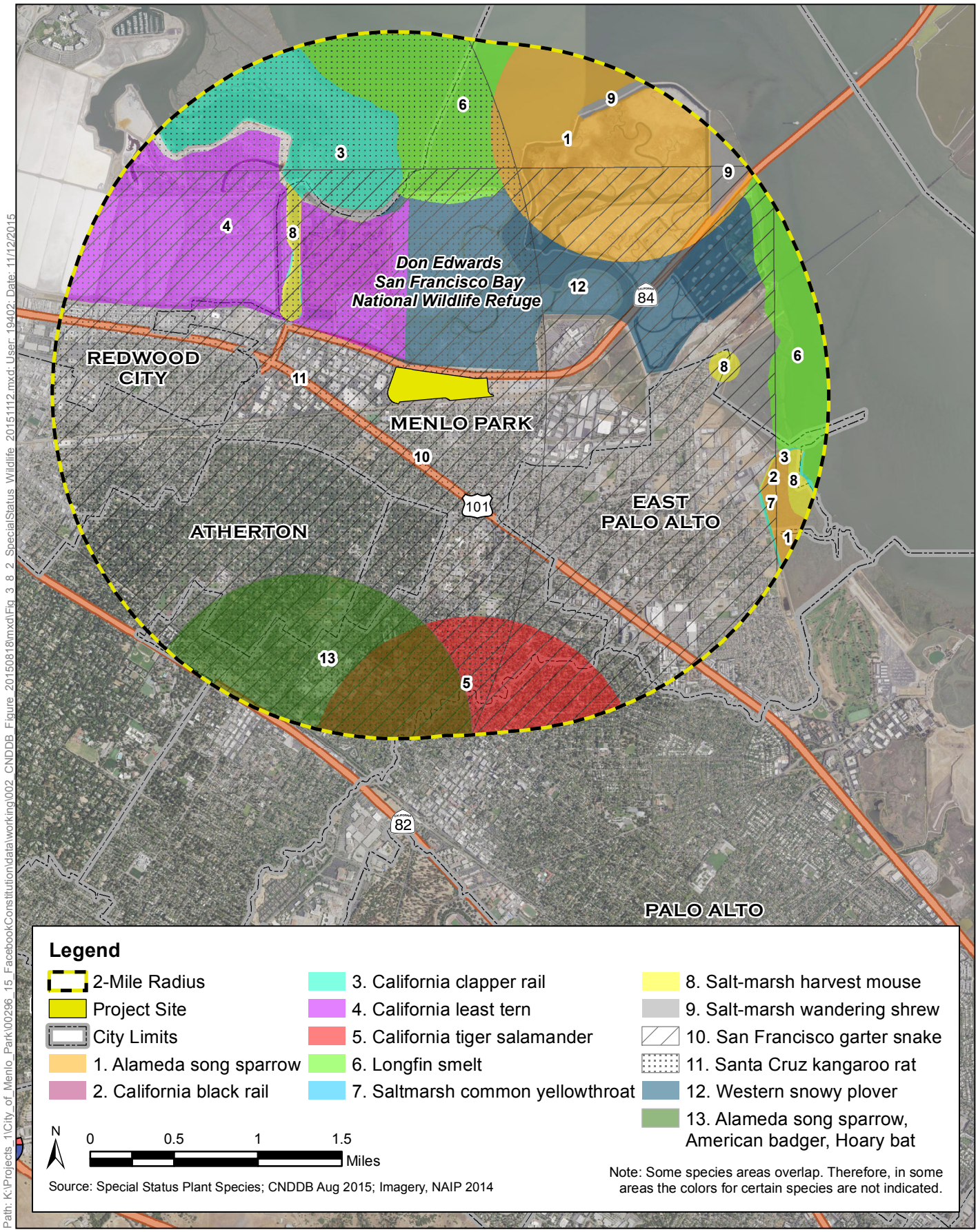
Figure 3.8-1
Special Status Plant Species
Facebook Campus Expansion Project Draft EIR



Path: K:\Projects_1\City_of_Menlo_Park\00296_15_FacebookConstitution\data\working\002_CNDDB_Figure_20150818\mxd\Fig_3_8_2_SpecialStatus_Wildlife_20151112.mxd; User: 19402; Date: 11/12/2015

Figure 3.8-2
Special Status Wildlife Species
Facebook Campus Expansion Project Draft EIR

Environmental Impacts

This section identifies potential impacts on biological resources from implementation of the Project. It describes the methods used to determine the impacts of the Project and lists the thresholds used to measure whether an impact would be significant. Impacts are determined to be no impact (NI), less than significant (LTS), less than significant with mitigation (LTS/M), or significant and unavoidable (SU). Measures to mitigate (i.e., avoid, minimize, rectify, reduce, eliminate, or compensate for) significant impacts accompany each impact discussion, as needed.

Thresholds of Significance

In accordance with Appendix G of the State CEQA Guidelines, the Project would have a significant impact if it would result in any of the conditions listed below.

- 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 CDFW or USFWS.
- Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations or by CDFW or USFWS.
- Have a substantial adverse effect on federally protected wetlands, as defined by Section 404 of the Clean Water Act (including, but not limited to, marshes, vernal pools, coastal wetlands, etc.), through direct removal, filling, hydrological interruption, or other means.
- 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.
- Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance.
- Conflict with the provisions of an adopted habitat conservation plan, natural community conservation plan, or other approved local, regional, or state habitat conservation plan.

Methods for Analysis

The identification of potential impacts on biological resources was based on an analysis of special-status species with the potential to occur in the Project vicinity (i.e., review of CNDDB,[9] CNPS,[10] and USFWS[11] databases) and their habitat requirements; existing habitat conditions on the Project site, as observed during the August 17, 2015, site visit; comments received on the NOP; and a review of the Project description to identify any actions that could result in significant impacts on biological resources, as defined by the above thresholds of significance. As required by the City's Municipal Code, tree surveys were conducted by an ISA certified arborist,[12] and a tree report and map[13] was prepared that shows the locations of all pertinent trees prior to initiation of construction activities.

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[9] California Department of Fish and Wildlife. 2015. *California Natural Diversity Database*. Available: <http://www.dfg.ca.gov/biogeodata/cnddb/mapsanddata.asp>. Accessed: August 21, 2015.

[10] California Native Plant Society. 2014. *Online Inventory of Rare and Endangered Plants*. Available: http://www.dfg.ca.gov/biogeodata/cnddb/mapsanddata.asp. Accessed August 21, 2015.

[11] U.S. Fish and Wildlife Service. 2015. *IPaC.* Available: <http://ecos.fws.gov/ipac/>. Accessed: August 21, 2015.

[12] SCBA Tree Consulting. 2015. *Tree Survey at 301–309 Constitution Drive.* December 21, 2015.

[13] Gehry Partners, LLP. 2015. *Proposed Future Tree Information Site Plan*. October 9, 2015.

Impacts Not Evaluated In Detail

Loss of Riparian Habitat, Sensitive Natural Communities, or Wetlands. The August 17, 2015, field survey found that no riparian habitat, sensitive natural communities, or wetlands are present on the Project site. The Project site is located approximately 250 feet south of the Refuge, but there is no habitat connectivity between the Project site and the Refuge because of the presence of Bayfront Expressway. The proposed multi-use bicycle/pedestrian bridge over Bayfront Expressway would touch down on the north side of Bayfront Expressway and provide access to the existing Bay Trail. The bridge touchdown area would be located within the California Department of Transportation (Caltrans) easement, immediately adjacent to the north side of the Bay Trail. Although the bridge touchdown area would not extend into the Refuge, a portion of the aerial walkway could cantilever beyond the Caltrans easement. Regardless, the aerial structure would not result in the loss of riparian habitat or sensitive natural communities. There is a large concrete drainage ditch on the south side of Bayfront Expressway adjacent to, but outside of, the Project site's boundary. The concrete drainage ditch would not be affected by the Project. Therefore, implementation of the Project would result in ***no impact*** on riparian habitat, sensitive natural communities, or wetlands; this impact is not discussed further.

Conflicts with Adopted Habitat Conservation Plans. The Project site is not a part of an adopted habitat conservation plan, natural community conservation plan, or other approved local, regional, or state habitat conservation plan. The entire Project site is developed and zoned M-2 (General Industrial) and M-2-X (General Industrial, Conditional Development). As described above, the Project includes a bicycle/pedestrian trail that would touch down on the north side of Bayfront Expressway, approximately 100 feet from the Refuge. USFWS is actively pursuing expansion of the Refuge and protection of the habitats and associated plant and wildlife species contained therein. USFWS is also closely involved with the South Bay Salt Pond Restoration Project, which has active restoration sites near the Project site. Implementation of the Project would not involve any construction outside the currently developed/disturbed areas; therefore, the Project would not interfere with management and/or expansion of the Refuge or the restoration project (this is discussed in more detail in the *Cumulative Impacts* section, below). The Project would have ***no impact*** on an adopted habitat conservation plan, natural community conservation plan, or other approved local, regional, or state habitat conservation plan; therefore, this impact is not discussed further.

Impacts and Mitigation Measures

Impact BIO-1: Direct Impacts on Special-Status Species. The Project could directly affect species that have been identified as candidate, sensitive, or special-status in local or regional plans, policies, or regulations. (LTS/M)

Hoary bats are the only special-status species with any potential to occur on the Project site. Although they have a low likelihood of occurrence, hoary bats could roost in the foliage of trees at the Project site. With implementation of the Project, seven of the existing 10 buildings on the Project site would be demolished,[14] and most of the vegetation, including all 770 trees at the Project site (274 of which qualify as heritage trees),[15] would be removed. However, as part of the Project, approximately 1,600 trees would be planted as landscaping on the Project site; of that number, a minimum of 423 would be planted

[14] Buildings 307–309 (which are considered two buildings) would be demolished under a separate project, and therefore, the demolition of these buildings is not considered part of the Project. Building 23 would remain at the Project site.

[15] SCBA Tree Consulting. 2015. *Tree Survey at 301–309 Constitution Drive.* December 21, 2015.

to offset the removal of heritage trees.[16] This would result in an overall net gain in roosting habitat for potential bat species. The removal of trees that contain active bat roosts, particularly during the nesting season (typically April through August), could result in the loss of individual bats, bat colonies, or their habitat. Although adult hoary bats may be able to escape during tree removal, if tree and shrub removal is to occur during the maternity season (May 1 through October 1), young bats that cannot yet fly are likely to be killed or injured during vegetation removal. This would result in take of these species. The loss of individual bats and disruption of maternity roosting bats, resulting in the abandonment of young or the loss of young through vegetation removal, would be a ***potentially significant*** impact.

MITIGATION MEASURE. Implementation of Mitigation Measure BIO-1.1 would reduce potential roosting and breeding bat impacts from the Project to a ***less-than-significant*** level.

BIO-1.1: Identify and Protect Roosting and Breeding Bats on the Project Site and Provide Alternative Roosting Habitat. The Project Sponsor shall implement the following measures to protect any roosting and/or breeding bats found in a tree that is to be removed during Project implementation.

Prior to tree removal or demolition activities, the Project Sponsor shall retain a qualified wildlife biologist with demonstrated bat survey experience to conduct a focused survey for bats and potential roosting sites within trees that are to be removed during the period when bats are most active (May 1 through October 1). The surveys can be conducted by visual identification. If bats are observed on the Project site in areas where they could be affected by the Project, they will be identified to species level using a bat echolocation detector (e.g., "Anabat" unit). If no roosting sites or bats are found, the biologist shall submit a letter report confirming absence to CDFW, and no further mitigation will be required.

If roosting bats are found during the above survey and roosting areas will be affected, avoidance and minimization measures shall be implemented. Appropriate measures will be determined in coordination with CDFW and may include the following:

- Tree removal shall be avoided between April 15 and September 15 (the maternity period) to avoid impacts on pregnant females and active maternity roosts (whether colonial or solitary).
- All tree removal will be conducted between September 15 and October 30, which corresponds to the time period when bats have not yet entered torpor or are not caring for non-flying young.
- Trees will be removed in pieces rather than felling the entire tree.
- If a maternity roost is located, whether solitary or colonial, that roost will remain undisturbed until September 15 or until a qualified biologist has determined the roost is no longer active.
- If avoidance of non-maternity roost trees is not possible and tree removal or trimming must occur between September 15 and October 30, a qualified biologists will monitor tree trimming/removal. Prior to removal/trimming, each tree will be gently shaken; several minutes should pass before felling trees or trimming limbs to allow bats time to arouse and leave the tree. The biologists should search downed vegetation for dead and injured bats. The presence of dead or injured bats that are species of special concern will be reported to CDFW.

[16] Gehry Partners, LLP. 2016. *Proposed Future Tree Information Site Plan*. March 3, 2016.

- Compensatory mitigation for the loss of roosting habitat will also be determined through consultation with CDFW and may include the construction and installation of suitable replacement habitat (e.g., bat houses, cottonwood trees) onsite.
- The performance standard for any replacement roosting habitat will be to demonstrate occupancy by roosting bats within 5 years of installation or construction. Occupancy shall be determined by whichever monitoring technique (e.g., roost emergence surveys, acoustic surveys) the qualified bat biologist deems most likely to determine bat presence.

The Project Sponsor will be responsible for ensuring that CDFW requirements are implemented. Multiple survey visits and survey methods may be required at a single site to determine presence or absence of roosting bats, depending on season and roost type.

Impact BIO-2: Indirect Impacts on Special-Status Species. The Project could result in increased predation of special-status bird and mammal species that inhabit nearby saltwater and brackish water marshes in the Don Edwards National Wildlife Refuge. (LTS/M)

As discussed under Impact BIO-1, seven existing buildings and most of the vegetation on the Project site would be removed. As part of the Project, three new buildings would be constructed, and approximately 1,600 trees would be planted as landscaping on the Project site. Additionally, the Project would include a 2-acre publicly accessible park in the center of the site and a bicycle/pedestrian bridge over Bayfront Expressway that would allow for wildlife movement between Belle Haven, the Project site, Bedwell Bayfront Park, and the Refuge. All of these Project components could facilitate increased predation of special-status species in the adjacent Refuge.

Mammalian predators could use the bicycle/pedestrian bridge to cross Bayfront Expressway and access the Refuge; however, predators can already cross Bayfront Expressway at any intersection without median barriers, such as at the intersections with Chilco Street, Building 20 (exit/entrance), and Willow Road (which also has an underground protected tunnel). Migration across Bayfront Expressway is most conceivable at night when traffic is reduced and mammalian predators are less likely to be injured or killed by cars. The existing protected tunnel under the Bayfront Expressway/Willow Road intersection, which connects the Buildings 10–19 Campus and the Building 20 Campus, is also a safe means of passage at any time of day. Because most wildlife species prefer concealed migration pathways, the existing tunnel is more suitable for wildlife movement than the proposed bicycle/pedestrian bridge would be. Therefore, because the existing conditions of the Project vicinity support wildlife movement, the bicycle/pedestrian bridge is not expected to substantially increase predator migration across Bayfront Expressway. Increased predation on special-status species in the Refuge from construction of the bicycle/pedestrian bridge would be a ***less-than-significant*** impact.

The new buildings, trees, and the bicycle/pedestrian bridge could provide perch sites from which raptors and other avian predators could prey on special-status species (e.g., western snowy plover, California Ridgway's rail, salt-marsh harvest mouse) in the Refuge. The existing buildings at the Project site are one or two stories in height, whereas the new buildings would be approximately 75 feet in height and would have trees planted on the roofs. Taller buildings with vegetation would provide an improved vantage point for avian predators near the Refuge. Additionally, the bicycle/pedestrian bridge would span Bayfront Expressway at a height of approximately 35 feet, providing a new elevated structure, with an aerial walkway that could cantilever beyond the Caltrans easement. The San Francisco Bay Bird Observatory monitors western snowy plovers in the Refuge annually and has consistently documented the presence of common raven (*Corvus corax*), American crows (*Corvus brachyrhynchos*),

northern harrier (*Circus cyaneus*), red-tailed hawk (*Buteo jamaicensis*), and California gull (*Larus californicus*), the latter of which presents the greatest risk to nesting snowy plovers. These species could occupy the Project site, particularly the common raven, American crow, and California gull, which are attracted to urbanized areas that contain trash. Increased predation of special-status species due to avian predators perching on new structures and vegetation at the Project site would be a ***potentially significant*** impact.

MITIGATION MEASURE. Implementation of Mitigation Measure BIO-2.1 would reduce potential impacts from predation on special-status species to a ***less-than-significant*** level.

BIO-2.1: Install Bird Perching Deterrents on All New Buildings and Other Elevated Structures, Including the Bicycle/Pedestrian Bridge. The Project Sponsor shall implement the following measures to protect special-status species from increased predation on the Project site:

- For all new buildings constructed on the Project site, as well as the bicycle/pedestrian bridge and northern bridge approaches, the Project Sponsor shall install bird deterrents along suitable perching sites to deter avian predators of special-status species that inhabit the adjacent salt marshes. Such deterrents may include one or more of the following: bird spikes, bird netting, an electric shock track, sound deterrents, or perching deterrents approved by CDFW and/or USFWS.
- Trees that are used for replacement landscaping, especially those planted on rooftops, shall consist of species that generally do not exceed 30 feet in height to limit the visibility of adjacent salt marshes to the north. These trees may include native or non-invasive nonnative ornamental species. Species with broad canopies are preferred because tress with tall, narrow canopies (e.g., palms or conifers) generally provide better hunting perches for raptors. Additionally, trees that are planted on the rooftops of the new buildings shall be located away from the edge of the roof and planted with a reduced line of sight to the Bay.

Impact BIO-3: Impacts on Native Wildlife Nursery Sites. The removal of buildings, trees, shrubs, or woody vegetation and the installation of new buildings and lighting could affect native migratory birds. (LTS/M)

Existing shrubs and trees on the Project site provide nesting habitat for a variety of native birds; however, this habitat is of low quality because of the developed nature of the site and surrounding area. Seven of the existing buildings on the Project site would be demolished, and existing landscaping would be removed; the Project site would then be developed with new buildings and landscaping. As discussed under Impact BIO-1, all 770 trees on the Project site would be removed; approximately 1,600 trees would be planted as part of Project landscaping. As such, increased avian nesting habitat would be provided on the Project site following Project implementation.

If the Project is implemented during the nesting season (February 1 to September 14), tree and shrub removal could result in the direct mortality of adult or young birds, the destruction of active nests, and/or disturbance of nesting adults, causing nest abandonment and/or loss of reproductive effort. Native bird species are protected by both state (California Fish and Game Code Sections 3503 and 3513) and federal (MBTA of 1918) laws. Any disturbance of nesting birds that results in the abandonment of active nests or litters or the loss of active nests through vegetation or structure removal would be a ***potentially significant*** impact.

Although the foundation and vertical supports of the proposed bicycle/pedestrian bridge touchdown would be located within the Caltrans easement, a portion of the aerial walkway could cantilever beyond the Caltrans easement. In addition, new lighting associated with the Project (e.g., on the bicycle/pedestrian bridge, new buildings) could misdirect or confuse birds or other special-status wildlife species while using adjacent areas, resulting in a disruption of natural behavioral patterns and possible injury or death from exhaustion or colliding with buildings. The potential for these types of impacts could be heightened because of the Project site's proximity to the Refuge. Impacts on birds and other special-status wildlife species from Project buildings and increased lighting levels would be ***potentially significant***.

MITIGATION MEASURE. Implementation of Mitigation Measures BIO-2.1 (above), BIO-3.1, and BIO-3.2 would reduce potential nesting migratory bird impacts from the Project to a ***less-than-significant*** level.

BIO-3.1: Conduct Pre-construction Surveys for Nesting Migratory Birds. The Project Sponsor shall implement the following measures to reduce impacts on nesting migratory birds:

- To facilitate compliance with state and federal law (California Fish and Game Code and the MBTA) and prevent impacts on nesting birds, the Project Sponsor shall avoid construction during the nesting season (February 1 through September 14) or conduct pre-construction surveys, as described below.
- If it is not feasible to avoid the nesting season, the Project Sponsor shall hire a qualified wildlife biologist with demonstrated experience to conduct a survey for nesting birds, including raptors, no earlier than 3 days prior to the commencement of ground-disturbing activities and vegetation removal (including clearing, grubbing, and staging). The area surveyed shall include all construction areas within the Project site as well as areas within 250 feet outside the boundaries of the areas to be cleared or as otherwise determined by the biologist.
- If construction activities related to the multi-use bicycle/pedestrian bridge and occurring on the northern side of Bayfront Expressway are initiated during the nesting bird season, within 3 days prior to the start of construction, a survey shall be conducted by a qualified biologist to determine whether western snowy plovers are nesting within 600 feet of the proposed construction area. Surveys shall be conducted on 2-week intervals, between February 1 and through May 30, or longer, if necessary, as determined by the biologist, based on the behavior and habitat. If an active nest is identified, a buffer of 600 feet shall be established between the construction area and the nest, and the nest shall be periodically monitored by a qualified biologist to determine when it is no longer active (at which point the buffer will no longer be needed). If there is a visual barrier, such as a levee or dense vegetation, between the construction area and the nest such that the plover will not be able to see construction activity from the nest, then the Project Sponsor may coordinate with USFWS to determine whether a reduced buffer would be adequate to allow work to occur without disturbing nesting plovers.
- A nest survey shall be required prior to implementation of Phase 1 and Phase 2 of the Project and when construction work stops at a portion of the site where suitable nesting habitat remains for more than 15 days. Additionally, at least one nest survey shall be conducted at the beginning of each year of Project implementation between February and May. As discussed in Chapter 2, *Project Description*, Project

implementation will occur between 2016 and 2022. The need for additional surveys shall be determined by the qualified wildlife biologist and based on the results of the initial survey.

- If the biologist finds active nests during the survey, he or she shall establish species-specific no-disturbance buffer zones for each nest with use of high-visibility fencing, flagging, or pin flags. No construction activities shall be allowed within the buffer zones. The size of the buffer shall be based on the species sensitivity to disturbance and planned work activities in the vicinity. The buffer shall remain in effect until the nest is no longer active.
- If structure demolition activities cannot occur outside of the nesting season, the Project Sponsor or its contractor shall remove inactive nests from the structure to be demolished and install nest exclusion measures (i.e., fine mesh netting, panels, or metal projectors) outside of the nesting season. All exclusionary devices shall be monitored and maintained throughout the breeding season to ensure that they are successful in preventing the birds from accessing cavities or nest sites. No more than 3 days prior to building demolition activities, a qualified biologist shall conduct a pre-construction survey of all potential nesting habitat on the structure to be demolished and the surrounding areas for the presence of active nests. If active nests are found on the building or in the affected area, then demolition activities shall not proceed until the biologist verifies that all nests on the building are inactive.
- After all surveys and/or nest deterrence activities are completed, the biologist shall complete a memorandum detailing the survey effort and results and submit the memorandum to the City within 7 days of survey completion.

BIO-3.2: *Implement Bird-Safe Design Standards into Project Buildings and Lighting Design*. The Project Sponsor or its contractor shall implement the following measures to minimize hazards to birds:

- Reduce large areas of transparent or reflective glass.
- Locate water features, trees, and bird habitat away from building exteriors to reduce reflection.
- Reduce or eliminate the visibility of landscaped areas behind glass.
- Turn non-emergency lighting off at night, especially during bird migration season (February–May and August–November).
- Include window coverings that adequately block light transmission from rooms where interior lighting is used at night and install motion sensors or controls to extinguish lights in unoccupied spaces.
- Design and/or install lighting fixtures that minimize light pollution, including light trespass, over-illumination, glare, light clutter, and skyglow, while using bird-friendly colors for lighting when possible. San Francisco's *Standards for Bird-safe Buildings* document[17] provides a good overview of building design and lighting guidelines to minimize bird/building collisions.

[17] City and County of San Francisco. 2011. *Standards for Bird-Safe Buildings*. San Francisco Planning Department. July 14. Available: <http://www.sf-planning.org/ftp/files/publications_reports/bird_safe_bldgs/Standards%20for%20Bird%20Safe%20Buildings%20-%2011-30-11.pdf>.

Impact BIO-4: Conflicts with Any Local Policies or Ordinances that Protect Biological Resources. The Project would not result in conflicts with Chapter 13.24 of the Municipal Code (Heritage Tree Ordinance). (LTS)

There are currently 770 trees on the Project site, including 274 trees that qualify as heritage trees under the City's Heritage Tree Ordinance.[18,19] The 770 trees consist almost entirely of nonnative ornamental species, such as blackwood acacia (*Acacia melanoxylon*), Japanese maple (*Acer palmatum*), deodar cedar (*Cedrus deodara*), silver dollar gum (*Eucalyptus polyanthemos*), honey locust (*Gleditsia triacanthos inermis*), Lombardy poplar (*Populus nigra* "Italica"), plum (*Prunus cerasifera*), and holly oak (*Quercus ilex*). Two native (but planted and thus also ornamental) tree species on the Project site include coast live oak (*Quercus agrifolia*) and white alder (*Alnus rhombifolia*). Under the City's Heritage Tree Ordinance, heritage oak trees are regulated differently from other species of heritage trees (refer to the *Local* regulatory section, above).

This analysis assumes that all of the heritage trees would be removed during clearing of the Project site for redevelopment. Removal of heritage trees without first obtaining an appropriate permit from the Director of Public Works or his/her designee and payment of a fee is prohibited. As a part of obtaining a tree removal permit, the Project Sponsor must be in compliance with the Heritage Tree Ordinance, as described in more detail below. Because compliance with the tree ordinance is mandatory, this impact would be considered ***less than significant***.

The Project would be required to adhere to Chapter 13.24 of the City's Municipal Code, as follows.

- For those heritage trees to be removed, the Project Sponsor shall submit a site plan with the Heritage Tree Removal Application, even if it has submitted a site plan to the City for a planning or building permit. The site plan facilitates the review by the City Arborist. For removal of two or more trees, the Project Sponsor shall be required to submit a planting plan, indicating the species, size, and location of the proposed replacement trees on a site plan. Heritage Tree Permits related to construction shall also be charged for City-retained arborist expenses.
- The City determines the heritage tree replacement ratio. In general, all commercial applicants who are granted approval to remove a heritage tree are required to replace the lost trees at a ratio of 2:1. However, the City may exercise discretion regarding the size and number of trees an applicant may be required to plant. Replacement trees must be planted within 30 days after the heritage tree is removed, must be planted at least 10 feet away from any structures, must not be planted under overhead utility wires, and must not be planted over underground utilities.[20] The proposed approach for this Project is for heritage trees that are in good health (as determined by a certified arborist) to be replaced at a ratio of 2:1 and heritage trees with fair or poor health, or dead heritage trees, to be replaced at a ratio of 1:1. The Project Sponsor is proposing to plant a minimum of 423 trees to replace the 274 heritage trees that would be removed following Project implementation, which meets the proposed heritage tree replacement ratio for the Project.[21,22]

[18] SCBA Tree Consulting. 2015. *Tree Survey at 301–309 Constitution Drive.* December 21, 2015.
[19] City of Menlo Park. 2010. *Menlo Park Municipal Code*. Section 16.46.030(7). December 14, 2010.
[20] City of Menlo Park, Community Development. n.d. *Heritage Tree Replacement Procedures*." Available: <http://www.menlopark.org/departments/pln/htree/Htree_Replacement_Pro.pdf>. Accessed: September 9, 2013.
[21] Gehry Partners, LLP. 2015. *Proposed Future Tree Information Site Plan*. October 9, 2015.
[22] Gehry Partners, LLP. 2015. *Tree Disposition Plan*. October 2015.

Cumulative Impacts

Unless otherwise identified below, the geographic context for the analysis of cumulative biological impacts includes the nine counties within the Bay Area. The analysis accounts for all anticipated cumulative growth within this geographic area, as represented by full implementation of the general plans of the nine Bay Area cities and counties, including the projects shown in Table 3.0-1 of Chapter 3, *Environmental Impact Analysis*.

Impact C-BIO-1: Cumulative Impacts on Roosting Bats. Removal of buildings, trees, shrubs, or other woody vegetation associated with construction of the Project and other development would result in impacts on roosting bats. (LTS)

As described under Impact BIO-1, activities that result in the removal of existing buildings, trees, shrubs, or other woody vegetation could adversely affect roosting bats, either by causing a loss of bats or the abandonment of an active roosting area. The Project site's existing habitat quality is poor because of its urban, developed nature, reducing its suitability for roosting bats. Although the likelihood of occurrence is low, the bats could occupy the foliage of existing trees on the Project site. With future development in the Bay Area, it is reasonable to expect that there would be a loss of buildings, trees, and other woody vegetation that provide possible roosting habitat. Specifically, roosting bats could be present in Buildings 307–309 (6), which are currently vacant and slated for demolition as part of a separate project, and in Building 23 (5), which is being renovated as a separate project. In addition, roosting bats could be located in trees along Chilco Street. It is currently anticipated that approximately 116 trees would be removed with implementation of the Chilco Street Improvements Project (14). Disturbance to these habitats, in combination with the potential loss of similar habitat in the Bay Area, could result in a potentially significant cumulative impact.

As discussed under Impact BIO-1, all of the 700 trees at the Project site would be removed as part of the Project. Implementation of other development projects in the area would also result in the removal of trees. The removal of trees that contain active bat roosts, particularly during the nesting season (typically April through August), could result in the loss of individual bats, bat colonies, or their habitat. Mitigation Measure BIO-1.1 would reduce the Project's contribution to this potentially significant cumulative impact to less than cumulatively considerable because breeding roosting bats on the Project site would be identified and protected. In addition, approximately 1,600 trees would be planted as part of landscaping at the Project site, fully replacing previously available roosts on the Project site after Project implementation and offsetting the impacts of potential tree removal in surrounding areas over time. The Project's cumulative impact would be ***less than significant.***

Impact C-BIO-2: Cumulative Indirect Impact on Special-Status Species. The Project and other development could result in increased predation of special-status birds and mammal species that inhabit nearby saltwater and brackish water marshes in the Don Edwards National Wildlife Refuge. (LTS)

Development activities in the Bay Area that result in taller structures and a net increase in trees could provide new or additional perch or nest sites for raptors and other avian predators of special-status species. Cumulative development near salt-marsh habitat in the Bay could result in potentially significant impacts on California Ridgway rail, western snowy plover, salt-marsh harvest mouse, or other special-status bird or mammal species as a result of increased predation by raptors or other predatory birds.

The Project site is located adjacent to the Refuge and provides a direct line of sight to tidal salt-marsh habitat. New buildings, the bicycle/pedestrian bridge, and trees would provide vantage points from which predatory birds could prey on special-status species in the Refuge. However, the Project site is already developed and located within a dense urban setting. It also constitutes a small proportion of the total available habitat in the Bay Area. Implementation of Mitigation Measure BIO-2.1 would reduce the Project's contribution to a potentially significant cumulative impact to less than cumulatively considerable because it would require the installation of bird-perching deterrents on all new buildings and other elevated structures on the Project site. Therefore, the Project's cumulative impact would be ***less than significant***.

Impact C-BIO-3: Cumulative Impact on Native Wildlife Nursery Sites. The removal of buildings, trees, shrubs, or other woody vegetation and the installation of new buildings and lighting could affect native migratory birds. (LTS)

Activities that result in the removal of existing buildings, trees, shrubs, or other woody vegetation, as well as noise and movement from construction near the Refuge, could adversely affect nesting birds, either by causing the loss of young birds or the abandonment of an active nest. The existing developed condition of the Project site provides low-quality habitat for nesting birds, but the Refuge is known to support nesting western snowy plovers. However, with future development in the Bay Area, it is reasonable to expect there would be a loss of buildings, trees, and other woody vegetation that provide nesting habitat and an increase in human use adjacent to the Bay as the Bay Area become more populated. In particular, the Chilco Street Improvements Project (14), which is directly adjacent to the Project site, would result in the removal of up to 116 trees, 79 of which are heritage in size.

Disturbance to these habitats, in combination with the potential loss of similar habitat on the Project site, would result in a potentially significant cumulative impact. Native bird species are protected by both state (California Fish and Game Code Sections 3503 and 3513) and federal (MBTA of 1918) laws, and it is assumed that all development would comply with these regulations, reducing the cumulative impact to less than significant. As discussed under Impact BIO-1, all of the 770 trees at the Project site would be removed and approximately 1,600 trees would be planted as landscaping as part of the Project, resulting in increased nesting habitat on the Project site following Project implementation and reducing cumulative impacts associated with habitat loss for nesting birds in the surrounding area. In addition, Mitigation Measure BIO-3.1 requires the identification and protection of nesting birds, reducing the potential impact to less than significant. Mitigation Measure BIO-3.2 requires implementation of bird-safe design standards in Project buildings and lighting designs. Therefore, the cumulative impact would be ***less than significant***.

Impact C-BIO-4: Cumulative Conflicts with Any Local Policies or Ordinances that Protect Biological Resources. The Project, in combination with other reasonably foreseeable projects, would not conflict with local policies or ordinances that protect biological resources. (LTS)

The cumulative context for an analysis of cumulative impacts regarding conflicts with local policies or ordinances that protect biological resources is the City because individual jurisdictions have differing criteria for evaluating the loss of protected resources. As described under Impact BIO-4, activities that result in the removal of heritage trees could result in conflicts with the City's Heritage Tree Ordinance.[23] With future development in the City, it is reasonable to expect there would be an additional loss of heritage trees. In particular, the Chilco Street Improvements Project (14) would result in the removal of approximately 84 heritage trees. However, compliance with the measures in Chapter 13.24 of the City's

[23] City of Menlo Park. 2010. *Menlo Park Municipal Code*. Section 16.46.030(7). December 14, 2010.

Municipal Code would be required by all future development in the City. On the Project site, compliance with Chapter 13.24 would minimize the loss of heritage trees by requiring a certain replacement ratio and tree species that are best suited to survive and thrive. Therefore, in combination with other potential projects, the cumulative impact would be ***less than significant***.

3.9 Geology and Soils

This section describes the geologic and seismic setting of the Project site, including regional and local geology, soils, and groundwater, and the regulatory framework relevant to the Facebook Campus Expansion Project (Project). The potential environmental effects of the Project related to geology and soils are also described. The impacts examined include risks related to geologic hazards, such as earthquakes, landslides, liquefaction, and expansive soils, and impacts on the environment related to soil erosion and sedimentation. This section identifies Project-level and cumulative environmental impacts and explains how compliance with the applicable regulations would reduce or avoid the identified impacts. Two geotechnical feasibility investigations were prepared for the Project site. The information and conclusions from these documents are incorporated into this section. Additional information was obtained from government agency websites and publications.

Issues identified in response to the Notice of Preparation (NOP) (Appendix 1) were considered in preparing this analysis. Applicable issues that were identified pertain to cumulative impacts in the context of other bayland projects.

Existing Conditions

Regulatory Setting

Federal

Earthquake Hazard Reduction Act of 1977

Federal laws codified in the United States Code Title 42, Chapter 86, were enacted to reduce the risks to life and property from earthquakes in the United States through the establishment and maintenance of an effective earthquake hazards reduction program. Implementation of these requirements are regulated, monitored, and enforced at the state and local level. Key regulations and standards are summarized below.

State

California Building Standards Code

California Code of Regulations (CCR) Title 24, Part 2, the California Building Standards Code, provides minimum standards for building design in the state. The current 2013 California Building Standards Code, effective January 1, 2014, is based on the 2012 International Building Code (IBC).

Each jurisdiction in California may adopt its own building code, based on the 2013 California Building Standards Code. Local codes are permitted to be more stringent than the 2013 California Building Standards Code but, at a minimum, are required to meet all state standards and enforce the regulations of the 2013 California Building Standards Code, beginning January 1, 2014. The City of Menlo Park (City) has adopted the 2013 California Building Standards Code and local amendments.

Chapter 16 of the California Building Standards Code deals with structural design requirements governing seismically resistant construction (Section 1604), including, but not limited to, factors and coefficients used to establish seismic site class and seismic occupancy category for the soil/rock at the

building location and the proposed building design (Sections 1613.5 through 1613.7). Chapter 18 includes, but is not limited to, the requirements for foundation and soil investigations (Section 1803); excavation, grading, and fill (Section 1804); allowable load-bearing values of soils (Section 1806); the design of footings, foundations, and slope clearances (Sections 1808 and 1809), retaining walls (Section 1807), and pier, pile, driven, and cast-in-place foundation support systems (Section 1810). Chapter 33 includes, but is not limited to, requirements for safeguards at work sites to ensure stable excavations and cut or fill slopes (Section 3304). Appendix J of the California Building Standards Code includes, but is not limited to, grading requirements for the design of excavations and fills (Sections J106 and J107) and for erosion control (Sections J109 and J110). Construction activities are subject to occupational safety standards for excavation, shoring, and trenching, as specified in California Occupational Safety and Health Administration (Cal/OSHA) regulations (CCR, Title 8).

Alquist-Priolo Earthquake Fault Zoning Act

California's Alquist-Priolo Earthquake Fault Zoning Act (Alquist-Priolo Act) (Public Resources Code [PRC] Section 2621 et seq.), originally enacted in 1972 as the Alquist-Priolo Special Studies Zones Act and renamed in 1994, is intended to reduce the risk to life and property from surface fault rupture during earthquakes. The Alquist-Priolo Act prohibits the location of most types of structures intended for human occupancy[1] across the traces of active faults and strictly regulates construction in the corridors along active faults (earthquake fault zones). It also defines criteria for identifying active faults, giving legal weight to terms such as *active*, and establishes a process for reviewing building proposals in and adjacent to earthquake fault zones.

Under the Alquist-Priolo Act, faults are zoned, and construction along or across them is strictly regulated if they are "sufficiently active" and "well defined." A fault is considered *sufficiently active* if one or more of its segments or strands shows evidence of surface displacement during Holocene time (defined for purposes of the act as approximately the last 11,000 years). A fault is considered *well defined* if its trace can be clearly identified by a trained geologist at the ground surface or in the shallow subsurface using standard professional techniques, criteria, and judgment.[2]

Seismic Hazards Mapping Act

Similar to the Alquist-Priolo Act, the Seismic Hazards Mapping Act of 1990 (PRC Sections 2690–2699.6) is intended to reduce damage resulting from earthquakes. Although the Alquist-Priolo Act addresses surface fault rupture, the Seismic Hazards Mapping Act addresses other earthquake-related hazards, including strong ground shaking, liquefaction, and seismically induced landslides. Its provisions are similar in concept to those of the Alquist-Priolo Act. The state is charged with identifying and mapping areas at risk of strong ground shaking, liquefaction, landslides, and other corollary hazards, and cities and counties are required to regulate development within mapped seismic hazard zones.

A primary purpose of the Seismic Hazards Mapping Act is to assist cities and counties in preparing the safety elements of their general plans and encourage land use management policies and regulations that reduce seismic hazards. The intent of this act is to protect the public from the effects of strong ground

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[1] With reference to the Alquist-Priolo Act, a *structure for human occupancy* is defined as one "used or intended for supporting or sheltering any use or occupancy, which is expected to have a human occupancy rate of more than 2,000 person-hours per year" (California Code of Regulations, Title 14, Division 2, Section 3601[e]).

[2] Hart, W. A., and E. W. Hart. 2007. *Fault-Rupture Hazard Zones in California*. California Geological Survey Special Publication 42, Interim Revision, 2007. Available: <ftp://ftp.consrv.ca.gov/pub/dmg/pubs/sp/Sp42.pdf>. Accessed: September 2015.

shaking, liquefaction, landslides, ground failure, or other hazards caused by earthquakes. Under the Seismic Hazards Mapping Act, permit review is the primary mechanism for local regulation of development. Specifically, cities and counties are prohibited from issuing development permits for sites within seismic hazard zones until appropriate site-specific geologic and/or geotechnical investigations have been carried out and measures to reduce potential damage have been incorporated into the development plans. In addition, California Geologic Survey (CGS) Special Publication 117A, Guidelines for Evaluating and Mitigating Seismic Hazards in California, provides guidance for the evaluation of earthquake-related hazards for projects in designated zones of required investigations and for recommending mitigation measures, as required by PRC Section 2695(a).[3] Liquefaction hazards mapping has been prepared for the west side of San Francisco Bay (Bay), including the Menlo Park area. As discussed under *Liquefaction,* below, the Project site is within a mapped liquefaction hazard zone.

National Pollutant Discharge Elimination Program Construction General Permit

Under the authority of the federal Clean Water Action Section 402 (National Pollutant Discharge Elimination Program [NPDES]), the State Water Resources Control Board (SWRCB) permits all regulated construction activities under Order No. 2009-0009-DWQ (adopted September 2, 2009), which requires, prior to beginning any construction activities, the permit applicant to obtain coverage under the Construction General Permit by preparing and submitting a Notice of Intent (NOI) to the SWRCB and preparing and implementing a Stormwater Pollution Prevention Plan (SWPPP), in accordance with the Construction General Permit requirements, for all construction activities that disturb one or more acres of land surface. Construction activities that are subject to the Construction General Permit include clearing, grading, and disturbances to the ground, such as stockpiling or excavation, that result in soil disturbances of at least 1 acre of the total land area. The SWPPP has two major objectives: (1) to help identify the sources of sediment and other pollutants that affect the quality of stormwater discharges and (2) to describe and ensure the implementation of best management practices (BMPs) to reduce or eliminate sediment and other pollutants in stormwater as well as non-stormwater discharges (refer to Section 3.10, *Hydrology and Water Quality*, for additional information on the Construction General Permit and the SWPPP).

Local

City of Menlo Park General Plan

The following policy from the Land Use Element of the City of Menlo Park General Plan (General Plan) pertains to the Project.

> *Policy I-H-9:* Urban development in areas with geological and earthquake hazards, flood hazards, and fire hazards shall be regulated in an attempt to prevent loss of life, injury, and property damage.

The following policies of the Safety Element of the General Plan are relevant to the Project.

> *Policy S1.1: Location of Future Development.* Permit development only in those areas where potential danger to the health, safety, and welfare of the residents of the community can be adequately mitigated.

[3] California Geological Survey. 2008. Guidelines for Evaluating and Mitigating Seismic Hazards in California. (Special Publication 17A.) Available: <http://www.conservation.ca.gov/cgs/shzp/webdocs/documents/sp117.pdf>. Accessed: September 2015.

Policy S1.5: New Habitable Structures. Require that all new habitable structures incorporate adequate hazard mitigation measures to reduce identified risks from natural and human-caused hazards.

Policy S1.7: Hazard Reduction. Continue to require new development to reduce the seismic vulnerability of buildings and susceptibility to other hazards through enforcement of the California Building Standards Code and other programs.

Policy S1.10: Safety Review of Development Projects. Continue to require hazard mitigation, crime prevention, fire prevention, and adequate access for emergency vehicles in new development.

Policy S1.13: Geotechnical Studies. Continue to require site-specific geologic and geotechnical studies for land development or construction in areas of potential problem land instability, as shown on the state and/or local geologic hazard maps or identified through other means.

Policy 1.14: Potential Land Instability. Prohibit development in areas of potential land instability identified on state and/or local geologic hazard maps, or identified through other means, unless a geologic investigation demonstrates hazards can be mitigated to an acceptable level, as defined by the State of California.

ConnectMenlo General Plan Update. The City General Plan (Land Use and Circulation Elements) and M-2 Area Zoning Update, also known as ConnectMenlo, is under way. Although not yet adopted, the following draft policy in ConnectMenlo pertains to the Project and is identified for informational purposes.

Policy LU-7.7: Hazards. Avoid development in areas with seismic, flood, fire, and other hazards to life or property when potential impacts cannot be mitigated.

Earthquake Emergency Response

The City is a participant in the Association of Bay Area Governments (ABAG) multi-jurisdictional planning process for natural disaster emergencies. The City has adopted an Emergency Operation Plan that assesses the potential losses associated with earthquakes (among other disasters) and identifies responsibilities for City departments and coordination with San Mateo County and regional emergency response providers.[4] The City has also prepared a Disaster Preparedness Manual that is available to the public. The manual describes actions that residents and businesses can take in the event of an earthquake.

Municipal Code

The following chapters of the City's Municipal Code pertain to the Project:

Building Code. Chapter 12.06 of the City's Municipal Code implements the 2013 California Building Standards Code and local amendments thereto.

Grading and Drainage Control Guidelines. The City Engineering Division requires a grading and drainage (G&D) plan whenever more than 500 gross square feet (gsf) of the surface of a lot is to be affected by a building project. The basis for the G&D plan requirement is City development policy, Stormwater Ordinance 859 (Chapter 7.42), and the SWRCB Municipal Regional Stormwater Permit issued on October 14, 2009 (Order R2-2009-0074, NPDES Permit No. CAS 612008). The focus of these guidelines is to control eroded sediment from construction sites before it enters waterways.

[4] City of Menlo Park. 2011. *Emergency Operation Plan*. Version 2. January.

The City also requires the G&D plan to include "construction erosion and sedimentation control" notes and plans, which must address the timing of grading activities during dry months, if feasible, and minimization of land disturbance, among other items.

Environmental Setting

Regional Setting

Geology

The Project site is situated along the San Francisco Peninsula, which separates the Bay from the Pacific Ocean. The San Francisco Peninsula is a ridge of rocks and sediments in the Santa Cruz Mountains portion of the Coast Ranges geomorphic province, which forms a rugged barrier between the Pacific Coast and inland California.[5] (Geomorphic provinces are naturally defined geologic regions that display a distinct landscape or landform.)

The Coast Ranges province, which extends approximately 600 miles, from the Santa Ynez River in Santa Barbara County to the Oregon border, owes much of its physiographic character to the San Andreas fault system (in the San Francisco Bay Area [Bay Area]). This fault system is a 44-mile-wide zone of fracturing and folding rock where two adjoining tectonic plates that form Earth's surface (the Pacific plate on the west and the North American plate on the east) are moving past each other in opposite directions. One result of this tectonic plate movement is the regional rock deformation and the general northwest trend of valleys and ridges throughout the Coast Ranges. The sedimentary rocks that form most of the plate boundary area were deposited during successive geologic intervals as layers of marine and terrestrial sediments, between 70 million (Cretaceous Period) and 200 million years ago (Jurassic Period).

Quaternary alluvial sediment derived from the Santa Cruz Mountains overlies older Cretaceous and Jurassic sedimentary rocks. The youngest of this alluvial material consists of Holocene-age (11,000 years or younger) unconsolidated clay, which is interbedded with sand and fine gravel. This unit is generally less than 15 feet thick. It forms in poorly drained interfluvial basins, usually at the margins of tidal marshlands on the edge of San Francisco Bay where it interfingers with Bay Mud. Overlying this material that covers much of the Project site is artificial fill, which consists of a combination of poorly consolidated gravel, sand, and silt, and rock fragments. The Project site thus consists of Quaternary alluvial sediment on the southwest and southeast corners of the site and artificial fill on the remainder of the site.[6]

Faults

The Bay Area, one of the world's most seismically active regions, is near several active faults. Faults are geologic zones of weakness. Earthquakes are caused by the violent and abrupt release of strain that builds up along faults. Fault rupture almost always follows preexisting faults. Rupture may occur suddenly during an earthquake or slowly in the form of fault creep. Sudden displacements are more damaging to structures because they are accompanied by shaking. Surface rupture occurs when movement on a fault deep in the earth breaks through to the ground surface.

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[5] California Geological Survey. 2002. *California Geomorphic Provinces*. California Department of Conservation. California Geological Survey Note 36. Available: <http://www.conservation.ca.gov/cgs/information/publications/cgs_notes/note_36/Documents/note_36.pdf>. Accessed: September 2015.

[6] Cornerstone Earth Group. 2014. *Geotechnical Feasibility Investigation: Chilco Road Parcels, 300 Constitution Drive, Menlo Park, California.* Project Number 254-8-3. July 22. Prepared for Hibiscus Properties, LLC, Menlo Park, CA. Walnut Creek, CA.

Figure 3.9-1 shows the locations of regional faults in proximity to the Project site.[7] The closest active and potentially active faults are the Monte Vista–Shannon fault (5 miles southwest), the San Andreas fault (7 miles southwest), and the Hayward fault (12 miles northeast). Other nearby active Bay Area faults include the San Gregorio fault, about 15 miles southwest of the Project site, and the Calaveras fault, about 17 miles northeast of the Project site. Potentially active, concealed faults of the Quaternary are the Palo Alto and Stanford faults, a few miles southwest of the Project site. The trace of the San José fault is northeast of the site, extending from west San José through Sunnyvale and East Palo Alto to its apparent terminus just northeast of the Project site.[8] These faults do not show evidence of recent surface displacements (i.e., during the last 10,000 years) that would cause the state to categorize them as active.

Seismicity

Earthquake Magnitude

The classification of earthquakes is based on the amount of energy released, using scales known as the Richter scale and the Moment Magnitude (MM) scale. Each whole number of magnitude of the logarithmic scale represents a tenfold increase in the wave amplitude (earthquake size) generated by an earthquake as well as a 3.16-fold increase in energy released. Thus, a magnitude 6.3 earthquake is 10 times larger than a magnitude 5.3 earthquake and releases 31.6 times more energy. In contrast, a magnitude 7.3 event is 100 times larger than magnitude 5.3 and releases 1,000 times more energy.

Table 3.9-1 shows the nearby active faults; their maximum credible earthquake, expressed in MM; and their distance from the Project site.

The U.S. Geological Survey's 2014 Working Group on California Earthquake Probabilities estimated that there is a 72 percent probability that one or more MM 6.7 or greater earthquakes will occur in the Bay Area in the next 30 years.[9]

Earthquake Intensity

The Modified Mercalli Intensity scale is used to describe the intensity of an earthquake. The scale relates an earthquake to its effects on humans, nature, and human-made structures on a scale of I through XII, with I denoting a weak earthquake and XII an earthquake that causes almost complete destruction. Table 3.9-2 provides abbreviated definitions of the scale ratings. This scale is not employed by engineers when designing seismic-resistant structures. The safety standards to which structures must be designed are set forth in the California Building Standards Code and take into account numerous factors and criteria. However, this scale is useful in describing earthquake effects for the general public and can serve to interpret earthquake magnitude qualitatively.

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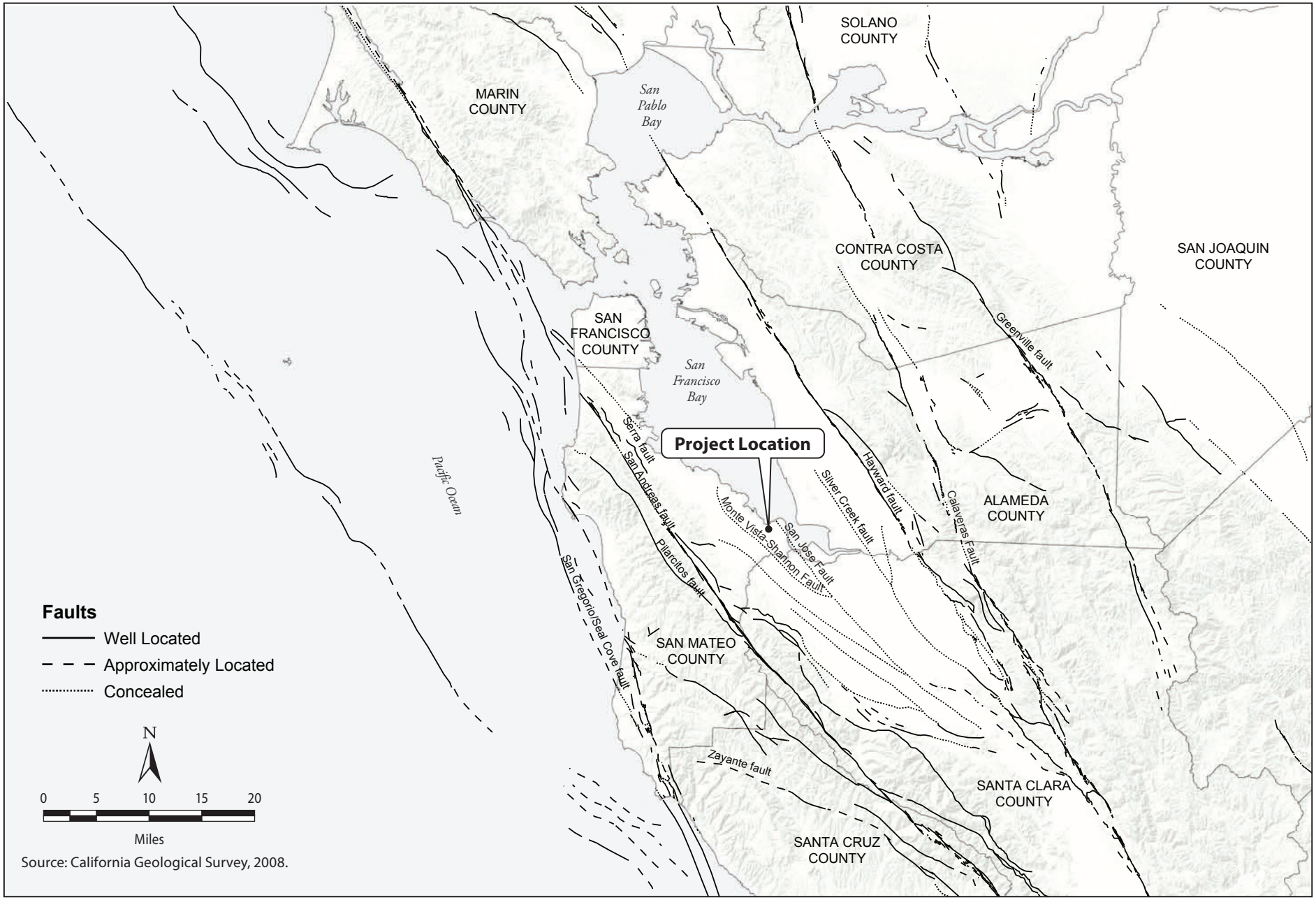
[7] Well-located faults are those faults whose location is well known. Approximately located faults are those faults whose location is not precisely known but may be inferred. Concealed faults are those faults whose location is concealed by younger rocks or bodies of water.

[8] Jennings, C.W., and W.A. Bryant. 2010. *2010 Fault Activity Map of California*. California Department of Conservation. Available: <http://www.quake.ca.gov/gmaps/FAM/faultactivitymap.html>. Accessed: September 2015.

[9] U.S. Geological Survey. 2014. *UCERF3: A New Earthquake Forecast for California's Complex Fault System.* Available: <http://www.wgcep.org/sites/wgcep.org/files/fs2015-3009.pdf>. Accessed: October 7, 2015.



Source: California Geological Survey, 2008.

Graphics ... 00296.15 (11-9-2015)

Figure 3.9-1
Regional Faults
Facebook Campus Expansion Project Draft EIR

Table 3.9-1. Maximum Credible Earthquake (MCE) for Principal Active Faults in Project Vicinity

Fault	MCE Magnitude[a]	Distance from Project Site (miles)
Monte Vista–Shannon	6.2[b]	5[e]
San Andreas (1906)	7.0–7.9[b]	7[e]
Hayward (Total Length)	7.2[b,c]	12[e]
San Gregorio	7.5–7.7[b,d]	15
Calaveras	6.8–7.5[b,c]	17

Note:

a. MCE magnitude is the maximum credible earthquake measured using the Moment Magnitude scale.

Sources:

b. Mualchin, L. 1996. *A Technical Report to Accompany the Caltrans California Seismic Hazard Map, 1996 (Based on Maximum Credible Earthquakes).* Available: <http://www.dot.ca.gov/hq/esc/earthquake_engineering/seismology/MapReport.PDF>. Accessed: September 21, 2015.

c. Anderson, L. W., M. H. Anders, and D. A. Ostenaa. 1982. Late Quaternary Faulting and Seismic Hazard Potential, Eastern Diablo Range, California. Pages 197–206 in E. W. Hart, S. E. Hirschfeld, and S. S. Schulz (eds.), *Proceedings, Conference on Earthquake Hazards in the Eastern San Francisco Bay Area*. Special Publication 62. Sacramento, CA: California Division of Mines and Geology.

d. Weber, G.E., and W.R. Cotton. 1981. *Geologic Investigation of Recurrence Intervals and Recency of Faulting along the San Gregorio Fault Zone, San Mateo County, California.* U.S. Geological Survey Open File Report 81-263. Prepared for U.S. Geological Survey. Available: <http://pubs.usgs.gov/of/1981/0263/report.pdf>. Accessed: September 21, 2015.

e. Cornerstone Earth Group. 2014. *Geotechnical Feasibility Investigation: Chilco Road Parcels, 300 Constitution Drive, Menlo Park, California*. July 22. Project Number 254-8-3.

Table 3.9-2. Modified Mercalli Intensity Scale

Scale Rating	Description
I	Not felt.
II	Felt by persons at rest, on upper floors, or favorably placed.
III	Felt indoors; hanging objects swing; vibration like passing of light trucks; duration estimated; may not be recognized as an earthquake.
IV	Hanging objects swing; vibration like passing of heavy truck or sensation of a jolt like a heavy ball striking the walls; standing automobiles rock; windows, dishes, doors rattle; wooden walls and frame may creak.
V	Felt outdoors; direction estimated; sleepers wakened; liquids disturbed, some spilled; small unstable objects displaced or upset; doors swing; shutters, pictures move; pendulum clocks stop, start, change rate.
VI	Felt by all; many frightened and run outdoors; persons walk unsteadily; windows, dishes, glassware broken; knickknacks, books, etc., off shelves; pictures off walls; furniture moved or overturned; weak plaster; Masonry D cracked.
VII	Difficult to stand; noticed by drivers of automobiles; hanging objects quiver; furniture broken; weak chimneys broken at roof line; damage to Masonry D, including cracks, falling plaster, loose bricks, stones, tiles, and parapets; small slides and caving in along sand or gravel banks; large bells ring.
VIII	Steering of automobiles affected; damage to Masonry C (partial collapse); some damage to Masonry B; no damage to Masonry A; stucco and some masonry walls fall; chimneys, factory stacks, monuments, towers, elevated tanks twist or fall; frame houses move on foundations if not bolted down; loose panel walls thrown out; decayed pilings broken off; branches broken from trees; changes in flow or temperature of sprigs and wells; cracks in wet ground and on steep slopes.
IX	General panic; Masonry D destroyed; Masonry C heavily damaged, sometimes with complete collapse; Masonry B seriously damaged; general damage to foundations; frame structures, if not bolted, shifted off foundations; frames racked; serious damage to reservoirs; underground pipes broken; conspicuous cracks in ground; liquefaction.
X	Most masonry and frame structures destroyed with their foundations; some well-built wooden structures and bridges destroyed; serious damage to dams, dikes, embankments; large landslides; water thrown out of banks of canals, rivers, lakes, etc.; sand and mud shifted horizontally on beaches and flat land; rails bent slightly.
XI	Rails bent greatly; underground pipelines completely out of service.
XII	Damage nearly total; large rock masses displaced; lines of sight and level distorted; objects thrown in the air.

Source: Spangle, William E. 1987. Pre-Earthquake Planning for Post-Earthquake Rebuilding. *Journal of Environmental Sciences* 29(2):49-54.

Notes: Masonry A = Good workmanship and mortar; reinforced and designed to resist lateral force.
Masonry B = Good workmanship and mortar; reinforced.
Masonry C = Good workmanship and mortar; unreinforced.
Masonry D = Poor workmanship and mortar; weak materials, such as adobe.

Ground Shaking

The intensity of seismic shaking (ground shaking), or strong ground motion, during an earthquake depends on the distance and direction between a particular area and the epicenter of the earthquake, the magnitude of the earthquake, and the geologic conditions underlying and surrounding the area. Earthquakes occurring on faults close to the Project site would probably generate the strongest ground motions.

An earthquake along the entire San Andreas fault is considered capable of generating a MM 7.9 earthquake (similar to the 1906 San Francisco earthquake). An earthquake of this magnitude would generate strong to very strong seismic shaking (Modified Mercalli Intensity VII and VIII) at the site.[10] Ground shaking of this intensity could result in damage to buildings and trigger ground failures, such as liquefaction, potentially resulting in foundation damage, disruption of utility service, and roadway damage.

Hydrogeology

The Project site is near the boundary between major units of two alluvial deposits, as defined by the California Department of Water Resources: San Francisquito Cone and Niles Cone. The San Francisquito Cone deposits are derived from the Santa Cruz Mountains to the southwest, and the Niles Cone deposits are derived from the Diablo Range along the northeastern boundary of the Bay.[11] The unconsolidated materials in both units consist of four hydrogeologic zones: shallow aquifer, aquitard, deep aquifer, and sediments below the deep aquifer. The shallow aquifer zone ranges in depth from 5 to approximately 100 feet below ground surface. The zone consists of silt and clay, with low-permeability interbedded with high-permeability coarse-grained channel deposits.[12]

Project Site

Site Topography

The Project site is relatively flat, and elevations on the site range from 7 to 10.5 feet North American Vertical Datum (NAVD). Some portions of the site have been graded to accommodate storm drain facilities. An 1899 map shows the area as an extensive marshland bordering the San Francisco Bay. By 1948, the site had been drained; by 1968, the site had been graded and sloughs and depressions had been filled. By 1974, Constitution Drive had been built.[13]

Constitution Drive serves as a private access road throughout the site. Structures at the site are surrounded by paved parking lots, driving lanes, and landscaped areas. Landscaping and other pervious materials currently cover 15 percent, or 8.5 acres, of the Project site. Asphalt concrete pavement ranges from 2 to 5 inches in depth and is in fair to good condition (some areas show severe alligator cracking). There are no adjacent hillsides.

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[10] Association of Bay Area Governments. 2003. *Earthquake Hazard Maps*. Last modified: April 18, 2003. Available: <http://resilience.abag.ca.gov/earthquakes/sanmateo/>. Accessed: September 21, 2015.

[11] San Francisco Bay Regional Water Quality Control Board. 2003. *South Bay Basins Groundwater Protection Evaluation*. Available: <http://www.waterboards.ca.gov/sanfranciscobay/water_issues/programs/groundwater/sobayground.shtml>. Accessed: September 21, 2015.

[12] San Francisco Bay Regional Water Quality Control Board. 2003. *South Bay Basins Groundwater Protection Evaluation*. Available: <http://www.waterboards.ca.gov/sanfranciscobay/water_issues/programs/groundwater/sobayground.shtml>. Accessed: September 21, 2015.

[13] Cornerstone Earth Group. n.d. *Geotechnical Investigation: Building MPK 21, 307, 308 and 309 Constitution Drive, Menlo Park, California.* Project Number 254-8-7. Prepared for Hibiscus Properties, LLC, Menlo Park, CA. Walnut Creek, CA.

Soils

The Project site is near the historic shoreline of the Bay. According to borings done at the Project site, the soils consist of undocumented artificial fill to a depth of 2.5 to 6 feet below ground surface (bgs) and stiff to very stiff clay with variable amounts of sand to a depth of between 9.5 and 11 feet bgs. Soils mapped at the Project site by the National Resources Conservation Service (NRCS) and their characteristics are shown in Table 3.9-3.

Table 3.9-3. Soils at the Project Site

	Erosion Hazard (Off-Road, Off-Trail)	Linear Extensibility	Risk of Corrosion, Steel	Risk of Corrosion, Concrete[a]	Ponding	Flooding
117 Novato clay, 0 to 1 percent slopes	Slight	7.5 (High)	High	High	Brief (4 to 48 hours), January through December	Frequent, January through December
134 Urban Land-Orthents, reclaimed complex, 0 to 2 percent slopes	Not rated	Not rated	High	High	Not rated	None

Sources:
National Resources Conservation Service. 2015. *Web Soil Survey*. U.S. Department of Agriculture. Available: <http://websoilsurvey.sc.egov.usda.gov/App/HomePage.htm>. Accessed: September 18, 2015.
Cornerstone Earth Group. 2014. *Geotechnical Feasibility Investigation: Chilco Road Parcels, 300 Constitution Drive, Menlo Park, California.* Project Number 254-8-3. July 22. Prepared for Hibiscus Properties, LLC, Menlo Park, CA. Walnut Creek, CA.
Notes:
a. Site investigation indicated that soluble soil sulfate contents are 50 to 810 parts per million; negligible corrosion potential to buried concrete.

Below approximately 11 feet bgs, clays were underlain by loose to dense, poorly graded sands with variable amounts of clay, silt, and gravel to depths of up to 22 feet. Below the sand was medium-stiff to very stiff clay with variable amounts of sand to depths ranging from 23.5 to 29.5 feet bgs. Below the clay was medium-dense to very dense, poorly graded sand with variable amounts of silt and gravel to 35 feet bgs. This was the maximum depth explored by boring.[14] The required 50-foot test was conducted with a Cone Penetration Test (CPT) instead of a typical hollow-stem auger boring to 50 feet, as required by the 2013 California Building Standards Code. The CPT was used because of contamination from volatile organic compounds in the upper aquifer layer. A traditional hollow-stem auger boring would have risked communication between the upper aquifer layer and the lower aquifer layer, which could have contaminated the lower layer. Therefore, the CPT approach was acceptable.

[14] Cornerstone Earth Group. n.d. *Geotechnical Investigation: Building MPK 21, 307, 308, and 309 Constitution Drive, Menlo Park, California.* Project Number 254-8-7. Prepared for Hibiscus Properties, LLC, Menlo Park, CA. Walnut Creek, CA.

The CPT test was conducted to a maximum depth of 125 feet. The CPT test showed dense to very dense sand to 49 feet bgs, followed by stiff to very stiff clays and silts to 107 feet, very dense sand to 124 feet bgs, and stiff to very stiff clays and silts to the maximum depth explored (125 feet bgs).[15]

Fault Rupture

No known surface expression of fault traces cross the Project site. The site is neither in an Alquist-Priolo Earthquake Fault Zone nor adjacent to any known active fault.[16,17]

Ground Shaking

Because there are two faults within approximately 10 miles of the Project site, as well as other major faults, as indicated in Table 3.9-1, that are capable of generating very large earthquakes within 20 miles of the Project site, the site is expected to be subject to strong ground shaking.

Liquefaction

Liquefaction is a phenomenon in which uniformly sized, loosely deposited, saturated, granular soils (usually fine sand) with low clay content lose strength during strong ground shaking, which causes the soil to soften or behave as a fluid for a short time. Liquefaction generally occurs at depths shallower than 50 feet bgs. Soils may lose their ability to support structures, and this loss of bearing strength may cause structures founded on the liquefied materials to tilt or possibly topple over. Light structures such as pipelines, sewers, and empty fuel tanks that are buried in the ground can float to the surface when they are surrounded by liquefied soil. The susceptibility of a site to liquefaction is a function of the uniformity, depth, density, and water content of the granular sediments beneath the site and the magnitude of the earthquakes that are likely to affect the site. Specifically, soils that are most susceptible to liquefaction are loose, non-cohesive soils, such as sand and silt, that are saturated and bedded between other layers with poor drainage and a cohesive cap.[18]

Liquefaction-related phenomena can include loss of bearing strength, vertical settlement from densification (subsidence), buoyancy effects, and flow failures. Damage from liquefaction and lateral spreading is generally most severe when liquefaction occurs within 15 to 20 feet bgs. Foundations for structures and pipelines would be the components that would be most vulnerable to damage from liquefaction-related phenomena. Seismically induced settlement can occur in areas that are underlain by compressible or poorly consolidated sediments. Some artificial fills are susceptible to mobilization and densification, resulting in earthquake-induced subsidence.

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[15] Cornerstone Earth Group. n.d. *Geotechnical Investigation: Building MPK 21, 307, 308, and 309 Constitution Drive, Menlo Park, California.* Project Number 254-8-7. Prepared for Hibiscus Properties, LLC, Menlo Park, CA. Walnut Creek, CA.

[16] Cornerstone Earth Group. 2014. *Geotechnical Feasibility Investigation: Chilco Road Parcels, 300 Constitution Drive, Menlo Park, California.* Project Number 254-8-3. July 22. Prepared for Hibiscus Properties, LLC, Menlo Park, CA. Walnut Creek, CA.

[17] Cornerstone Earth Group. n.d. *Geotechnical Investigation: Building MPG 21, 307, 308 and 309 Constitution Drive, Menlo Park, California.* Project Number 254-8-7. Prepared for Hibiscus Properties, LLC, Menlo Park, CA. Walnut Creek, CA.

[18] Cornerstone Earth Group. 2014. *Geotechnical Feasibility Investigation. Chilco Road Parcels, 300 Constitution Drive, Menlo Park, California.* Project Number 254-8-3. July 22. Prepared for Hibiscus Properties, LLC, Menlo Park, CA. Walnut Creek, CA.

The Project site is located in an area that has been mapped by CGS[19] and ABAG[20] as being subject to a high liquefaction hazard. Furthermore, as discussed above under *Soils*, layers of sand and silt are interbedded with clay at the Project site. These layers are within the high level of groundwater, as discussed below under *Groundwater*, and thus are saturated. The likelihood for liquefiable sediments being present is high, and thus the potential for liquefaction at the site is high.[21]

Lateral Spreading

Lateral spreading (or lurching) occurs as a form of horizontal displacement of relatively flat-lying material toward an open face, such as an excavation, channel, or body of water. Generally, in soils, this movement is due to failure along a weak plane and may often be associated with liquefaction.

Although liquefaction potential at the Project site is high, the nearest open faces[22] are in smaller unnamed feeder sloughs to Ravenswood Slough, which are at least 450 feet from the Project site. These sloughs are relatively shallow and too far away to pose a danger of lateral spreading at the Project site.[23,24] Therefore, the potential for lateral spreading to affect the site appears to be low.

Ground Rupture

Ground rupture can occur when the pore water pressure within liquefiable soil layers is great enough to break through the overlying non-liquefiable layer. Because the potential for liquefaction at the Project site is high, ground rupture is possible. However, at the eastern end of the Project site, there is a 23-foot cap above the liquefiable layer, which is enough to prevent ground rupture. Therefore, the risk of ground rupture is low at this portion of the Project site.[25] The thickness of the cap above the liquefiable layer west of this area has not been verified.[26] Because subsurface conditions can vary over short distances, it is unknown whether the cap is adequate for preventing ground rupture on the rest of the Project site.

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[19] California Geological Survey. 2006. *State of California Seismic Hazard Zones, Palo Alto 7.5-minute Quadrangle, San Mateo and Santa Clara Counties, California.* Available: <http://gmw.consrv.ca.gov/shmp/MapProcessor.asp?MapNavAction=&Action=IMap&Location=NoCal&FClass=Quad&FID=Palo%20Alto&Liq=false&Land=false&Bore=false&Road=true&City=false&x1=563047.544275949&y1=4150994.333972209&x2=580526.127726051&y2=4136428.8477637907#>. Accessed: September 21, 2015.

[20] Association of Bay Area Governments. n.d. *San Mateo County Hazards: Earthquake Liquefaction and Shaking.* Available: <http://planning.smcgov.org/documents/san-mateo-county-hazards-earthquake-liquefaction-shaking>. Accessed: September 21, 2015.

[21] Cornerstone Earth Group. 2014. *Geotechnical Feasibility Investigation: Chilco Road Parcels, 300 Constitution Drive, Menlo Park, California*. Project Number 254-8-3. July 22. Prepared for Hibiscus Properties, LLC, Menlo Park, CA. Walnut Creek, CA.

[22] Examples of open faces are cliffs, banks, and ditches. (Cascade Crest Consulting Engineers. 2015. Landslide and Lateral Spread. Available: <http://www.cccengr.com/Landslide_Lateral_Spread.html>. Accessed: October 12, 2015.)

[23] Cornerstone Earth Group. 2014. *Geotechnical Feasibility Investigation: Chilco Road Parcels, 300 Constitution Drive, Menlo Park, California.* Project Number 254-8-3. July 22. Prepared for Hibiscus Properties, LLC, Menlo Park, CA. Walnut Creek, CA.

[24] Cornerstone Earth Group. n.d. *Geotechnical Investigation: Building MPG 21, 307, 308 and 309 Constitution Drive, Menlo Park, California.* Project Number 254-8-7. Prepared for Hibiscus Properties, LLC, Menlo Park, CA. Walnut Creek, CA.

[25] Cornerstone Earth Group. n.d. *Geotechnical Investigation: Building MPG 21, 307, 308, and 309 Constitution Drive, Menlo Park, California.* Project Number 254-8-7. Prepared for Hibiscus Properties, LLC, Menlo Park, CA. Walnut Creek, CA.

[26] Cornerstone Earth Group. 2014. *Geotechnical Feasibility Investigation: Chilco Road Parcels, 300 Constitution Drive, Menlo Park, California.* Project Number 254-8-3. July 22. Prepared for Hibiscus Properties, LLC, Menlo Park, CA. Walnut Creek, CA.

Differential Compaction and Settlement

When near-surface materials vary in composition, either vertically or laterally, strong ground shaking can cause non-uniform compaction, resulting in movement of the materials and overlying structures. This can also occur gradually over time. Factors that influence differential compaction and settlement are soil composition and consistency, the presence of native soils versus artificial fill (in particular, uncompacted fill), the magnitude of loading from structures on the soil, the potential for liquefaction, and any other changes in thickness or consistency.[27] The risk of differential compaction and settlement at the Project site is moderate.[28]

Expansive Soils

Expansive soils can undergo a significant volume change with changes in moisture content. They shrink and harden when dried and expand and soften when wetted. Soil plasticity is an indicator of the shrink-swell potential of soil. Tests at the Project site indicate that the soils have a very high expansion potential, also referred to as linear extensibility.[29] Furthermore, NRCS rates the native soils at the site as having high linear extensibility potential (see Table 3.9-3).[30]

Compressible Surface Soils and Fills

Compressible soils can settle or subside as a result of ground shaking or as a result of the loads placed on top of them. As discussed above under *Soils*, undocumented artificial fill is present at the Project site. It is not known whether this fill has been compacted.[31] Therefore, there is the potential for compressible soils to be present at the Project site.

Landslide Hazards

The Project site is in a nearly flat area with gentle slopes. Because there are no steep slopes, the likelihood of landslide and debris flow is very low.[32]

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[27] Cornerstone Earth Group. 2014. *Geotechnical Feasibility Investigation: Chilco Road Parcels, 300 Constitution Drive, Menlo Park, California.* Project Number 254-8-3. July 22. Prepared for Hibiscus Properties, LLC, Menlo Park, CA. Walnut Creek, CA.

[28] Cornerstone Earth Group. n.d. *Geotechnical Investigation: Building MPG 21, 307, 308 and 309 Constitution Drive, Menlo Park, California.* Project Number 254-8-7. Prepared for Hibiscus Properties, LLC, Menlo Park, CA. Walnut Creek, CA.

[29] Cornerstone Earth Group. 2014. *Geotechnical Feasibility Investigation: Chilco Road Parcels, 300 Constitution Drive, Menlo Park, California.* Project Number 254-8-3. July 22. Prepared for Hibiscus Properties, LLC, Menlo Park, CA. Walnut Creek, CA.

[30] National Resources Conservation Service. 2015. *Web Soil Survey*. U.S. Department of Agriculture. Available: <http://websoilsurvey.sc.egov.usda.gov/App/HomePage.htm>. Accessed: September 18, 2015.

[31] Cornerstone Earth Group. n.d. *Geotechnical Investigation: Building MPG 21, 307, 308 and 309 Constitution Drive, Menlo Park, California.* Project Number 254-8-7. Prepared for Hibiscus Properties, LLC, Menlo Park, CA. Walnut Creek, CA.

[32] Cornerstone Earth Group. 2014. *Geotechnical Feasibility Investigation: Chilco Road Parcels, 300 Constitution Drive, Menlo Park, California.* Project Number 254-8-3. July 22. Prepared for Hibiscus Properties, LLC, Menlo Park, CA. Walnut Creek, CA.

Groundwater

Groundwater at the Project site was measured from borings. Depths ranged from 6 to 9 feet bgs. Other studies recently completed at nearby sites have encountered similar depths to groundwater (e.g., 8 feet bgs and, somewhat less shallow, 9.5 to 15.5 feet bgs). Fluctuations in groundwater level depend on season, tidal fluctuation, regional fluctuation, and other factors.[33,34]

Environmental Impacts

This section describes the impact analysis related to geology and soils for the Project. It describes the methods used to determine the impacts of the Project and lists the thresholds used to conclude whether an impact would be significant. Impacts are determined to be no impact (NI), less than significant (LTS), less than significant with mitigation (LTS/M), or significant and unavoidable (SU). Measures to mitigate (i.e., avoid, minimize, rectify, reduce, eliminate, or compensate for) significant impacts accompany each impact discussion, as needed.

Thresholds of Significance

In accordance with Appendix G of the State CEQA Guidelines, the Project would be considered to have a significant effect if it would result in any of the conditions listed below.

- Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving (1) 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; (2) strong seismic ground shaking; (3) seismically related ground failure, including liquefaction; or (4) landslides.
- Result in substantial soil erosion or the loss of topsoil.
- Be located on a geologic unit or soil that is unstable or that would become unstable as a result of the Project and potentially result in an onsite or offsite landslide, lateral spreading, subsidence, liquefaction, or collapse.
- Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994),[35] creating substantial risks to life or property.
- Have soils that would be incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems in areas where sewers are not available for the disposal of wastewater.

For the purpose of this Draft EIR, a significant impact would result from soil and/or seismic conditions that are so unfavorable that they could not be overcome by reasonable design, construction, or maintenance practices.

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[33] Cornerstone Earth Group. 2014. *Geotechnical Feasibility Investigation: Chilco Road Parcels, 300 Constitution Drive, Menlo Park, California.* Project Number 254-8-3. July 22. Prepared for Hibiscus Properties, LLC, Menlo Park, CA. Walnut Creek, CA.

[34] Cornerstone Earth Group. n.d. *Geotechnical Investigation: Building MPG 21, 307, 308 and 309 Constitution Drive, Menlo Park, California.* Project Number 254-8-7. Prepared for Hibiscus Properties, LLC, Menlo Park, CA. Walnut Creek, CA.

[35] The State CEQA Guidelines specifically reference this version of the Uniform Building Code.

Methods for Analysis

The preliminary geotechnical assessment describes and evaluates geologic and geotechnical conditions at the Project site to support preliminary planning and the conceptual-level design during the initial phases of Project planning. The geotechnical investigations prepared for the Project site provide a summary and compilation of the available geotechnical information that was used as part of the analysis of geologic, seismic, and geotechnical issues for this Draft EIR. Two geotechnical feasibility investigations have been prepared for the Project site. The geotechnical feasibility investigation for Building 23 included field and laboratory programs to evaluate surficial and subsurface soils; an exploratory program, with borings to 9.5 feet bgs, to investigate subsurface conditions; geologic site reconnaissance; and preliminary identification of seismic and geologic impacts and mitigation measures. The geotechnical investigation for 307–309 Constitution Drive included field and laboratory programs to evaluate surficial and subsurface soils; an exploratory program, with borings to 35 feet bgs and cone penetration tests to 125 feet bgs, to investigate subsurface conditions; and engineering analysis.

Design-level geotechnical studies would be completed during development of construction plans, in accordance with the 2013 California Building Standards Code[36] and City building permit requirements.

Impacts Not Evaluated in Detail

Loss of Topsoil. As discussed above, soils at the Project site are primarily of a type that is not a source of topsoil. Because the Project would not result in the loss of topsoil, this impact is not evaluated further.

Impacts on Septic Systems. The Project would not include any septic tanks or leach field systems. Wastewater generated at the Project site would be disposed through the existing sanitary sewer system. Because the Project would not require soils that would be capable of supporting septic systems, this impact is not evaluated further.

Fault Rupture. As shown in Figure 3.9-1 and Table 3.9-1, no faults cross the Project site, nor is the site within an Alquist-Priolo Earthquake Fault Zone.

Landslides. The Project site is nearly level. It is not adjacent to any hillsides where seismically induced landslides or other downslope movements of rock or soil material could pose a hazard. In addition, the Project would not cause or exacerbate landslide hazards.

Lateral Spreading. Because there are no steep, open faces or bodies of water adjacent to the Project site that could be conducive to lateral spreading, there would be no risk of lateral spreading.

Impacts and Mitigation Measures

Impact GEO-1: Strong Seismic Ground Shaking and Seismically Related Ground Failure. The Project would not expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving (1) strong seismic ground shaking and (2) seismically related ground failure, including liquefaction. (LTS)

Development of the Project site would involve construction and occupancy of new buildings in a location where strong seismic ground shaking can be expected to occur over the life of the Project. Based on previous investigations at the site, mapped soil conditions, and the existence of high groundwater, the

[36] City of Menlo Park. 2013. *2013 Building Standards Codes, Summary of Changes*. December. Available: <http://www.menlopark.org/DocumentCenter/Home/View/93>. Accessed: September 21, 2015.

potential for liquefiable sediments is high. As discussed above under *Liquefaction*, the County Hazards Mitigation maps and the CGS Seismic Hazard Zone maps both identify the Project site as being potentially subject to liquefaction. Liquefaction-related phenomena such as loss of bearing strength, differential settlement, and flow failures could damage proposed structures at the Project site. Although seismic hazards are present, the preliminary geotechnical investigation for the Project site concluded that development of the Project is feasible, provided the potential hazards are reduced through the implementation of standard design and construction methods. Specifically, all structures, roads, and utility lines must meet or exceed design criteria of the adopted California Building Standards Code for Seismic Zone D, which specifies that the site is in an area of high seismic vulnerability.[37] Design and construction of the structures and facilities at the Project site would be subject to the relevant sections of the 2013 California Building Standards Code.

The Maximum Credible Earthquake peak ground acceleration is 0.55g. Other site coefficients are available in the Project geotechnical investigation.[38] In addition, because the Project site is in a liquefaction Seismic Hazard Zone, the Project Sponsor would be required to comply with the guidelines set by CGS Special Publication 117, which outlines the protocol for analysis and treatment of liquefaction-related hazards and provides estimates regarding vertical settlement and lateral spreading.

Any prediction of liquefaction-related settlement is necessarily approximate, and related hazard assessment and development of recommendations for treatment of such hazards must be performed conservatively, as recommended by CGS Special Publication 117A. A similarly conservative approach is recommended, again by CGS Special Publication 117A, when estimating the amount of localized differential settlement that is likely to occur as part of overall predicted settlement. Localized differential settlement of up to two-thirds of the total settlement anticipated must be assumed until more precise predictions of differential settlements can be made.[39]

The 2013 California Building Standards Code requires geotechnical investigations to provide design criteria that minimize impacts associated with strong ground shaking during an earthquake. The 2013 California Building Standards Code also requires all foundations and other improvements (e.g., roads, driveways, utilities) to be designed by a licensed professional engineer. The designs shall be based on site-specific soil investigations performed by a California Certified Engineering Geologist or Geotechnical Engineer to ensure the suitability (especially when considering the existence of potentially liquefiable soils at the site) of the subsurface materials with respect to adequately supporting the proposed structures. This includes designing foundations that are able to tolerate or resist the anticipated total and differential settlement that can be caused by liquefaction. The City and the Project Sponsor would be responsible for ensuring that all recommendations from the investigations are incorporated in the Project, pursuant to state law.

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[37] Seismic Design Category D: Corresponds to buildings and structures in areas that are expected to experience severe and destructive ground shaking but NOT located close to a major fault. Sites with poor soils are a good example. (International Seismic Application Technologies. 2014. *Seismic Design Category Reference Information*. ASCE 7-05. Available: <http://www.isatsb.com/Seismic-Design-Category.php>. Accessed: October 12, 2015.)

[38] Cornerstone Earth Group. n.d. *Geotechnical Investigation: Building MPG 21, 307, 308 and 309 Constitution Drive, Menlo Park, California.* Project Number 254-8-7. Prepared for Hibiscus Properties, LLC, Menlo Park, CA. Walnut Creek, CA.

[39] California Geological Survey. 2008. *Guidelines for Evaluating and Mitigating Seismic Hazards in California.* Special Publication 17A. Available: <http://www.conservation.ca.gov/cgs/shzp/webdocs/documents/sp117.pdf>. Accessed: October 8, 2015.

As evidenced by the level of development throughout the Bay Area, successful building construction is possible in a seismically active zone and can be readily accomplished even where seismic hazards are known to exist. The risks to public safety from seismic hazards can be mitigated to the extent required by law with implementation of proper design and construction methods, which are the responsibility of the City and the Project Sponsor. The City shall monitor design and construction and enforce the law through the building permit process. In addition, the City, along with other Bay Area jurisdictions, participates in a coordinated planning and emergency response program and has its own Emergency Operation Plan to respond to natural disasters. Consequently, the Project would have a ***less-than-significant*** impact with regard to the exposure of people or structures to seismic ground shaking or liquefaction-related hazards.

Impact GEO-2: Soil Erosion. The Project would result in less-than-significant soil erosion impacts. (LTS)

As discussed above under *Site Topography*, the Project site is nearly level. The Project would not involve development on hillsides or cut and fill. Thus, there would be no long-term topographic changes that could alter erosion potential. However, development of the Project site would involve grading to construct building foundations and trenching for utility installations, surface parking, and landscaping. Some minor modifications that would allow additional roadway and bicycle/pedestrian access points would also be implemented. These construction activities could temporarily expose soils to erosive effects from stormwater runoff.

If fill is imported and stockpiled at the Project site, the stockpiles could be eroded by wind or water unless properly protected. Because the Project site exceeds 1 acre in size, the Project Sponsor would be required to implement a SWPPP, in accordance with Chapter 7.42 of the City's Municipal Code, to reduce potential erosion and subsequent sedimentation in stormwater runoff. This SWPPP would include BMPs to control erosion associated with grading, trenching, and other surface-disturbing activities. The Project Sponsor would be required to submit a grading plan to the City before permits would be issued. In addition, the Project Sponsor would be required to prepare and submit a G&D plan, along with an Erosion and Sedimentation Control Plan, prior to obtaining a grading permit from the City. The Project Sponsor would also be required to implement the specifications in Appendix J of the 2013 California Building Standards Code, which regulates grading activities, including associated drainage and erosion control. Compliance with City requirements and the 2013 California Building Standards Code, which are within the authority of the City to enforce and monitor, would ensure that erosion impacts resulting from Project construction would be less than significant.

After construction, the Project site would be developed with buildings, parking areas, roadways, bicycle and pedestrian paths, an open space area, terraced garden area, and landscaping and hardscaping. Stormwater runoff would be managed and collected by a new stormwater drainage and management system that would connect to the City's storm drain system, as described in Chapter 2, *Project Description*. As a result of the Project, the impervious area would decrease from 86 percent of the site (approximately 303,400 gsf) to 70 percent of the site (approximately 662,200 gsf), keeping more water onsite and allowing percolation to groundwater reserves. The impact resulting from erosion under Project operation would be ***less than significant***.

Impact GEO-3: Soil Hazards. The Project would not be located on a geologic unit or soil that is unstable or that would become unstable as a result of the Project and potentially result in subsidence or collapse. (LTS)

Although subsidence was a concern in Santa Clara Valley in the early part of the twentieth century, it was effectively halted in the 1960s. The current risk of subsidence and associated differential settlement is low.[40] However, as discussed above, the preliminary geotechnical investigation anticipates that differential settlement resulting from seismically induced liquefaction may occur. If Project structures are improperly designed and constructed, differential settlement could undermine structural foundations, potentially exposing people onsite, including inhabitants and construction workers, to increased safety risks.

Construction activities such as excavation could introduce instability and cause slopes to collapse. Soil collapse is also associated with subterranean voids, such as tunnels or mine shafts, or with excessive loading. Soil collapse could result if utilities, pipes, or tanks that are currently extant at the Project site are abandoned in place and not appropriately backfilled, capped, or retrenched. Furthermore, the artificial, undocumented fill and native deposits that underlie the Project site are regarded as potentially weak soils that may be compressible or exhibit other characteristics that would make them unstable (e.g., differential compaction).

General excavation would occur at a depth of 5 to 10 feet. As discussed above under *Groundwater*, groundwater was measured at depths of 6 to 9 feet bgs. The presence of shallow groundwater could affect grading and underground construction and result in a wet and unstable pavement subgrade, difficult compactions, and difficult utility installations. Excavations less than 5 feet deep below existing grades that are backfilled the same day are likely to remain relatively dry. Dewatering and the shoring of utility trenches may be required for deeper work, such as utility installations. However, standard engineering practices could be used to reduce potential hazards associated with soils at the Project site. The preliminary geotechnical investigation concluded that development of the Project site is feasible from a geotechnical perspective. Section 3.10, *Hydrology and Water Quality*, discusses impacts associated with contaminated groundwater encountered during dewatering.

As part of the construction permitting process, the City requires completed reports from registered soil professionals to identify potentially unsuitable soil conditions. The reports must (a) identify potentially unsuitable soil conditions and (b) contain appropriate recommendations for foundation type and design criteria, conforming to the analysis and implementation criteria in the 2013 California Building Standards Code, Chapters 16 and 18 and Appendix J, to eliminate inappropriate soil conditions.

Adherence to the soil and foundation support parameters of the 2013 California Building Standards Code, as required by City and state law, will ensure that structures and their associated trenches and foundations will have the maximum practicable protection from soil failures available under static or dynamic conditions. The Project Sponsor would be required to incorporate these recommendations into the Project design. In view of these circumstances, hazards related to unstable geologic or soil units at the Project site are considered ***less than significant***.

[40] Ingebritsen, S.E., and D.R. Jones. 1999. Santa Clara Valley, California: A Case of Arrested Subsidence. In D. Galloway, D.R. Jones, S.E. Ingebritsen (eds.), *Land Subsidence in the United States*. U.S. Geological Survey Circular 1182. Reston, VA. Available: <http://pubs.usgs.gov/circ/circ1182/>. Accessed: September 21, 2015.

Impact GEO-4: Expansive Soil. The Project would not be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating a less-than-significant risk to life or property. (LTS)

As discussed above, the geotechnical investigation for the Project site and NRCS data indicate that soils at the site have a high shrink-swell potential. Structural damage, warping, and cracking in parking areas and along roads, driveways, and sidewalks, as well as utility line ruptures, may occur if the potential for expansive soils and the nature of the imported fill is not considered during design and construction of Project improvements. However, standard engineering practices would be employed to reduce potential hazards associated with soils at the Project site. Furthermore, the geotechnical feasibility investigation concluded that development of the Project site is feasible from a geotechnical perspective.[41]

As part of the construction permitting process, the City would require completed reports regarding soil conditions to identify potentially unsuitable soil conditions. The evaluations must be conducted by registered soil professionals and (a) identify potentially unsuitable soil conditions and (b) contain appropriate recommendations for foundation type and design criteria, conforming to the analysis and implementation criteria described in the 2013 California Building Standards Code, Chapters 16 and 18 and Appendix J, to eliminate inappropriate soil conditions.

Adherence to the soil and foundation support parameters of the 2013 California Building Standards Code, as required by City and state law, will ensure that structures and their associated trenches and foundations will have the maximum practicable protection from soil failures available under static or dynamic conditions. The Project Sponsor would be required to incorporate these recommendations into the Project design. In view of these circumstances, impacts related to expansive soil units at the Project site are considered ***less than significant***.

Cumulative Impacts

There is a different geographic context for each of the cumulative impacts. The geographic context for the analysis of cumulative impacts associated with seismic hazards is the Bay Area. The geographic context for an analysis of impacts on development associated with the geotechnical aspects of erosion (i.e., permanent loss of soil or topographic changes that cause or exacerbate erosion) is generally site-specific, and impacts would not be compounded by additional development. From a watershed perspective, however, erosion can affect water quality by contributing sediment; thus, the geographic context for erosion impacts for the Project would include the San Francisquito Creek watershed (see Section 3.10, *Hydrology and Water Quality*). The geographic context for an analysis of impacts on development from unstable soil conditions, including expansive soils or other conditions that could cause structural problems, is limited to the site and would not be compounded by additional development.

Cumulative impacts are addressed only for those thresholds that would result in a Project-related impact, whether it be less than significant, significant, or significant and unavoidable. If the Project would result in no impact with respect to a particular threshold, it would not contribute to a cumulative impact. Therefore, no analysis would be required for the following thresholds:

- Fault rupture

[41] Cornerstone Earth Group. 2014. *Geotechnical Feasibility Investigation: Chilco Road Parcels, 300 Constitution Drive, Menlo Park, California.* Project Number 254-8-3. July 22. Prepared for Hibiscus Properties, LLC, Menlo Park, CA. Walnut Creek, CA.

- Landslides
- Lateral spreading
- Loss of topsoil
- Impacts on septic systems

This cumulative analysis examines the effects of the Project on the potentially affected geographic area in combination with other current projects, probable future projects, and projected future growth.

Impact C-GEO-1: Cumulative Seismic Hazards. The Project, in combination with other foreseeable development in the vicinity, would not substantially increase the risk of exposure to seismic hazards. (LTS)

Future population growth in the Bay Area, along with the Project and other foreseeable development, will increase the number of people and structures that will be exposed to seismic hazards. Given the risk from seismic activity associated with all development in seismically active areas, this impact would be significant if it were not mitigated by building code requirements. Construction in California is strictly regulated by the California Building Standards Code, as adopted and enforced by each jurisdiction, including the City, to reduce risks from seismic events to the maximum extent possible. Because the City uses and enforces the requirements of the California Building Standards Code as part of its own building code, new buildings and facilities in the City are required to be sited and designed in accordance with the most current geotechnical and seismic guidelines and recommendations. Other projects would implement all necessary design features recommended by site-specific geotechnical studies (required for all development applications) to reduce the risk from seismic activity, unstable slopes, and soil limitations. Because all future projects would be required to implement necessary design features to minimize exposure to seismic hazards, cumulative impacts related to seismic hazards would be ***less than significant***.

Impact C-GEO-2: Cumulative Soil Erosion. The Project, in combination with other foreseeable development in the vicinity, would not substantially increase the soil erosion potential. (LTS)

Development of other projects could expose soil surfaces and alter soil conditions. To minimize the potential for cumulative impacts related to erosion, all projects in the city are required to conform to the provisions of applicable City ordinances and state regulations pertaining to erosion and sedimentation control. This includes City Municipal Code Chapter 7.42 requirements, which implement the federal and state NPDES program. Therefore, cumulative impacts related to soil erosion would be ***less than significant***.

Impact C-GEO-3: Cumulative Soil Hazards. The Project, in combination with other foreseeable development in the vicinity, would not substantially increase soil hazards. (LTS)

Development is required to undergo an analysis of geological and soil conditions, as applicable to a specific individual project. Restrictions on development would be applied in the event that geological or soil conditions pose a risk to safety as a result of site-specific geologic or soil instability, subsidence, collapse, and/or expansive soil. Because the City uses and enforces the requirements of the California Building Standards Code as part of its own building code, new buildings and facilities in the City are required to be sited and designed in accordance with the most current geotechnical guidelines and recommendations. Accordingly, impacts with respect to soil hazards would be ***less than significant***.

3.10 Hydrology and Water Quality

This section describes the regulatory and environmental setting for hydrology and water quality. It also describes potential impacts on hydrology and water quality that would result from implementation of the Facebook Campus Expansion Project (Project) and mitigation measures to reduce these impacts.

Additional information on the Project's potential impacts related to stormwater is provided in the WRECO hydrologic and hydraulic study report.[1] The Project's potential impacts on water supply are discussed in Section 3.14, *Utilities and Service Systems*.

Issues identified in response to the Notice of Preparation (NOP) (Appendix 1) were considered in preparing this analysis. The applicable issues that were identified pertain to the impacts of sea level rise (SLR) on the Project; the need for improvements to existing levees and flood protection to mitigate the potential threat of tidal flooding; a request for a Project hydraulic report and drainage plans, including information regarding runoff and downstream flow; and ownership of maintenance for the underground drainage system.

Existing Conditions

Regulatory Setting

Federal

Clean Water Act

Several sections of the Clean Water Act (CWA) pertain to regulating impacts on waters of the United States. The CWA sections below pertain to the Project.

The term *waters of the United States* essentially refers to all surface waters, such as all navigable waters and their tributaries, all interstate waters and their tributaries, all wetlands adjacent to these waters, and all impoundments of these waters. The U.S. Environmental Protection Agency (EPA) is the overarching authority with respect to protecting the quality of waters of the United States. However, the State Water Resources Control Board (SWRCB) regulates waters of the United States and state under CWA Sections 303, 401 and 402, and the U.S. Army Corps of Engineers (USACE) has jurisdiction over waters of the United States under CWA Section 404.

CWA Sections 303 and 402 apply to the Project because of potential effects on water quality. CWA Sections 404 and 401 apply to wetlands and other waters of the United States and are not discussed further because the Project would not involve work within these water features.

Section 303—Impaired Waters

The state of California adopts water quality standards to protect beneficial uses of waters of the state as required by Section 303(d) of the CWA and the Porter-Cologne Water Quality Control Act (Porter-Cologne Act), described below. Section 303(d) of the CWA established the total maximum daily load

[1] WRECO. 2016. *Hydrologic and Hydraulic Study Report for Facebook Menlo Park West Campus, Menlo Park, California*. March 2016.

(TMDL) process to guide the application of state water quality standards (refer to the discussion of state regulations below). To identify candidate water bodies for TMDL analysis, a list of water quality–limited segments was generated by the SWRCB. These stream or river segments are impaired by the presence of pollutants such as sediment and are more sensitive to disturbance because of this impairment.

In addition to the impaired water body list required by CWA Section 303(d), CWA Section 305(b) requires states to develop a report that assesses statewide surface water quality. Both CWA requirements are addressed through the development of a 303(d)/305(b) Integrated Report. The SWRCB developed the statewide 2010 California Integrated Report, which was based on the Integrated Reports from each of the nine Regional Water Quality Control Boards (RWQCBs). The 2010 California Integrated Report was approved by the SWRCB on August 4, 2010, and approved by EPA on November 12, 2010.

Drainage from the Project area ultimately discharges into the Lower San Francisco Bay. The 303(d)-listed impairments for the Lower San Francisco Bay are shown in Table 3.10-2, later in this section.

Section 402—National Pollutant Discharge Elimination System

The 1972 amendments to the federal Water Pollution Control Act established the National Pollutant Discharge Elimination System (NPDES) permit program to control discharges of pollutants from point-source discharges or discharges that one can point to as a known source of pollutants. NPDES is the primary federal program that regulates point-source and nonpoint-source discharges to waters of the United States.

The 1987 amendments to the CWA created a new section that is devoted to stormwater permitting (Section 402). EPA has granted the state of California primacy in administering and enforcing the provisions of the CWA and NPDES within state boundaries. NPDES permits are issued by one of the nine RWQCBs. Section 402(p) requires permits for discharges of stormwater from industrial construction and municipal separate storm sewer systems (MS4s).

Below are the NPDES permits that are relevant to the Project:

- San Francisco Bay Municipal Regional Permit
- Construction General Permit

More information about these permits is provided in the *State Regulations* section, below.

National Flood Insurance Program

In response to the increasing cost of disaster relief, Congress passed the National Flood Insurance Act (NFIA) of 1968 and the Flood Disaster Protection Act of 1973. The Federal Emergency Management Agency (FEMA) administers the National Flood Insurance Program (NFIP) to provide subsidized flood insurance to communities that comply with FEMA regulations to limit development in floodplains.

A Flood Insurance Rate Map (FIRM) is the official map of a community. The FIRM is prepared by FEMA to delineate both the special flood-hazard areas and the flood-risk premium zones that are applicable to the community.

The Project is located within FEMA-designated Flood Zone AE. More information is provided in the *Environmental Setting* section.[2]

State

Porter-Cologne Water Quality Control Act

The Porter-Cologne Act is implemented by the SWRCB and the nine RWQCBs. The SWRCB is the primary state agency with responsibility for protecting the quality of the state's surface and groundwater supplies, or *waters of the state*. Waters of the state are defined more broadly than waters of the United States. Waters of the state are any surface water or groundwater, including saline waters, within the boundaries of the state. This includes waters in both natural and artificial channels. It also includes all surface waters that are not waters of the United States or non-jurisdictional wetlands, which are essentially distinguished by whether they are navigable. If waters are not navigable, then they are considered to be isolated and, therefore, fall under the jurisdiction of only the Porter-Cologne Act and not the CWA.

The Porter-Cologne Act authorizes the SWRCB to draft state policies regarding water quality. The act requires projects that are discharging, or proposing to discharge, wastes that could affect the quality of the state's water to file a Report of Waste Discharge (RWD) with the appropriate RWQCB. The Porter-Cologne Act also requires that the SWRCB or a RWQCB adopt water quality control plans (basin plans) for the protection of water quality. Basin plans are updated and reviewed every 3 years and provide the technical basis for determining Waste Discharge Requirements (WDRs), taking enforcement actions, and evaluating clean water grant proposals. A basin plan must include (1) a statement of beneficial water uses that the RWQCB will protect, (2) the water quality objectives needed to protect the designated beneficial water uses, and (3) strategies to be implemented, with time schedules for achieving the water quality objectives.[3]

In basin plans, the RWQCBs designate beneficial uses for all water body segments in their jurisdictions and then set the criteria necessary to protect these uses. Consequently, the water quality objectives developed for particular water segments are based on the designated use and vary, depending on such use. The San Francisco Bay RWQCB has authority regarding region-wide and water body–specific beneficial uses and has set numeric and narrative water quality objectives for several substances and parameters in numerous surface waters in its region. For those waters (typically streams) that do not have specific beneficial uses or water quality objectives, the tributary rule[4] applies. Specific objectives for concentrations of chemical constituents are applied to bodies of water, based on their designated beneficial uses.[5]

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[2] Federal Emergency Management Agency. 2012. *National Flood Hazard Layer (Official).* Panel 306 of 510, Map #06081C0306E, dated October 16, 2012. Available: <http://fema.maps.arcgis.com/home/webmap/viewer.html?webmap=cbe088e7c8704464aa0fc34eb99e7f30&extent=-119.8176663183592,34.35002462935404,-119.57871368164078,34.49162941603186>. Accessed: September 1, 2015.

[3] San Francisco Bay Regional Water Quality Control Board. 2015. *San Francisco Bay Basin (Region 2) Water Quality Control Plan (Basin Plan).* Originally adopted 2011; last updated 2015. Available: <http://www.waterboards.ca.gov/rwqcb2/basin_planning.shtml>. Accessed: August 31, 2015.

[4] The "tributary rule" refers to any streams not specifically listed in the basin plan that are deemed to have the same beneficial uses and water quality objectives of the listed stream, river, or lake to which they are a tributary.

[5] San Francisco Bay Regional Water Quality Control Board. 2013. *San Francisco Bay Basin (Region 2) Water Quality Control Plan (Basin Plan).* Last updated 2015. Available: <http://www.waterboards.ca.gov/rwqcb2/basin_planning.shtml>. Accessed: August 31, 2015.

The SWRCB identifies waters that fail to meet standards for specific pollutants, which are then state listed in accordance with CWA Section 303(d). If it is determined that waters are impaired for one or more constituents and the standards cannot be met through point-source or nonpoint-source controls (NPDES permits or WDRs), then CWA requires the establishment of TMDLs. TMDLs may establish daily load limits of the pollutant or, in some cases, require other regulatory measures, with the ultimate goal of reducing the amount of the pollutant entering the water body to meet water quality objectives. The latest 303(d) impairments are listed in the 2010 Clean Water Act Section 303(d) and 305(b) Integrated Report.[6]

The Project lies within the jurisdiction of the San Francisco Bay RWQCB, which is responsible for the protection of beneficial uses of water resources in the San Francisco Bay Area, from Tomales Bay south to Pescadero Creek, including Alameda, Contra Costa, San Francisco, Santa Clara (north of Morgan Hill), San Mateo, Marin, Sonoma, Napa, and Solano Counties. The 2011 San Francisco Bay Basin Plan was last updated in 2015.[7] More information on beneficial uses, water quality objectives, and 303(d) impairments that apply to the Project are provided in the surface water quality discussions in the *Environmental Setting* section.

NPDES General Construction Stormwater Permit

The General NPDES Permit for Stormwater Discharges Associated with Construction and Land Disturbance Activities (Order 2009-0009-DWQ) (Construction General Permit) regulates stormwater discharges for construction activities under CWA Section 402. Dischargers whose projects disturb 1 acre or more of soil, or whose projects disturb less than 1 acre but are part of a larger common plan of development that in total disturbs 1 acre or more, are required to obtain coverage under the Construction General Permit. The Construction General Permit requires development and implementation of a stormwater pollution prevention plan (SWPPP). The SWPPP must list best management practices (BMPs) that the discharger will use to address stormwater runoff and document the placement and maintenance of those BMPs. Additionally, the SWPPP must contain a visual monitoring program; a chemical monitoring program for "non-visible" pollutants, to be implemented in case of a BMP failure; and a monitoring plan for turbidity and pH for projects that meet defined risk criteria.[8] The requirements of the SWPPP are based on the construction design specifications detailed in the final design plans of a project and the hydrology and geology of the site that are expected to be encountered during construction. The local or lead agency requires proof of coverage under the Construction General Permit prior to building permit issuance. The SWPPP is submitted to the SWRCB; a copy is kept at the jobsite where it is updated during different phases of construction. The SWPPP must be available for inspection and review upon request.

Because land disturbance from Project construction would be greater than 1 acre, a Construction General Permit would be required for Project activities.

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[6] State Water Resources Control Board. 2011. *2010 Integrated Report* (Clean Water Act Section 303(d) List/305(b) Report). Last updated 2011. Available: <http://www.waterboards.ca.gov/water_issues/programs/tmdl/integrated2010.shtml?wbid=CAR403310002005091817523 3>. Accessed: August 31, 2015.

[7] San Francisco Bay Regional Water Quality Control Board. 2015. *San Francisco Bay Basin (Region 2) Water Quality Control Plan (Basin Plan).* Originally adopted 2011; last updated 2015. Available: <http://www.waterboards.ca.gov/rwqcb2/basin_planning.shtml>. Accessed: August 31, 2015.

[8] California State Water Resources Control Board. 2013. *Construction General Permit Storm Water Program*. Last updated 2013. Available: <http://www.swrcb.ca.gov/water_issues/programs/stormwater/constpermits.shtml>. Accessed: August 31, 2015.

NPDES General Municipal Stormwater Permit

CWA Section 402 mandates permits for municipal stormwater discharges, which are regulated under the NPDES General Permit for MS4 permits. Phase I MS4 regulations cover municipalities with populations greater than 100,000, certain industrial processes, and construction activities that disturb an area of 5 acres or more. Phase II (small MS4) regulations require that stormwater management plans be developed by municipalities with populations smaller than 100,000 and construction activities that disturb 1 or more acres of land area. The SWRCB adopted a Statewide Phase II Small MS4 General Permit in 2013 to regulate discharges from numerous qualifying small MS4s under a single permit. Small MS4s were categorized as either "Traditional" or "Non-Traditional." Traditional MS4s operate throughout a community. Non-Traditional MS4s are similar to Traditional MS4s but operate at a separate facility. Most Non-Traditional MS4s in California were not designated as having to comply with the statewide Phase II Small MS4 General Permit, although the SWRCB reserved the right to allow the RWQCBs to designate, through due process, any single Non-Traditional MS4 if it deemed necessary.

MS4 permits require that cities and counties develop and implement programs and measures to reduce the discharge of pollutants in stormwater discharges to the maximum extent possible, including best management practices, control techniques, system design and engineering methods, and other measures as appropriate. As part of permit compliance, these permit holders have created stormwater management plans (SWMPs) for their respective locations. These plans outline the requirements for municipal operations, industrial and commercial businesses, construction sites, and planning and land development. The requirements may include multiple measures to control pollutants in stormwater discharges. During implementation of specific projects under the program, project applicants will be required to follow the guidance contained in the SWMPs, as defined by the permit holder in that location.

The SWRCB is advancing Low-Impact Development (LID) in California as a means of complying with municipal stormwater permits. LID incorporates site design, including, among other things, the use of vegetated swales and retention basins and minimizing impermeable surfaces, to manage stormwater and maintain a site's predevelopment runoff rates and volumes.

The Project is located within the jurisdiction of the MS4 Phase I San Francisco Bay Region Municipal Regional Stormwater NPDES Permit (San Francisco Bay MS4 Permit). More information on this permit is provided in the Local Regulations section, below.

San Francisco Bay Municipal Regional Permit

As previously described, the Project is located within the jurisdiction of the San Francisco Bay MS4 Permit. The San Francisco Bay RWQCB issued San Francisco Bay MS4 Permit No. CAS029718 (Order No. R2-2015-0049-DWQ) on November 19, 2015, and it became effective on January 1, 2016. Provision C.3 of the San Francisco Bay MS4 Permit is for new development and redevelopment projects. It requires authorities to include appropriate source control, site design, and stormwater treatment measures in new development and redevelopment projects to address both soluble and insoluble stormwater runoff pollutant discharges and prevent increases in runoff flows from new development and redevelopment projects.

The following requirements apply to certain projects and are based on project size and/or location:

- Post-construction stormwater treatment measures are required for most projects with 10,000 square feet or more of impervious surface
- Post-construction stormwater quantity or hydromodification (flow-peak, volume, and duration) controls are required for projects in certain locations with 1 acre or more of impervious surface, in accordance with local Hydromodification Management Plans[9]
- Provision C.3 of the San Francisco Bay MS4 Permit requires new development and redevelopment to incorporate source control, site design, and stormwater treatment measures to address pollutant discharges in stormwater runoff. This goal is accomplished through LID techniques, including infiltration and biotreatment. The current MS4 regulates stormwater treatment for new development but recognizes that certain urban infill and higher-density and transit-oriented developments have some inherent environmental benefits and challenges. These types of projects, known as "Special Projects," are allowed to use specific types of non-LID treatment measures to treat a certain percentage of the site's runoff.
- The Project would be considered a Regulated Project under the Municipal Regional Permit because it falls within the "Other Redevelopment Projects" category of Provision C.3, which is defined as "any land-disturbing activity that results in the creation, addition, or replacement of exterior impervious surface area on a site on which some past development has occurred." These projects include those that create or replace 10,000 square feet or more of impervious surface, which applies to the Project. To meet the Provision C.3 requirements, projects must include appropriate site design measures, pollutant source controls, and treatment control measures.

Provision C.3 also specifies hydromodification control requirements, which require that post-project runoff shall exceed estimated pre-project rates and/or durations where the increased stormwater discharge rates and/or durations will result in increased potential for erosion and other effects. Hydromodification is a change in the runoff hydrograph (flow patterns) from an area due to land management. This could result in increased peak flows, volumes, and durations from increased impervious area, decreased vegetation, grading/compaction of soils, or construction of drainage facilities. The effects of hydromodification include increased bed and bank erosion in the receiving water, loss of habitat, increased sediment transport and deposition, and increased flooding. The San Mateo Countywide Water Pollution Prevention Program (SMCWPPP) developed its *C.3 Stormwater Technical Guidance* document[10] with use of a countywide Hydromodification Management Control Area Map that delineates areas where increases in runoff are most likely to affect channel health and water quality and provides management options to maintain pre-project runoff patterns. It is designed to prevent erosion in watersheds where new projects as well as redevelopment projects are located. Stormwater treatment and site design measures may include non-mechanical water quality improvement techniques (e.g., grassy swales, bio-retention, detention in landscaping) or stormwater

[9] More information on hydromodification is provided below in the San Mateo Countywide Water Pollution Prevention Program (SMCWRPPP) section.

[10] County of San Mateo. 2013. *C.3 Stormwater Technical Guidance.* For use by developers, builders, and project applications to design and build low-impact development projects. San Mateo Countywide Water Pollution Prevention Program. January 4. Available: <http://www.flowstobay.org/files/privatend/MRPsourcebk/Section4/C3TechGuidanceJan2013.pdf>. Accessed: October 5, 2015.

detention systems. Non-mechanical water quality improvement techniques are generally preferred to promote "natural" water quality improvements. The SMCWPPP *C.3 Stormwater Technical Guidance* complies with the San Francisco Bay Region MS4 permit. The Project is exempt from hydromodification requirements because the site is outside the limits of hydromodification areas.[11]

San Mateo Countywide Water Pollution Prevention Program

SMCWPPP is a partnership of the City/County Association of Governments (C/CAG), which consists of the County of San Mateo and each incorporated city and town in the county. The municipalities that are part of C/CAG share a common MS4 permit. Each municipality in San Mateo County is responsible for implementing a stormwater program in compliance with MS4 permit requirements to prevent discharges of polluted stormwater runoff from its streets into the local storm drain system and nearby surface waters. The permit prescribes how each local municipality will regulate new and redevelopment projects, conduct its municipal maintenance activities, eliminate non-stormwater discharges, inspect businesses to control stormwater pollutants, and encourage the public's help in preventing pollution.

In order to meet local municipal requirements and requirements of the San Francisco Bay MS4 Permit described above, the County of San Mateo developed its *C.3 Stormwater Technical Guidance Handbook*[12] to help developers, builders, and project sponsors include post-construction stormwater controls in their projects. The municipalities must require post-construction stormwater controls as part of their obligations under Provision C.3 of the MS4 permit. The countywide program has also prepared a *Sustainable Green Streets and Parking Lots Design Guidebook* to assist municipalities and project applicants with designing street and parking lot projects that treat stormwater runoff in landscape-based treatment measures.

Waste Discharge Requirements for Dewatering and Other Low-Threat Discharges to Surface Waters

CWA Section 402 also includes WDRs for dewatering activities. Although small amounts of construction-related dewatering are covered under the Construction General Permit, the San Francisco Bay RWQCB has regulations specific to dewatering activities that typically involve reporting and monitoring requirements.

If dewatering is required as part of the Project, then the contractor is required to comply with the San Francisco Bay RWQCB dewatering requirements.

California Department of Pesticides Regulation

California Department of Pesticides Regulation (DPR) is the lead agency for regulating the registration, sale, and use of pesticides in California. It is required by law to protect the environment, including surface waters, from adverse effects of pesticides by prohibiting, regulating, or controlling the uses of such pesticides. DPR has both a Surface Water and Groundwater Protection Program that address sources of pesticide residue in surface waters as well as preventive and response components that reduce the presence of pesticides in surface and groundwater. The preventive component includes local

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[11] County of San Mateo. 2013. *C.3 Stormwater Technical Guidance.* For use by developers, builders, and project applications to design and build low-impact development projects*.* San Mateo Countywide Water Pollution Prevention Program. January 4. Available: <http://www.flowstobay.org/files/privatend/MRPsourcebk/Section4/C3TechGuidanceJan2013.pdf>. Accessed: October 8, 2015.

[12] County of San Mateo. 2013. *C.3 Stormwater Technical Guidance.* For use by developers, builders, and project applications to design and build low-impact development projects. Version 3.2. San Mateo Countywide Water Pollution Prevention Program. January 4.

outreach and the promotion of management practices to reduce pesticide runoff and prevent continued movement to groundwater in contaminated areas. In order to promote cooperation with respect to protecting water quality from the adverse effects of pesticides, DPR and the SWRCB signed a Management Agency Agreement (MAA). The MAA, and its companion document, *The California Pesticide Management Plan for Water Quality,* are intended to coordinate interaction, facilitate communication, promote problem solving, and ultimately ensure the protection of water quality.

Project operation and maintenance in landscaped areas may require the use of pesticides. The storage and use of pesticides would be in compliance with DPR regulations.

Coastal and Ocean Working Group of the California Climate Action Team

The Coastal and Ocean Working Group of the California Climate Action Team (CO-CAT) developed the *State of California Sea-Level Rise Guidance Document* for state agencies to incorporate SLR into planning and decision-making for projects in California. The document was developed in response to Governor Schwarzenegger's Executive Order S-13-08, issued on November 14, 2008, which directed state agencies to plan for SLR and coastal impacts. That executive order also requested the National Research Council (NRC) to issue a report on SLR to advise California on planning efforts. The final report from the NRC, *Sea-Level Rise for the Coasts of California, Oregon, and Washington*, was released in June 2012. The *State of California Sea-Level Rise Guidance Document* was last updated in March 2013 with the scientific findings of the 2012 NRC report.

In the CO-CAT SLR guidance document,[13] three SLR projections, based on the time periods 2030, 2050, and 2100, were selected for areas south of Cape Mendocino using 2000 as the baseline. SLR projections based on the *State of California Sea-Level Rise Guidance Document* are described later in this section.

Local

San Mateo County Sea-Level Rise Vulnerability Assessment

The County of San Mateo initiated a Sea-Level Rise Vulnerability Assessment (Assessment) in spring 2015. The Assessment is part of a long-term resiliency strategy to ensure that communities, ecosystems, and the economy are prepared for climate change. The effort is funded by the California State Coastal Conservancy and conducted through a collaborative multi-stakeholder effort. The Assessment will identify vulnerable assets on the San Francisco Bay (Bay) and coast side of the San Mateo County peninsula, determine the types of impacts, issue initial recommendations on adaptation measures, and improve flooding and SLR mapping. The Assessment is planned for completion in 2016.

San Mateo County Grand Jury Report – Flooding Ahead: Planning for Sea-Level Rise

The County of San Mateo filed a Grand Jury report, "Flooding Ahead: Planning for Sea-Level Rise," on June 4, 2015. The report discusses ways for the county to plan for SLR as well as alternative sources of funding for SLR-related projects. The report focuses on addressing SLR through land use planning, SLR-related policies in local general plans, and SLR adaptation measures. The adaptation measures include, but are not limited to, constructing or modifying levees, elevating structures, restoring wetlands, or abandoning low-lying areas. The Grand Jury recommends that a single organization undertake SLR planning on a countywide basis and urges action now to undertake countywide planning for SLR.

[13] Coastal and Ocean Working Group of the California Climate Action Team. 2013. *State of California Sea-Level Rise Guidance Document*. March.

In response to the Grand Jury report, the City of Menlo Park (City) stated its general agreement with the report's findings regarding the risks associated with SLR. The City agrees that a countywide coordinated approach is needed to address the potential impact on people, infrastructure, and property. Addressing SLR should be undertaken by an organization that represents all jurisdictions in the county. Its focus should include storm-related flooding, tidal action, and SLR. The City is in the process of updating its general plan Land Use Element as part of ConnectMenlo, which is anticipated to address SLR and complement existing policies in the Safety Element. The Safety Element includes a map of areas that are vulnerable to SLR. The City is also participating in the San Francisquito Creek Joint Power Authority's SAFER Bay project, which will evaluate infrastructure alternatives to protect Menlo Park, East Palo Alto, and Palo Alto against extreme tides and SLR.

City of Menlo Park Municipal Code

The City of Menlo Park Municipal Code contains the following requirements related to protection of water resources:

Title 7: Health and Sanitation, Chapter 7.38. Title 7, Chapter 7.38, discusses general water conservation principals and adopts water conservation as a citywide goal. Further, it provides that the City should conserve the water supply for the greatest public benefit, with particular regard to domestic use, sanitation, and fire protection. Chapter 7.38 includes regulations and restrictions on water use and mandates that the wasteful use of water should be eliminated.

Title 7: Health and Sanitation, Chapter 7.42. Title 7, Chapter 7.42, officially adopts the San Mateo Countywide Pollution Prevention Program Stormwater Management Plan and its provisions as City policy. The purpose and intent of Chapter 7.42 is to ensure the future health, safety, and general welfare of city citizens by eliminating non-stormwater discharges to the municipal separate storm sewer; controlling the discharge to municipal separate storm sewers from spills, dumping, or disposal of materials other than stormwater; and reducing pollutants in stormwater discharges to the maximum extent practicable. The intent of Chapter 7.42 is also to protect and enhance the water quality of the watercourses, water bodies, and wetlands in a manner pursuant to and consistent with the CWA.

To meet the requirements of Stormwater Ordinance 859 (Chapter 7.42), the City requires a Grading and Drainage (G&D) Plan whenever more than 500 square feet of the surface of a lot is to be affected by a building project. The goal of the G&D Plan is to manage possible sources of water pollution (source control), make sure site drainage does not affect neighboring properties (site design), and remove contaminants from the stormwater before it drains into the City street or storm drain system (treatment measures).

Title 12: Buildings and Construction, Chapter 12.42. Title 12, Chapter 42,[14] contains methods and provisions to prevent flood damage. Under Section 12.42.41, a development permit is required before construction or development activities in a flood-hazard area can begin. The standards of construction listed in Section 12.42.51 include anchoring, the use of flood-resistant construction materials and methods, and elevation and flood-proofing standards.

[14] City of Menlo Park. n.d. *City of Menlo Park Municipal Code*. Title 12: Buildings and Construction, Chapter 12.42: Flood Damage Prevention. Passed August 23, 2011. Available: <http://www.codepublishing.com/CA/menlopark/>. Accessed: August 31, 2015.

City of Menlo Park General Plan

The following goal within the Open Space/Conservation Element of the City's General Plan is relevant to the Project.

> **Goal OSC5:** *Ensure Healthy Air Quality and Water Quality.* Enhance and preserve air quality in accord with state and regional standards, and encourage the coordination of total water quality management, including both supply and wastewater treatment.

The following goal and policies from the Safety Element[15] of the City's General Plan pertain to the Project.

> **Goal S1:** *Minimize risk to life and damage to the environment and property from natural and human-caused hazards and ensure community emergency preparedness and a high level of public safety services and facilities.* The following safety goals are related to Flood Control, Tsunami, and Dam Safety Policies:
>
> *Policy S1.21, Flood and Tsunami Hazard Planning and Mapping*. Consider the threat of flooding and tsunamis in planning and management practices to minimize risk to life, the environment, and property and maintain up-to-date tsunami hazard zone maps and flood maps as new information is provided by FEMA and other regional agencies. Modify land use plans in areas where tsunamis and flooding are hazards, and permit only uses that will sustain acceptable levels of damage and not endanger human lives in the event of inundation.
>
> *Policy S1.22, Flood Damage Prevention*. Continue to apply standards for any construction projects (new structures and existing structures proposed for substantial improvement) in areas of special flood hazard in accordance with FEMA and the Flood Damage Prevention Ordinance, including the use of flood-resistant construction materials and construction methods that minimize flood damage. Locate new essential public facilities outside of flood zones, such as City operations facilities, police and fire stations, and hospitals, to the extent feasible.
>
> *Policy S1.26, Erosion and Sediment Control.* Continue to require the use of best management practices for erosion and sediment control measures with proposed development in compliance with applicable regional regulations.
>
> *Policy S1.27*, *Regional Water Quality Control Board (RWQCB) Requirements*. Enforce stormwater pollution prevention practices and appropriate watershed management plans in the RWQCB general National Pollutant Discharge Elimination System requirements, the San Mateo County Water Pollution Prevention Program, and the City's Stormwater Management Program. Revise, as necessary, City plans so they integrate water quality and watershed protection with water supply, flood control, habitat protection, groundwater recharge, and other sustainable development principles and policies.
>
> *Policy S1.28, Sea-Level Rise.* Consider sea-level rise in siting new facilities or residences within potentially affected areas.

The following policy from the Land Use Element of the City's General Plan pertains to the Project.

> *Policy LU-7.7, Hazards.* Avoid development in areas with seismic, flood, fire, and other hazards to life or property when potential impacts cannot be mitigated.

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[15] City of Menlo Park. 1976. *City of Menlo Park General Plan*. Seismic Safety and Safety Element. Adopted June 22, 1976.

ConnectMenlo General Plan Update. The City's General Plan (Land Use and Circulation Elements) and M-2 Area Zoning Update, also known as ConnectMenlo, is under way. Although not yet adopted, the following draft goals and policies in ConnectMenlo pertain to the Project and are identified for informational purposes.

> *Program LU-6.H, SAFER Bay Process.* Coordinate with the SAFER Bay process so that the Menlo Park community's objectives for sea-level rise/flood protection, ecosystem protection, and recreation are adequately taken into consideration.
>
> *Program LU-6.I, Sea-Level Rise.* Establish requirements based on state sea-level rise policy guidance for development projects of a certain minimum scale in areas potentially affected by sea-level rise to ensure protection of occupants and property from flood and other potential effects. Prior to establishment of a suite of program measures, require that new development construct buildings with a base flood elevation that takes into account sea-level rise.

Environmental Setting

Climate and Topography

The city has a Mediterranean climate, characterized by dry, relatively cool summers and wet, mild winters. The city receives an average annual rainfall of approximately 15.4 inches per year, with most of the rainfall occurring from November through April.[16]

The Project covers a total area of approximately 58 acres (approximately 2,526,500 square feet). The Project area is relatively flat, and elevations on the site range from 7 to 10.5 feet North American Vertical Datum (NAVD). Some portions of the site have been graded to accommodate storm drain facilities. Structures on the site are surrounded by paved parking lots, driving lanes, and landscaped areas. There are no adjacent hillsides.

Surface Water Hydrology

Regional

The Project site is located within the alluvial fan of the lower San Francisquito Creek watershed. Tidal mudflats and marshes in the San Francisco Bay (Bay), the Don Edwards Bay National Wildlife Refuge (Refuge), Ravenswood Slough, and the former salt ponds[17] (some of which are within the Refuge) are located across Bayfront Expressway/State Route 84 (Bayfront Expressway) and to the north. The Project site is located approximately 250 feet inland from the Refuge and approximately 1 mile inland from Lower San Francisco Bay. Major surface waters in the Project vicinity include the Atherton Channel (also known as Atherton Creek) to the west, Flood Slough to the northwest, Ravenswood Slough to the north, San Francisquito Creek to the southeast, and Lower San Francisco Bay to the east. The Atherton Channel is less than one mile west of the Project site. It is an alternating earth- and concrete-lined channel that carries flow from the upper reaches of Atherton Creek to Flood Slough. Flood Slough is one of several sloughs that run through the salt ponds and salt marshes north of the Bayfront Expressway. It drains into the Lower San Francisco Bay. Levees are located throughout the salt ponds. San Francisquito

[16] Western Regional Climate Center. n.d. *Palo Alto, California Monthly Total Precipitation (inches) (046646)*. Available: <http://www.wrcc.dri.edu>. Accessed: September 1, 2015.

[17] The former salt ponds are the subject of a forthcoming restoration project.

Creek is approximately 1.7 miles south of the Project area. It is a natural channel that flows into the Bay and serves as a boundary between San Mateo and Santa Clara Counties. Ravenswood Slough is a wetland feature located less than one mile northeast of the Project site that flows into the Bay.

Local

The Project site is underlain by Bay fill and historic saltwater or brackish water marshes that were filled in the 1960s to create more land for development. The site is paved, landscaped, or otherwise graded and therefore considered to be developed or urbanized.

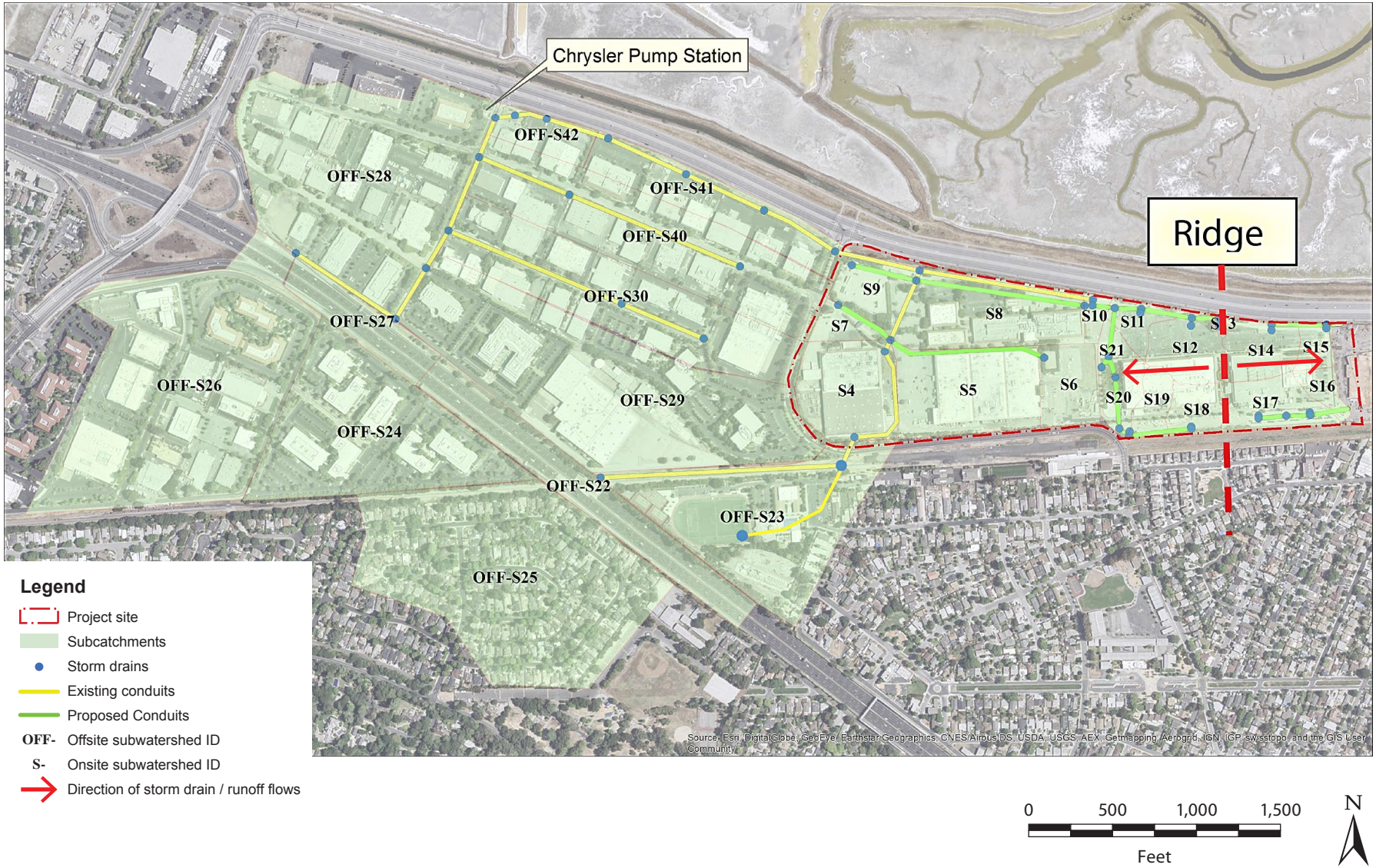
For purposes of the Project Hydrologic and Hydraulic Study Report prepared by WRECO in March 2016,[18] the Project site was divided into 18 sub-watersheds that contribute to the existing drainage system (see Figure 3.10-1), with sub-watershed areas varying from less than 1 acre to 10 acres in size. These sub-watersheds are located in urbanized districts that are approximately 86 percent impervious cover. Generally, the slopes of watersheds are mild (0.4 percent), with the maximum elevation of the proposed surface grading being 12.75 feet near the ridge shown in Figure 3.10-1.

The existing drainage system for the Project area receives overland flows from the site and includes pipes, drainage inlets, and other storm drain facilities, as shown in Figure 3.10-1. The existing, along with the proposed, private storm drains are also shown in Figure 3.10-2. The existing storm drain system also receives offsite stormwater through drainage pipes at the various storm drain locations along the existing conduit lines shown in Figure 3.10-1.[19] The portion of the Project site with the highest elevation is located along a ridge located in the eastern portion of the Project site, as shown by a dotted red line and labeled "ridge" in Figure 3.10-1. This ridge and surrounding topography help define existing drainage patterns within the Project site. In the portion of the sub-watersheds near the ridge, stormwater runoff is conveyed primarily as overland flow for a short period until it enters the storm drain system. Stormwater on the west side of the ridge would be collected in the proposed storm drain network and eventually flow to the Chrysler pump station. Stormwater on the east side of the ridge would be collected in existing or proposed storm drainage systems that discharge to connecting drainage systems.[20] The Chrysler pump station discharges into a large concrete drainage ditch. The ditch is owned by the California Department of Transportation and located outside of the Project boundary on the south side of Bayfront Expressway. Flow from this drainage ditch empties into Flood Slough, one of many sloughs that run through the salt ponds and salt marsh flats north of the Bayfront Expressway and interact with flow from the Bay. After passing through the salt marsh flats for approximately three miles (including channel meanders), Flood Slough drains into the Bay.

[18] WRECO. 2016. *Hydrologic and Hydraulic Study Report for Facebook Menlo Park West Campus, Menlo Park, California*. March 2016.

[19] WRECO. 2016. *Hydrologic and Hydraulic Study Report for Facebook Menlo Park West Campus, Menlo Park, California*. March 2016.

[20] WRECO. 2016. *Hydrologic and Hydraulic Study Report for Facebook Menlo Park West Campus, Menlo Park, California*. March 2016.



Legend

- Project site
- Subcatchments
- Storm drains
- Existing conduits
- Proposed Conduits
- OFF- Offsite subwatershed ID
- S- Onsite subwatershed ID
- Direction of storm drain / runoff flows

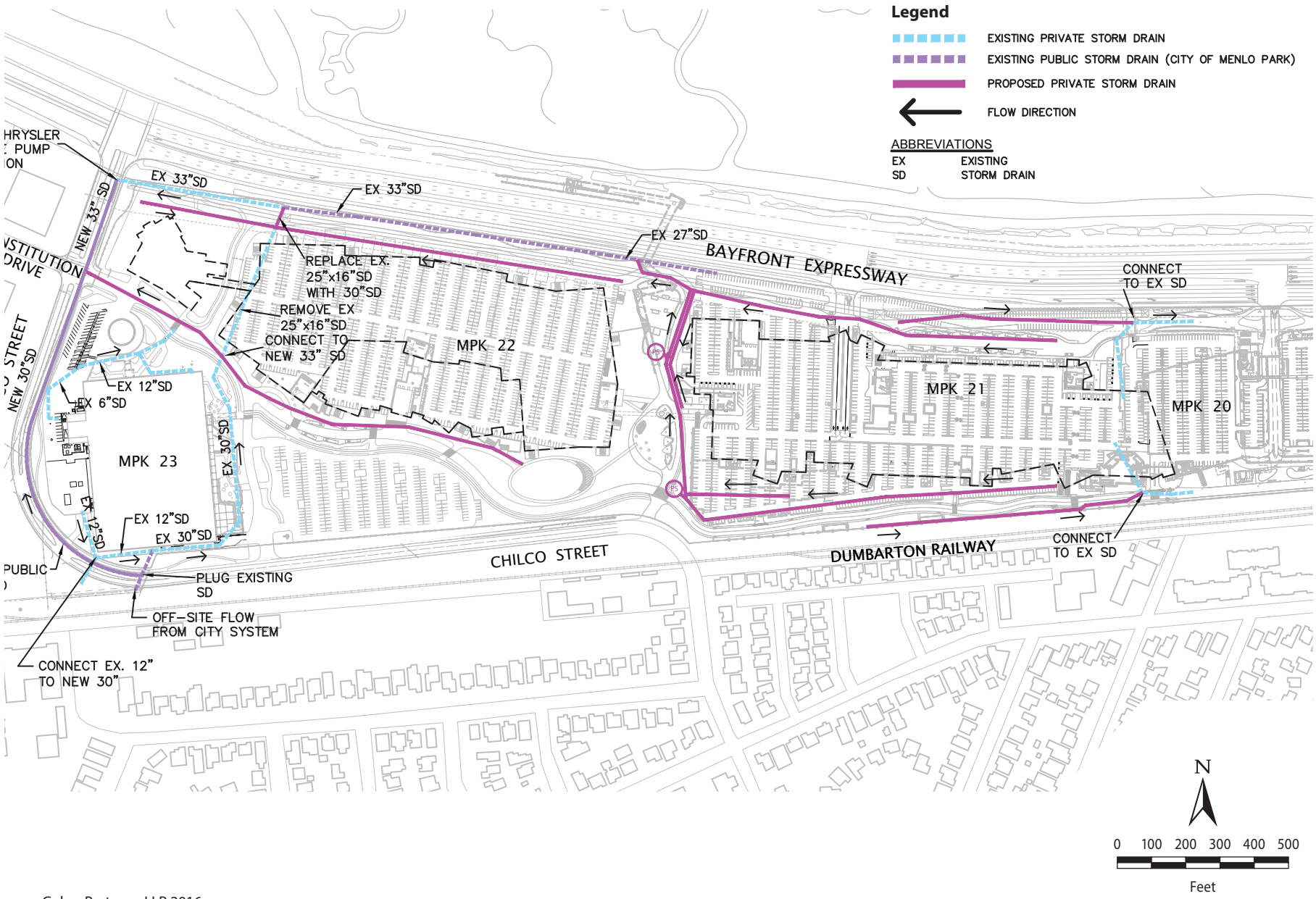
0 500 1,000 1,500
Feet

N

Source: WRECO 2016.

Graphics ... 00296.15 (4-15-2016)

Figure 3.10-1
Subwatersheds Delineated for the Project Area
Facebook Campus Expansion Project Draft EIR



Source: Gehry Partners, LLP 2016.

Graphics ... 00296.15 (3-31-2016)

Figure 3.10-2
Existing and Proposed Storm Drain System
Facebook Campus Expansion Project Draft EIR

Water Quality

Surface Water

The Basin Plan specifies the following beneficial uses that apply to the Lower San Francisco Bay.[21]

- Industrial service water supply (IND)
- Commercial and sport fishing (COMM)
- Shellfish harvesting (SHELL)
- Estuarine habitat (EST)
- Fish migration (MIGR)
- Preservation of rare and endangered species (RARE)
- Fish spawning (SPWN)
- Wildlife habitat (WILD)
- Water-contact recreation (REC1)
- Noncontact water-contact recreation (REC2)
- Navigation (NAV)

Water quality objectives for the Lower San Francisco Bay are shown in Table 3.10-1. The water quality objectives are general objectives established for the region. Table 3.10-2 shows 303(d) listed impairments for the Lower San Francisco Bay region, based on the 2010 California Integrated Report.[22]

Table 3.10-1. Water Quality Objectives for Surface Waters in the Project Area

Constituent	Water Quality Objective
Bacteria	Various concentrations, based on designated beneficial use.
Bioaccumulation	Controllable water quality factors shall not cause a detrimental increase in concentrations of toxic substances found in bottom sediments or aquatic life.
Biostimulatory substances	Waters shall not contain biostimulatory substances in concentrations that promote aquatic growths to the extent that such growths cause nuisance or adversely affect beneficial uses.
Color	Waters shall be free of coloration that causes nuisance or adversely affects beneficial uses.
Dissolved oxygen	For nontidal waters, coldwater habitat: 7.0 mg/l minimum. The median dissolved oxygen concentration for any 3 consecutive months shall not be less than 80 percent of the dissolved oxygen content at saturation.
Floating material	Waters shall not contain floating material, including solids, liquids, foams, and scum, in concentrations that cause nuisance or adversely affect beneficial uses.
Oil and grease	Waters shall not contain oils, greases, waxes, or other materials in concentrations that result in a visible film or coating on the surface of the water or on objects in the water, that cause nuisance, or that otherwise adversely affect beneficial uses.

[21] San Francisco Bay Regional Water Quality Control Board. 2011. *San Francisco Bay Basin (Region 2) Water Quality Control Plan (Basin Plan).* Originally published January 18, 2007. Last updated 2011.

[22] State Water Resources Control Board. 2011. *2010 Integrated Report* (Clean Water Act Section 303(d) List/305(b) Report). Last updated 2011. Available: <http://www.waterboards.ca.gov/water_issues/programs/tmdl/integrated2010.shtml?wbid=CAR403310002005091817523 3>. Accessed: August 31, 2015.

Constituent	Water Quality Objective
Population and community ecology	Waters shall be maintained free of toxic substances in concentrations that are lethal to or that produce significant alterations in population or community ecology or receiving water biota. In addition, the health and life history characteristics of aquatic organisms in waters affected by controllable water quality factors shall not differ significantly from those for the same waters in areas unaffected by controllable water quality factors.
pH	Must be maintained between 6.5 and 8.5 and shall not cause changes greater than 0.5 units in normal ambient pH levels.
Radioactivity	Radionuclides shall not be present in concentrations that result in the accumulation of radionuclides in the food web to an extent that presents a hazard to human, plant, animal, or aquatic life.
Salinity	Controllable water quality factors shall not increase the total dissolved solids or salinity of waters of the state so as to adversely affect beneficial uses, particularly fish migration and estuarine habitat.
Sediment	Suspended sediment load and suspended sediment discharge rate of surface waters shall not be altered in such a manner as to cause nuisance or adversely affect beneficial uses. Controllable water quality factors shall not cause a detrimental increase in the concentrations of toxic pollutants in sediments or aquatic life.
Settleable material	Waters shall not contain substances in concentrations that result in the deposition of material that cause nuisance or adversely affect beneficial uses.
Suspended material	Waters shall not contain suspended material in concentrations that cause nuisance or adversely affect beneficial uses.
Sulfide	All water shall be free from dissolved sulfide concentrations above natural background levels.
Tastes and odors	Waters shall not contain taste- or odor-producing substances in concentrations that impart undesirable tastes or odors to fish flesh or other edible products of aquatic origin, that cause nuisance, or that adversely affect beneficial uses.
Temperature	Enclosed bays and estuaries: Objectives are specified in the Water Quality Control Plan for Control of Temperature in the Coastal and Interstate Waters and Enclosed Bays of California. Surface waters: The natural receiving water temperature of inland surface waters shall not be altered unless it can be demonstrated to the satisfaction of the RWQCB that such alteration in temperature does not adversely affect beneficial uses. The temperature of any cold or warm freshwater habitat shall not be increased by more than 5°F (2.8°C) above natural receiving water temperature.
Toxicity	All waters shall be maintained free of toxic substances in concentrations that are lethal to or that produce other detrimental responses in aquatic organisms.
Turbidity	Waters shall be free of changes in turbidity that cause nuisance or adversely affect beneficial uses. Increases from normal background light penetration or turbidity relatable to waste discharge shall not be greater than 10 percent in areas where natural turbidity is greater than 50 NTU.
Unionized ammonia	Lower San Francisco Bay: The discharge of wastes shall not cause receiving waters to contain concentrations of un-ionized ammonia in excess of 0.4 mg/l as nitrogen.
Chemical constituents	Surface waters shall not contain concentrations of chemical constituents in amounts that adversely affect any designated beneficial use. Objectives for specific chemical constituents are listed in the San Francisco Bay RWQCB Basin Plan.

Source: San Francisco Bay Regional Water Quality Control Board, 2015.
mg/L = milligrams per liter
NTU = nephelometric turbidity unit

Table 3.10-2. Overview of Water Quality Impairments for the Lower San Francisco Bay

Listed Impairments Per 2010 303(d) List	Potential Sources	EPA TMDL Completion
Chlordane	Nonpoint source	Est. 2013
DDT (dichlorodiphenyltrichlorothane)	Nonpoint source	Est. 2013
Dieldrin	Nonpoint source	Est. 2013
Dioxin compounds (including 2,3,7,8-TCDD)	Atmospheric deposition	Est. 2019
Furan compounds	Atmospheric deposition	Est. 2019
Invasive species	Ballast water	Est. 2019
Mercury	Atmospheric deposition, industrial point sources, municipal point sources, natural sources, nonpoint sources, resource extraction	2008
PCBs (polychlorinated biphenyls) and dioxin-like PCBs	Unknown nonpoint source	Est. 2008
Trash	Illegal dumping and urban runoff/storm sewers	Est. 2021

Source: State Water Resources Control Board, 2011.
TCDD = tetrachlorodibenxodioxin
EPA = U.S. Environmental Protection Agency
TMDL = total maximum daily load

Water quality in a typical surface water body is influenced by processes and activities that take place within the watershed. The quality of the stormwater runoff from the Project site and surrounding development is typical of urban watersheds were water quality is affected primarily by discharges from both point and nonpoint sources. Point and nonpoint sources include winter storms, overland flow, exposed soil, roofs, parking lots, and streets. Water quality in the Project vicinity is directly affected by stormwater runoff from adjacent streets and properties that deliver fertilizers, pesticides, automobile and traffic pollutants (e.g., oil, grease, metals), sediment with associated attached pollutants from soil erosion, trash, and other pollutants.

Constituents or pollutants in stormwater runoff vary with surrounding land uses, impervious surface area, and topography as well as with the intensity and frequency of rainfall or irrigation. Stormwater runoff generated at the onset of the wet season, or the "first-flush," typically contains the highest pollutant concentrations. The Project site is located within in a developed area of the city, and the majority of the ground surface is covered by pavement (roads and parking lots) and structures (office and commercial buildings). Street surfaces are the primary source of pollutants in stormwater runoff in urban areas.

Common sources of stormwater pollution in urban areas include construction sites, parking lots, large landscaped areas, and household and industrial sites. Grading and earthmoving activities associated with new construction can accelerate soil erosion. Grease, oil, hydrocarbons, and metals deposited by vehicles and heavy equipment can accumulate on streets and paved parking lots and be carried into storm drains by runoff. Polychlorinated biphenyls (PCBs) are also listed as 303(d) impairments in the

Lower San Francisco Bay. PCBs can be found in automobile engines and other sources common in urban areas. Pesticides, herbicides, fungicides, and fertilizers used for landscape maintenance are washed into storm drains when irrigation exceeds the rate of soil infiltration and plant uptake or when these chemicals are applied in excess. As shown in Table 3.10-2, the pesticides of chlordane, DDT (no longer permitted for use), and dieldrin are listed as 303(d) impairments in the Lower San Francisco Bay. Paints, solvents, soap products, and other toxic materials may be inadvertently or deliberately deposited in storm drains in residential and industrial areas. Trash is also listed as a 303(d) impairment in Table 3.10-2. Trash can threaten aquatic life and recreational beneficial uses designated by the Basin Plan. Trash and litter can collect in storm drain inlets and ultimately be discharged into nearby waterways.

Groundwater

Groundwater Hydrology

Hydrogeology. The Project area is located within the San Mateo subbasin of the larger Santa Clara Valley groundwater basin (Department of Water Resources [DWR] Basin Number 2-9.03). The San Mateo subbasin is bound by the Santa Cruz Mountains to the west, the Bay to the north and east, San Francisquito Creek to the south, and the Westside groundwater basin to the north. The subbasin's underlying water-bearing formations include Quaternary and Plio-Pleistocene alluvial deposits, which are composed of gravel, sand, silt, and clay. A relatively shallow water table aquifer overlies confined and semi-confined aquifers near the margins of the Bay, with most wells drawing from deeper deposits. The direction of groundwater flow is generally to the east and north. The basin is composed of alluvial fan deposits formed by tributaries to the Bay, which drain the basin. A relatively shallow water table aquifer overlies confined and semi-confined aquifers.

Recharge of the subbasin occurs through infiltration into streambeds and through infiltration of precipitation on the valley floor. Little is known about the actual storage capacity of the subbasin or existing groundwater levels, but it is estimated that groundwater levels have rebounded somewhat since the early twentieth century when groundwater was used as the primary source for drinking and irrigation water. Groundwater at the Project site was measured from borings, as described in the Project Geotechnical Report. Groundwater within and around the Project site was found at relatively shallow depths, ranging from 6 to 9 feet below ground surface (bgs). Other recent studies at nearby sites have encountered a similar depth to groundwater of 8 feet bgs and somewhat less-shallow depths of 9.5 to 15.5 feet bgs. Fluctuations in groundwater level depend on season, tidal fluctuation, regional fluctuation, and other factors.[23,24] The direction of groundwater flow is generally to the east and north.[25]

Groundwater Quality. In general, groundwater quality in the Santa Clara Valley groundwater basin is good. Throughout most of the basin, groundwater quality is suitable for most urban and agricultural uses, with the exception of a few local impairments. The primary constituents of concern are high Total

[23] Cornerstone Earth Group. 2014. *Geotechnical Feasibility Investigation*. Chilco Road Parcels, 300 Constitution Drive, Menlo Park, California. Project Number 254-8-3. July 22. Prepared for Hibiscus Properties, LLC, Menlo Park, CA. Walnut Creek, CA.

[24] Cornerstone Earth Group. n.d. *Geotechnical Investigation*. Building MPG 21, 307, 308, and 309 Constitution Drive, Menlo Park, California. Project Number 254-8-7. Prepared for Hibiscus Properties, LLC, Menlo Park, CA. Walnut Creek, CA.

[25] City of Menlo Park. 2012. *Menlo Park Facebook Campus Project Final Environmental Impact Report*. State Clearinghouse No. 2011042073. Prepared by Atkins. April.

Dissolved Solids (TDS), nitrate, boron, and organic compounds. Water from public supply wells meets state and federal drinking water standards without treatment.[26] However, there are some known concerns. Near the Bay margin, historic groundwater overdraft has created areas of saltwater intrusion where groundwater salinity is elevated by contact with seawater that infiltrates subsurface aquifers.[27] The high level of salt in the native soils is also indicative of high concentrations of salts in groundwater. The high level of salt in the native soils has deteriorated the metal components of the irrigation system over time, resulting in leaks that cause loss of water. Also, when used for irrigation, some wells are impaired with soil problems because of high concentrations of sodium.[28] The groundwater tends to be quite hard (high mineral content) and have high concentrations of iron and manganese.[29]

Designated beneficial uses identified for the Santa Clara Valley groundwater basin are as follows.[30]

- Municipal and domestic supply (MUN)
- Industrial process supply (PROC)
- Industrial service supply (IND)
- Agricultural supply (AGR)

Although MUN is a beneficial use of the Santa Clara Valley groundwater basin, groundwater beneath the Project site itself is not considered to be a source of drinking water, according to the San Francisco RWQCB, because of the elevated salinity in the groundwater.[31] Groundwater objectives consist primarily of narrative objectives combined with a limited number of numerical objectives. The primary groundwater objective is the maintenance of existing high-quality groundwater. At a minimum, groundwater shall not contain concentrations of bacteria, chemical constituents, radioactivity, or substances that produce taste and odor in excess of the objectives unless naturally occurring background concentrations are greater.

Groundwater contamination can be the result of historical industrial activities and soil contamination or can originate from underground storage tank releases of hazardous materials. Raychem (now part of TE Connectivity [TE]) purchased the Project site during the mid-1960s and began development of the existing office and manufacturing buildings. A former pilot plant operated onsite and contained manufacturing facilities for polymers, antioxidants, paints, adhesives, epoxies, mastics, PCBs, coatings,

[26] California Department of Water Resources. 2003. *California's Groundwater*. Bulletin 118. Update 2003. San Francisco Bay Hydrologic Region. Available: <http://www.water.ca.gov/pubs/groundwater/bulletin_118/california's_groundwater__bulletin_118_-_update_2003_/bulletin118_2-sf.pdf>. Accessed: August 31, 2015.

[27] California Department of Water Resources. 2003. *California's Groundwater*. Bulletin 118. Update 2003. San Francisco Bay Hydrologic Region. Available: <http://www.water.ca.gov/pubs/groundwater/bulletin_118/california's_groundwater__bulletin_118_-_update_2003_/bulletin118_2-sf.pdf>. Accessed: August 31, 2015.

[28] California Department of Water Resources. 2004. *Santa Clara Valley Groundwater Basin*. Bulletin 118. Available: <http://water.ca.gov/groundwater/bulletin118/basindescriptions/2-09.02.pdf>. Accessed: August 31, 2015.

[29] California Department of Water Resources. 2003. *California's Groundwater*. Bulletin 118. Update 2003. San Francisco Bay Hydrologic Region. Available: <http://www.water.ca.gov/pubs/groundwater/bulletin_118/california's_groundwater__bulletin_118_-_update_2003_/bulletin118_2-sf.pdf>. Accessed: August 31, 2015.

[30] San Francisco Bay Regional Water Quality Control Board. 2011. San Francisco Bay Basin (Region 2) Water Quality Control Plan (Basin Plan). Originally published January 18, 2007. Last updated 2011.

[31] City of Menlo Park. 2012. *Menlo Park Facebook Campus Project Final Environmental Impact Report*. State Clearinghouse No. 2011042073. Prepared by Atkins. April.

and gels.[32] According to GeoTracker, there are no leaking underground storage tank (LUST) cleanup sites, but there is a history of soil contamination. Therefore, in 1996, Raychem entered into a Corrective Action Consent Agreement[33] with the California Department of Toxic Substances Control (DTSC) to perform Resource Conservation and Recovery Act (RCRA) Facility Investigation (RFI) activities on the Raychem site. Prior operations at the Project site[34] resulted in significant releases of hazardous substances, including elevated levels of volatile organic compounds (VOCs), semi-volatile organic compounds, metals, petroleum hydrocarbons, PCBs, and polychlorinated dioxins and dibenzofurans. The investigation determined that the groundwater contamination was limited to the Raychem site and VOC concentrations would naturally attenuate (i.e., reduce) over time. Subsequent groundwater modeling also predicted minimal movement of PCB concentrations in groundwater over time.[35] DTSC determined in November 2006 that the West Campus had been remediated to a level that is acceptable for commercial and industrial use. Because hazardous materials remain in the soil and groundwater, DTSC determined that the recordation of a land use covenant (LUC) to restrict property uses was necessary for the protection of human health and the environment. See Section 3.11, *Hazards and Hazardous Materials,* for more information.

Flooding

As shown in Figure 3.10-3, the majority of the Project site is within the FEMA 100-year floodplain and subject to tidal flooding from the Bay (Zone AE). [36] The southwest corner of the Project site is mapped as being within Flood Zone X, which is outside the 500-year floodplain. Areas within the 100-year flood-hazard area are subject to a 100-year flood, which means that, in any given year, the risk of flooding in the designated area is one percent. Areas within the 500-year flood-hazard area are subject to a 500-year flood, which means that, in any given year, the risk of flooding is 0.2 percent.

Sea-Level Rise

Projected SLR, as an effect of climate change, is expected to increase the number of areas that experience coastal flooding along the Bay in the future. Coastal and low-lying areas, such as the Project site, are particularly vulnerable to future SLR. More specifically, SLR is a concern for the future, particularly in combination with future storm events and coastal flooding. A scenario with 100-year high tides, taking into account SLR over a 50- or 100-year horizon, would dramatically increase the risk of flooding in the Project vicinity.

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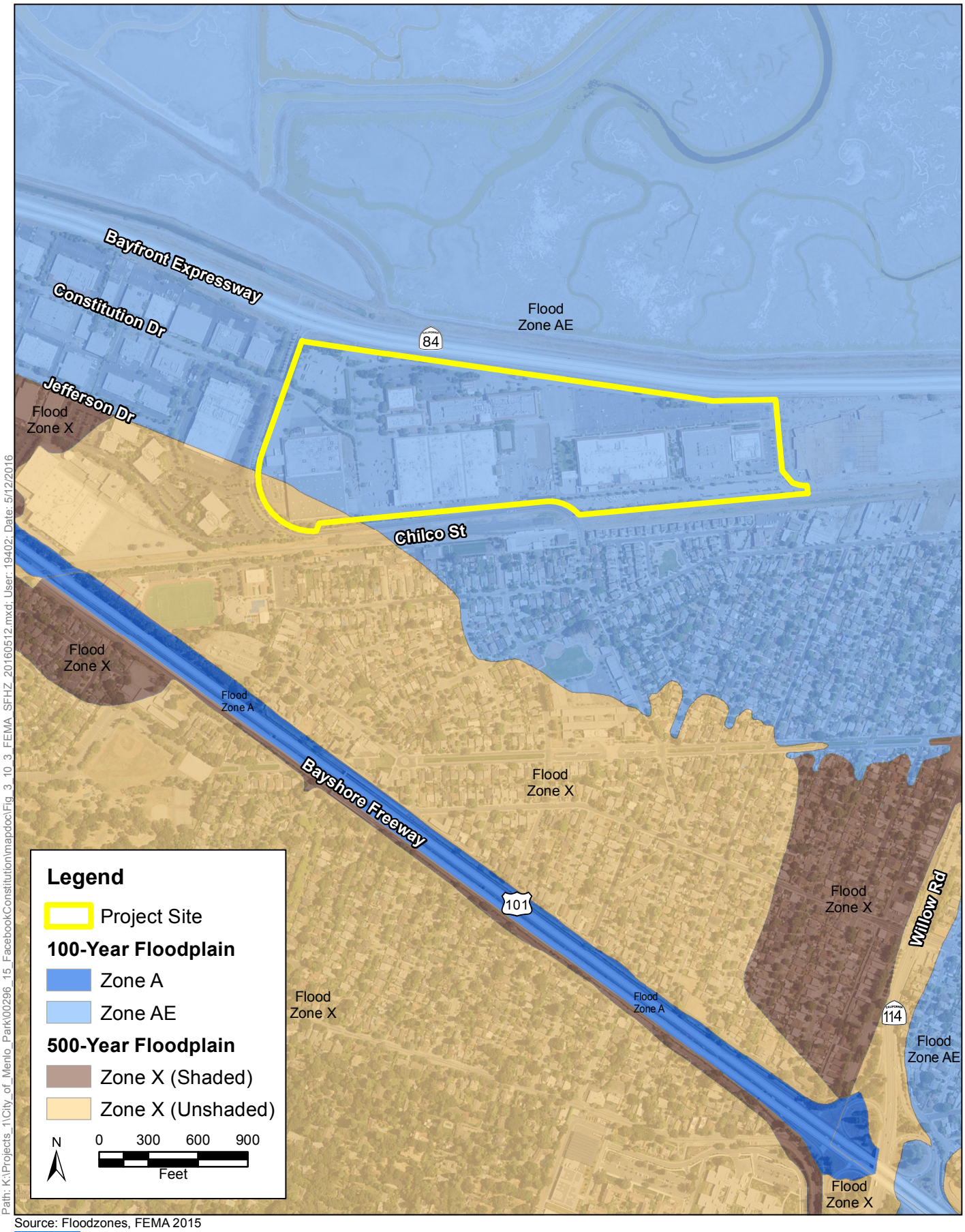
[32] Cornerstorne Earth Group. 2014. *Phase I Environmental Site Assessment and Preliminary Soil and Soil Vapor Quality Investigation.* Prepared for Hibiscus, LLC. July 31.

[33] A Corrective Action Consent Agreement is a voluntary agreement between a lead agency and responsible party in which the company commits to investigate the nature and extent of contamination at and surrounding a site governed by the RCRA and implement corrective actions (i.e., cleanup) as necessary.

[34] The Facebook West Campus was formerly owned Tyco Electronics (TE Connectivity), which purchased it from Raychem in the late 1990s. Raychem Corporation (Raychem) operated a facility that manufactured high-tech plastic and electrical insulation products and engaged in the management of hazardous waste pursuant to a hazardous waste facility permit. The Facebook Menlo Park West Campus (now known as Building 20) is the site designation for the east side of the former Raychem/Tyco facility that was purchased by Facebook in 2011.

[35] GRA Associates Inc. 2002. *RFI Report – Soil Investigation (Final), Volume I (Text), Raychem/Tyco Facility – Areas 1 through 5 (Western and Central Portions of Site), 300 Constitution Drive, Menlo Park, California 94025, EPA ID No. CAD009125527*. June.

[36] Federal Emergency Management Agency. 2015. *National Flood Hazard Layer (NFHL) Status.* Item ID 06081C-NFHL. August 5, 2015. Available: < http://www.floodmaps.fema.gov/NFHL/status.shtml>. Accessed: September 1, 2015.



Path: K:\Projects_1\City_of_Menlo_Park\00296_15_FacebookConstitution\mapdoc\Fig_3_10_3_FEMA_SFHZ_20160512.mxd; User: 19402; Date: 5/12/2016

Source: Floodzones, FEMA 2015

Figure 3.10-3
FEMA Flood Zones within the Project Vicinity
Facebook Campus Expansion Project Draft EIR

Table 3.10-3 provides a summary of SLR projections, as provided by state guidance.

Table 3.10-3. Sea-Level Rise Projections for Areas South of Cape Mendocino

Time Period	CO-CAT SLR Guidance Document (South of Cape Mendocino)		
	Feet[a]	Inches	Centimeters[a]
2000–2030	0.13 to 0.98	1.56 to 11.76	4 to 30
2000–2050 (mid-century)	0.39 to 2.00	4.68 to 24.00	12 to 61
2000–2100 (end of century)	1.38 to 5.48	16.56 to 65.76	42 to 167

Sources: CO-CAT 2013 for South of Cape Mendocino; San Francisco Bay Conservation and Development Commission, 2011.
[a] Official projections reported in these units.

According to the U.S. Geological Survey (USGS) National Elevation dataset, the Project site is located in an area that is subject to future SLR inundation.[37] SLR could range from 1.38 to 5.48 feet by 2100 (compared to 2000 levels). SLR, in combination with daily tides, could result in more substantial inundation at the upper end of the SLR ranges and in the latter part of the century (see Table 3.10-4). High-tide events, combined with the effects of SLR, would produce the greatest inundation and potential damage from flooding. Table 3.10-5 provides elevations for potential future inundation at the Project site, combining the FEMA 100-year flood event and projected SLR elevations.

Table 3.10-4. Elevations of Potential Future Inundation during Daily Tides with Sea-Level Rise

Time Period	CO-CAT SLR Projection (feet)[a]		Mean Higher High Water + SLR (feet; NAVD 88)[b]		Amount of Potential Daily Inundation at Project Site w/SLR (feet)[c]	
	Lower End	Upper End[d]	Lower End	Upper End	Lower End	Upper End
2000–2030	+0.13	+0.98	7.33	8.18	0.33	1.18
2000–2050 (mid-century)	+0.39	+2.00	7.59	9.20	0.59	2.20
2000–2100 (end of century)	+1.38	+5.48	8.58	12.68	1.58	5.68

[a] CO-CAT 2013.
[b] Daily mean higher high water (MHHW), 1983–2001 = 7.2 feet North American Vertical Datum (NAVD 88). NOAA. No date. Tidal Datum Information. Last accessed: 05/12/16. Available: http://www.ngs.noaa.gov/Tidal_Elevation/diagram.jsp?PID=HT0308&EPOCH=1983-2001).
[c] Elevations on the site range from 7 to 10.5 feet (NAVD 88). For these calculations, the lower site elevation of 7 feet was used to provide a conservative estimate.
[d] The upper end of the SLR projections represents the most conservative estimate of SLR inundation levels.

[37] U. S. Geology Survey. 2013. *Potential Inundation due to Rising Sea Levels in the San Francisco Region*. Downloadable data layers. Last modified: May 6, 2013. Available: <http://cascade.wr.usgs.gov/data/Task2b-SFBay/data.shtm>. Accessed: September 2, 2015.

Table 3.10-5. Elevations of Potential Future Inundation during 100-year Flood Event with Sea-Level Rise

	CO-CAT SLR Projection (feet)[a]		SLR Projection + 100-year Flood Zone AE BFE (feet; NAVD 88)[b,c]		Amount of Potential Inundation at Project Site w/100-year Flood Event w/SLR (feet)[d]	
Time Period	**Lower End**	**Upper End[e]**	**Lower End**	**Upper End**	**Lower End**	**Upper End**
2000–2030	+0.13	+0.98	10.93	11.78	3.93	4.78
2000–2050 (mid-century)	+0.39	+2.00	11.19	12.80	4.19	5.80
2000–2100 (end of century)	+1.38	+5.48	12.18	16.28	5.18	9.28

[a] CO-CAT 2013.
[b] FEMA 2015.
[c] Static base flood elevation (BFE) for Zone AE = 10.8 feet (according to FEMA 2015 flood study).
[d] Elevations on the site range from 7 to 10.5 feet NAVD 88. For these calculations, the lower site elevation of 7 feet was used to provide a conservative estimate.
[e] The upper end of the SLR projections represents the most conservative estimate of SLR inundation levels.

Potential for Tsunami, Seiche, Mudflows

The Project site is not subject to flooding from tsunami or seiche or risks from mudflows or landslides. According to the State of California Tsunami Inundation Map for Emergency Planning (Redwood Point Quadrangle/Palo Alto Quadrangle), the Project site is not located within a tsunami inundation area.[38] However, the South Bay salt ponds adjacent to the Bay and portions of Flood and Ravenswood Sloughs, located approximately 0.6 mile to the northeast of the Project site, are located within designated tsunami inundation areas. Seiches occur in an enclosed or partially enclosed body of water, such as a lake or reservoir. There are no large bodies of freshwater, such as reservoirs or lakes, within the Project vicinity. In addition, the Bay is a large and open body of water with no immediate risk of seiches. Large waves generated in the Pacific Ocean, both sea and swell, undergo considerable refraction and diffraction upon passing through the Golden Gate, resulting in greatly reduced heights when they reach the Project site. Therefore, there is no risk of seiches affecting the Project site, and no further analysis is required. Because the Project site, as well as the majority of the city, is relatively flat, and the city is outside of the affected zones for earthquake-induced landslides or rainfall-inducted landslides,[39] no mudflows or debris slides are expected to occur within the Project site. More information on landslide potential is provided in Section 3.9 *Geology and Soils.*

[38] California Emergency Management Agency, University of Southern California, California Geological Survey. 2009. *Tsunamic Inundation Map for Emergency Planning*. State of California, County of San Mateo. Redwood Point Quadrangle/Palo Alto Quadrangle. June 15.
[39] Association of Bay Area Governments. n.d. *Resilience Program Hazard Map*. Available: <http://gis.abag.ca.gov/website/Hazards/?hlyr=femaZones>. Accessed: September 2, 2015.

Dam and Levee Failures

According to the ABAG online dam failure inundation maps, although portions of the city are within the Searsville and Searsville/Felt dam inundation zones, the Project site is not located within a dam inundation zone. There are no major reservoirs upstream of the Project site. There are no levees within or around the Project site because it is topographically isolated from nearby salt ponds and the Bay by the Bayfront Expressway.[40]

Environmental Impacts

This section describes the environmental impacts analysis related to hydrology and water quality resources for the Project. It describes the methods used to determine the impacts of the Project and lists the thresholds used to conclude whether an impact would be significant. Impacts are determined to be no impact (NI), less than significant (LTS), less than significant with mitigation (LTS/M), or significant and unavoidable (SU). Measures to mitigate (i.e., avoid, minimize, rectify, reduce, eliminate, or compensate for) significant impacts accompany each impact discussion, as needed.

Thresholds of Significance

In accordance with Appendix G of the California Environmental Quality Act (CEQA) Guidelines, the Project would be considered to have a significant effect if it would result in any of the conditions listed below.

- Violate any water quality standards or waste discharge requirements.
- Substantially deplete groundwater supplies or interfere substantially with groundwater recharge, resulting in a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level that would not support existing land uses or planned uses for which permits have been granted).
- Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner that would result in substantial erosion or siltation onsite or offsite.
- Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner that would result in flooding onsite or offsite.
- Create or contribute runoff water that would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff.
- Otherwise substantially degrade water quality.
- Place housing within a 100-year flood-hazard area, as mapped on a federal Flood-Hazard Boundary or FIRM or other flood-hazard delineation map.
- Place within a 100-year flood-hazard area structures that would impede or redirect floodflows.

[40] City of Menlo Park. 2012. *Menlo Park Facebook Campus Project Final Environmental Impact Report.* State Clearinghouse No. 2011042073. Prepared by Atkins. April.

- Expose people or structures to a significant risk of loss, injury, or death involving flooding, including flooding as a result of the failure of a levee or dam.
- Inundation by seiche, tsunami, or mudflow.

Methods for Analysis

All Project elements were analyzed by comparing baseline conditions, as described in the *Environmental Setting*, to conditions during construction and/or operations of the Project. Analysis focused on issues related to surface hydrology, flood hazards, groundwater supply, and surface and groundwater quality. The key construction-related impacts were identified and evaluated qualitatively based on the physical characteristics of the Project site and the magnitude, intensity, location, and duration of activities.

- **Surface Water Hydrology.** The surface water hydrology impact analysis considered changes in water bodies, impervious surfaces, and drainage patterns. Information on the change in impervious surface, runoff quantities, and drainage patterns was provided by the Project Sponsor. The analysis of changes in onsite water bodies involved a comparison of existing onsite hydrological conditions and new/modified conditions proposed as part of the Project, which were provided in the hydrology and hydraulics report prepared for the Project.
- **Flood Hazards.** The impact analysis for flood risk was conducted using FEMA mapping to determine the existing flood zone and information from the Project Sponsor regarding changes in the drainage system and layout that may affect flood risk.
- **Groundwater Supply.** Impacts on groundwater supply were analyzed using information from DWR Groundwater Bulletin 118, v4.1, and comparing existing sources of recharge versus Project-modified recharge capabilities. Recharge is determined by the ability of water to infiltrate into the soil. Although the extent of the groundwater aquifer is unknown within the Project site because of a lack of data from DWR, this analysis assumes that groundwater exists below the Project site.
- **Surface and Groundwater Quality.** Impacts of the Project on surface water and groundwater quality were analyzed using existing information on potential existing sources of pollution generated by activities such as vehicle use, building maintenance, pesticide use, trash disposal, and hazardous materials storage. These impacts were then compared to potential Project-related sources of pollution during Project construction, such as sediments and other construction materials, and during Project operation, such as vehicle use, building maintenance, pesticide use, trash disposal, and hazardous materials storage.

Impacts Not Evaluated in Detail

Housing within a 100-Year Flood-Hazard Area. As shown in Figure 3.10-3, the Project is within a 100-year floodplain and subject to tidal flooding (Flood Zone AE). However, the Project does not include a housing component. As such, implementation of the Project would not place housing within a 100-year flood-hazard area. There would be ***no impact*** related to placing housing within a 100-year flood-hazard area. This impact is not evaluated further.

Substantially Degrade Water Quality. As noted in Section 3.8 (*Biological Resources, Environmental Setting*), there are no ponds or wetlands on the Project site. There is a large concrete drainage ditch on the south side of the Bayfront Expressway adjacent to, but outside of, the Project site; it would not be affected by the Project. Because surface water features do not exist onsite, construction would not involve work within water features, and dredged and fill activities would not be necessary. ***No impact*** would result.

Seiche, Tsunami, or Mudflow Impacts. As previously described, the Project site is not subject to flooding from tsunami, seiche, or dam failure inundation. The Project area is not within a planned tsunami inundation area, as depicted on the Tsunami Inundation Map for Emergency Planning prepared by the California Emergency Management Agency and California Geological Survey. The potential for tsunami or seiche inundation or mudflow is low. South San Francisco Bay is located approximately 1 mile north of the Project site, and the Pacific Ocean is located approximately 16 miles to the west. There are no reservoirs adjacent to the Project area, and because of the shape and amount of open water in the Bay, the Project would not be prone to inundation by seiche. The Project area is not within a designated landslide area. Thus, the risk of slope failure, including seismically induced landslides and/or mudslides, at the Project site is judged to be low. Therefore, the Project would not be subject to mudflows, and no detailed analysis of these impacts is required. Therefore, there would be ***no impacts*** related to flooding by seiche, tsunami, or mudflow. This impact is not evaluated further.

Levees and Dams. Several levees are located along the Bay shoreline to protect facilities such as high-tech businesses and schools. However, there are no levees within the Project site. It is topographically isolated from nearby salt ponds and the Bay by the Bayfront Expressway. There are no major reservoirs immediately upstream of the Project site; therefore, the Project site is not subject to inundation from dam failure.[41] People or structures would not be exposed to flood impacts as a result of dam or levee failure.

Topics Provided for Informational Purposes

Recent court cases have concluded that an environmental impact report (EIR) need not evaluate the environment's effect on a project.[42] In one case that discussed the SLR issue directly, the California Second District Court of Appeals held that, although an EIR must analyze the environmental effects that may result from a project, an EIR is not required to examine the effects of the environment, such as SLR, on a project (see *Ballona Wetlands Land Trust v. City of Los Angeles*, 201 Cal. App. 4th 455). In its decision, the court called into question the validity of portions of the State CEQA Guidelines that require consideration of impacts of the environment on a project. The Ballona decision potentially eliminates the need for lead agencies to consider the impacts of climate change on proposed projects. The Ballona decision did not, however, call into question the State CEQA Guidelines amendments enacted in 2010 that establish how greenhouse gas emissions are to be analyzed and mitigated under CEQA.

Although the California Supreme Court denied review of the Ballona decision,[43] the issue of the environment's effect on a project was raised once again in *California Building Industry Association v. Bay Area Air Quality Management District* (*CBIA v. BAAQMD*), Supreme Court Case No. S213478.[44] The

[41] Association of Bay Area Governments. n.d. *Dam Failure Inundation Hazard Map for Menlo Park/Atherton/East Palo Alto.* Available: <http://www.abag.ca.gov/bayarea/eqmaps/damfailure/dfpickc.html>. Accessed: September 29, 2011.

[42] See *South Orange County Wastewater Authority v. City of Dana Point* (2011), 196 Cal. App. 4th 1604; *Ballona Wetlands Land Trust v. City of Los Angeles* (2011), 201 Cal. App. 4th 455; *Baird v. County of Contra Costa* (1995), 32 Cal. App. 4th 1464, 1468 (Baird); *City of Long Beach v. Los Angeles Unified School Dist.* (2009), 176 Cal. App. 4th 889 (Long Beach).

[43] On March 21, 2012, the California Supreme Court denied case review and depublication requests submitted by several environmental organizations.

[44] Review granted by the California Supreme Court on November 26, 2013. The issue to be resolved: "Under what circumstances, if any, does the California Environmental Quality Act (Public Resources Code Section 21000 et seq.) require an analysis of how existing environmental conditions will impact future residents or users (receptors) of a proposed project?"

Alameda County Superior Court stated that "the purpose of an EIR is to identify the significant effects of a project on the environment, not the significant effects of the environment on the project" and found that BAAQMD's June 2010 (updated in May 2011) air quality impact guidelines (Section 15126.2) were, in part, unauthorized by the CEQA statute and therefore invalid. The court, however, did not exclude all consideration of existing conditions from CEQA. An agency must "evaluate existing conditions in order to assess whether a project could exacerbate hazards that are already present." Although this is a large project, considering the cumulative and global nature of SLR, it is assumed that the Project would not exacerbate risks associated with SLR. Therefore, the following paragraph is presented for informational purposes only, and no significance determination is made from the analysis.

According to USGS, the Project site could be subject to SLR full inundation by 2100 (1.38 to 5.48 feet by 2100). As previously described, all newly constructed buildings would be elevated, which would help to prevent the potential flooding effects of SLR on the buildings themselves. The Project would involve the placement of podiums to elevate finished floor elevations and provide protection from the 100-year base flood elevation (BFE) plus 16 inches (or 1.33 feet)[45] of SLR and 12 inches (1 foot) for freeboard[46] by 2050.[47] The 16 inches would provide some protection from SLR inundation at the site, but this elevation is at the lower end of the projected end-of-century (2100) SLR elevation and is lower than the upper end of the mid-century (2050) SLR projection (see Table 3.10-3).

Impacts and Mitigation Measures

Impact WQ-1: Violation of Water Quality Standards or Waste Discharge Requirements. The Project could violate water quality standards or waste discharge requirements. (LTS/M)

Construction

Implementation of the Project would include construction activities such as site clearing and grading, new building construction, paving and repaving for parking lots, cut-and-fill activities, excavation, and the installation of landscaping. The Project would also include the demolition of seven existing onsite buildings and the construction of two new office buildings (Buildings 21 and 22) as well as the construction of a new hotel. These land-disturbing activities and the placement of stockpiles within proximity to storm drain inlets could result a temporary increase in sediment loads to the Lower San Francisco Bay. Sediment transport to local drainage facilities such as drainage inlets, culverts, and storm drains could also result in reduced stormflow capacity, resulting in localized ponding or flooding during storm events. Sediment can affect surface water quality through interference with photosynthesis, oxygen exchange, and the respiration, growth, and reproduction of aquatic species. Other pollutants, such as nutrients, trace metals, and hydrocarbons, can attach to sediment and be transported with sediment to downstream locations and degrade water quality. Land disturbance would occur across the Project site. The Project would remove approximately 25,548 cubic yards (cy) of recycled material and 1,022 cy of other material (e.g., soil, concrete, asphalt concrete, construction and demolition (C&D) debris [wood, metal roofing, steel work, etc.]) that would be disposed of at an offsite landfill.

[45] The hydrologic and hydraulic study report analyzed SLR impacts based on San Francisco Bay Conservation and Development Commission projections.

[46] Freeboard is a factor of safety usually expressed in feet above a flood level for purposes of floodplain management. "Freeboard" tends to compensate for the many unknown factors that could contribute to flood heights greater than the height calculated for a selected size flood and floodway conditions, such as wave action, bridge openings, and the hydrological effect of urbanization of the watershed.

[47] Facebook. August 3, 2015—communication or memo from the applicant in response to ICF data request.

The delivery, handling, and storage of construction materials and wastes (e.g., concrete debris), as well as the use of heavy construction equipment, could also result in stormwater contamination, and thereby affect water quality. Construction activities could involve the use of chemicals and the operation of heavy equipment, which could result in accidental spills of hazardous materials (e.g., fuel and oil) that could enter the groundwater aquifer or nearby surface water bodies from runoff or storm drains. Constituents in fuel, oil, and grease can be acutely toxic to aquatic organisms and/or bioaccumulate in the environment. All construction equipment and import material would be staged onsite. Staging areas or building sites can be sources of pollution because of the use of paints, solvents, cleaning agents, and metals during construction. Staging areas would be located on the southern, western, and northernmost portions of the Project site where several storm drains that lead to the Lower San Francisco Bay are located.

All Project construction activities would be subject to existing regulatory requirements. Permittees also must comply with the appropriate water quality objectives for the region. Because the land disturbance for the Project would be more than one acre, coverage under the Construction General Permit would be required. The Construction General Permit, as described above, contains standards to ensure that water quality is not degraded. As part of compliance with the Construction General Permit, standard erosion control measures and other BMPs would be identified in a SWPPP. These measures would be implemented during construction to reduce contamination and sedimentation in waterways. As a performance standard, BMPs for inclusion in the SWPPP would be required to represent the best available technology that is economically achievable and the best conventional pollutant control technology to reduce pollutants. Commonly practiced BMPs consist of a wide variety of measures, which are implemented to reduce pollutants in stormwater and other nonpoint-source runoff. These measures would include installing erosion control devices, such as silt fences, staked straw wattles, and geofabric to prevent silt runoff to storm drains or waterways. Topsoil and backfill would be stockpiled, protected, and replaced at the conclusion of construction activities. Disturbed soil would be revegetated as soon as possible with the appropriate selection and schedule for turf, plants, and other landscaping vegetation. No disturbed surfaces would be left without erosion control measures in place during the wet season, which generally occurs between October 1 and April 30.

Project construction is expected to occur in two phases over a period of 6 years (2016–2020). Therefore, some activities would occur during the wet season. Specific erosion and sediment control BMPs would be implemented for Project construction occurring during the wet season. Efforts would be made by the Project Sponsor to minimize the potential for large rain events to mobilize loose sediment during construction.

The SWPPP would include the following erosion- and sediment-control BMPs:

- Keep disturbed areas (areas of grading and related activities) to the minimum necessary for demolition or construction of the project.
- Keep runoff away from disturbed areas during grading and related activities.
- Stabilize disturbed areas as quickly as possible by vegetative, mechanical, and/or physical methods.
- Trap sediment before it leaves the site with such techniques as check dams, sediment ponds, or straw wattles, including perimeter protection.
- Use dirt and sediment tracking BMPs, including stabilized construction entrances and wheel washers.

- Implement routine street sweeping.
- Cover exposed soils and material stockpiles to prevent wind erosion.
- Use interceptor ditches, drainage swales, or detention basins to prevent storm runoff from transporting sediment into drainage ways and sediment-laden runoff from leaving any disturbed areas.
- Use landscaping and grading methods that lower the potential for downstream sedimentation (e.g., modified drainage patterns, longer flow paths, encouraging infiltration into the ground, and slower stormwater conveyance velocities).
- During the installation of the erosion and sediment transport control structures, the erosion control professional must be on the site to supervise the implementation of the designs and the maintenance of the facilities throughout the grading and construction period.
- Perform routine monitoring of erosion control facilities during construction and during/after rain events.

Furthermore, during the installation of the erosion and sediment transport control structures, the erosion control professional must be on the site to supervise implementation of the designs and maintenance of the facilities throughout the grading and construction period.

As part of the SWPPP, the Project Sponsor would implement the following construction BMPs, as necessary, to protect stormwater quality:

- Store, handle, and dispose of construction materials and wastes.
- Control and prevent the discharge of all potential pollutants, including pavement-cutting wastes, paints, concrete, petroleum products, chemicals, washwater, and non-stormwater discharges, to storm drains and watercourses.
- Avoid cleaning, fueling, or maintaining vehicles onsite, except in a designated area where washwater is contained and treated.
- Perform clearing and earthmoving activities only during dry weather.
- Limit and time applications of pesticides and fertilizers to prevent polluted runoff. Delineate with field markers clearing limits, easements, setbacks, sensitive or critical areas, buffer zones, trees, and drainage courses.
- Train and provide instruction to all employees and subcontractors regarding construction BMPs.

Construction dewatering in areas with shallow groundwater could be required during excavation and trenching for building foundation and utility improvements. Because the Project site is a DTSC cleanup site and has historical soil contamination, groundwater may be contaminated. As discussed in Section 3.11, *Hazards and Hazardous Materials*, impacts related to groundwater contamination are considered potentially significant and require mitigation to protect human health and the environment. Coverage under the Construction General Permit typically includes dewatering activities as authorized non-stormwater discharges, provided that dischargers prove the quality of water to be adequate and not likely to affect beneficial uses. Because groundwater at the site may be contaminated, the San Francisco Bay RWQCB would need to be notified if dewatering would occur. In addition, the contractor may be subject to dewatering requirements in addition to what is outlined in the Construction General Permit, including discharge sampling and reporting.

Because the Project would disturb more than 1 acre, coverage under the Construction General Permit would be required. In addition to compliance with the Construction General Permit, the City's Municipal Code (Title 7, Chapter 7.42) and the permit review process, the Project Sponsor would also be required to prepare and implement a G&D Plan. BMPs implemented as part of the G&D Plan would reduce the amount of stormwater runoff and prevent the entry of Project-related sediment and pollutants into the City's storm drain system and other surface waters. In addition, the Project parking lot grading plan includes stormwater treatment areas, such as bio-retention treatment areas.

LID features, source control, and BMPs to protect stormwater quality that would be implemented as part of the G&D Plan include the following:

- Site drainage shall be designed so that stormwater flows through vegetated or grassed swales or other pervious landscaped areas prior to entering the public drainage system.
- Site drainage shall be designed to utilize onsite infiltration.
- Drainage systems shall be designed to prevent erosion and vector control problems (e.g., mosquito spawning grounds).
- Site drainage shall include onsite retention systems (or detention systems where retention is impracticable) so that the post-project runoff rate will not exceed pre-project levels.
- Stormwater runoff generated by the project shall not drain onto adjacent properties. However, any existing storm drainage from adjacent properties shall not be blocked by the Project.
- To reduce the amount of directly connected impervious area, roof downspouts should connect to splash blocks (minimum 2 feet long) that allow water to be deflected away from the building to onsite landscaping or other pervious areas (including vegetated/grassy swales) that provide detention/retention.
- Adjacent properties and undisturbed areas shall be protected from construction impacts. Sediment-laden water shall not leave the site. The storage, handling, and disposal of construction materials shall be accomplished using methods that prevent them, as well as site wastes, from coming into contact with stormwater.
- The groundwater table is relatively shallow at the Project site, and pollutants associated with construction activities (e.g., fuel, petroleum products) could migrate or percolate into the groundwater and contribute to degradation of the local groundwater aquifer. Implementation of construction BMPs, such as spill prevention and good-housekeeping BMPs (e.g., proper storage, handling, and disposal of construction-related materials) would be included in the SWPPP and would minimize the potential for impacts on groundwater quality during construction.

Construction activities could result in short-term surface and groundwater quality impacts, such as input of sediment loads that exceed water quality objectives or chemical spills into storm drains or groundwater aquifers if proper minimization measures are not implemented. However, a Project SWPPP will be developed and implemented that would be in compliance with the Construction General Permit, local stormwater ordinances, and other related requirements. With the exception of dewatering of potentially contaminated groundwater, which would be mitigated with the implementation of Mitigation Measure WQ-1.1, construction-related impacts on water quality would be ***less than significant***.

MITIGATION MEASURE. Mitigation Measure WQ-1.1 would be implemented during construction dewatering to ensure that potential impacts related to water quality would be reduced to a ***less-than-significant*** level.

WQ-1.1: Implement Construction Dewatering Treatment (if necessary). Dewatering treatment would be necessary if groundwater is encountered during excavation activities, dewatering is necessary to complete the Project, or the dewatered water is discharged to any storm drain or surface water body. Because there is potential for groundwater to be contaminated with VOCs or fuel products at the Project site, the Project Sponsor would be required to comply with the San Francisco Bay RWQCB's VOC and Fuel General Permit (Order No. R2-2012-0012).

If dewatering activities require discharges into the storm drain system or other water bodies, the water shall be pumped to a tank and tested for water quality using grab samples and sent to a certified laboratory for analysis. If it is found that the water does not meet water quality standards, it should either be treated as necessary prior to discharge so that all applicable water quality objectives (as noted in Tables 3.10-1 and 3.10-2) are met or hauled offsite instead for treatment and disposal at an appropriate waste treatment facility that is permitted to receive such water. Water treatment methods shall be selected that achieve maximum removal of contaminants found in the groundwater and represent the best available technology that is economically achievable. Implemented methods may include the retention of dewatering effluent until particulate matter has settled before it is discharged, the use of infiltration areas, filtration, or other means. The contractor shall perform routine inspections of the construction area to verify that the water quality control measures are properly implemented and maintained, conduct visual observations of the water (i.e., check for odors, discoloration, or an oily sheen on groundwater), and perform other sampling and reporting activities prior to discharge. The final selection of water quality control measures shall be submitted in a report to the San Francisco Bay RWQCB for approval prior to construction. If the results from the groundwater laboratory do not meet water quality standards and the identified water treatment measures cannot ensure that treatment meets all standards for receiving water quality, then the water shall be hauled offsite instead for treatment and disposal at an appropriate waste treatment facility that is permitted to receive such water.

Operation and Maintenance

The Project would construct two office buildings (Buildings 21 and 22) and surface parking lots; landscaped and pervious areas (i.e., bio-retention and pervious roof landscape areas) would also be provided, as illustrated in Figures 2-3 and 3.10-3. In addition, the Project would include a 200-room limited-service hotel.[48] Operation of new facilities could increase existing levels of pollutants (e.g., trash, oil, grease, pesticides) and introduce additional quantities of those pollutants into storm drains. Operation and maintenance (O&M) activities of the Project would be similar to existing O&M activities, such as landscape maintenance, building maintenance, storage of materials and substances, and vehicle use. Good-housekeeping practices, such as regular litter and trash collection and sweeping, would continue to be implemented onsite.

Approximately 41.4 acres of the 58.3-acre Project site would be impervious area. Table 3.10-6 provides a summary of changes to existing and proposed impervious and pervious areas by facility. Runoff from impervious surfaces could contain nonpoint pollution sources, which are typical of urban settings and

[48] A limited-service hotel generally offers fewer services (e.g., in-house drinking and dining options) than a full-service hotel.

Table 3.10-6. Total New Impervious Area

	Project Site Area (gsf)[a]	Impervious Area (gsf)	Pervious Area (gsf)	% of Project Site (Impervious)
Existing[b]	2,172,624	1,869,228	303,396	86
Proposed[c]	2,172,624	619,210	1,553,414	71
Change	—	-315,814	+315,814	-15

Source: Gehry Partners, LLP. *Landscape Narrative for the Facebook Campus Expansion, Buildings 21, 22, and Hotel Site.* March 4, 2016.

Notes:

[a.] Building 23 is located on the Project site but is not part of the Project. Although the Project site is 58.3 acres (2.54 million gross square feet [gsf]), for the purposes of the impervious calculations, Building 23 is not included, resulting in a total site area of 49.9 acres (2.17 million gsf).

[b.] Existing conditions represent conservative estimates, based on existing features at the Project site.

[c.] The proposed design assumes a range of 90 percent impervious and 10 percent pervious landscape areas (planters, etc.) on the roof and terrace level.

associated with automobiles, trash, cleaning solutions, and landscaped areas. Stormwater would be drained by a combination of new and existing pipes, drainage inlets, and other storm drain facilities. All flows from the Project site would continue to be conveyed to storm drain systems that discharge to the Lower San Francisco Bay.

The Project would include stormwater treatment areas, such as bio-retention areas, and buildings on the Project site would contain LID measures to allow for infiltration and minimize stormwater contamination.[49] The pervious and landscaped areas are shown in Figure 3.10-4. Several of the landscaped areas would function as biotreatment areas, which would provide water quality treatment for stormwater runoff in addition to soil infiltration. Also, large seasonal wetland areas/biotreatment basins would be incorporated into the landscape to provide both stormwater treatment and habitat functions.[50] In addition, the parking lot would include landscaped areas.

Both proposed Buildings 21 and 22 would include green roofs and terraces. According to Project plans and supporting documents, the Building 21 roof would be 26 percent pervious and 74 percent impervious and the Building 22 roof would be 15 percent pervious and 85 percent impervious, respectively.[51] Green roofs would include gardens and raised planters, with plants that would require little water, as well as native and adaptive shrubs, perennials, and groundcover that would be suitable for highly efficient green roof applications. Plant selection would be based on a number of criteria, including local and state water-efficient landscaping requirements (i.e., Chapter 12.44 of the City's Municipal Code and the DWR Model Water-Efficient Landscape Ordinance [WELO]) and other ecological and environmental considerations.

[49] WRECO. 2016. *Hydrologic and Hydraulic Study Report for Facebook Menlo Park West Campus, Menlo Park, California.* March 2016.

[50] Gehry Partners, LLP. 2015. *Landscape Narrative.* Proposed landscaping plan. March 4, 2016.

[51] Gehry Partners, LLP. 2015. *Landscape Narrative.* Proposed landscaping plan. Proposed breakdown of Pervious/Impervious Areas Plan (Sheet L2-03). March 4, 2016.

The Project would be required to comply with the Municipal Regional Permit SMCWPPP *C.3 Stormwater Technical Guidance* because it would involve new or replaced impervious area greater than 10,000 square feet.[52] However, the Project would ultimately reduce the overall area of impervious surface area by 15 percent compared with existing impervious surface area (see Table 3.10-5). The Project would reduce total runoff rates and implement biotreatment measures and, therefore, would be in compliance with Provision C.3. The stormwater management measures proposed for the Project would reduce pollutant discharges from stormwater through filtration, infiltration, and sedimentation. The provision also states, however, that "all projects, regardless of size, should consider incorporating appropriate source control and site design measures that minimize stormwater pollutant discharges to the maximum extent practicable [MEP]." Regardless of a project's need to comply with Provision C.3, municipalities apply the MEP standard, including standard stormwater conditions of approval for projects that receive development permits.

The Project would be designed and maintained in accordance with City, County, and San Francisco Bay RWQCB water quality requirements, such as the San Francisco Bay MS4 Permit and SMCWPPP, as well as flood control requirements from the City Municipal Code (Chapter 7.42) (see separate discussion of flooding under Impact WQ-3). The Project would comply with the General Construction Permit; San Francisco Bay MS4 Permit, Provision C.3; and SMCWPPP *C.3 Stormwater Technical Guidance* and implement a SWPPP and other erosion control measures that incorporate stormwater treatment areas such as bio-retention areas. Therefore, potential surface water quality impacts from Project operation would be ***less than significant***.

Impact WQ-2: Effects on Groundwater Supplies and Recharge. The Project would not substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that a net deficit in aquifer volume or a lowering of the local groundwater table level would result. (LTS)

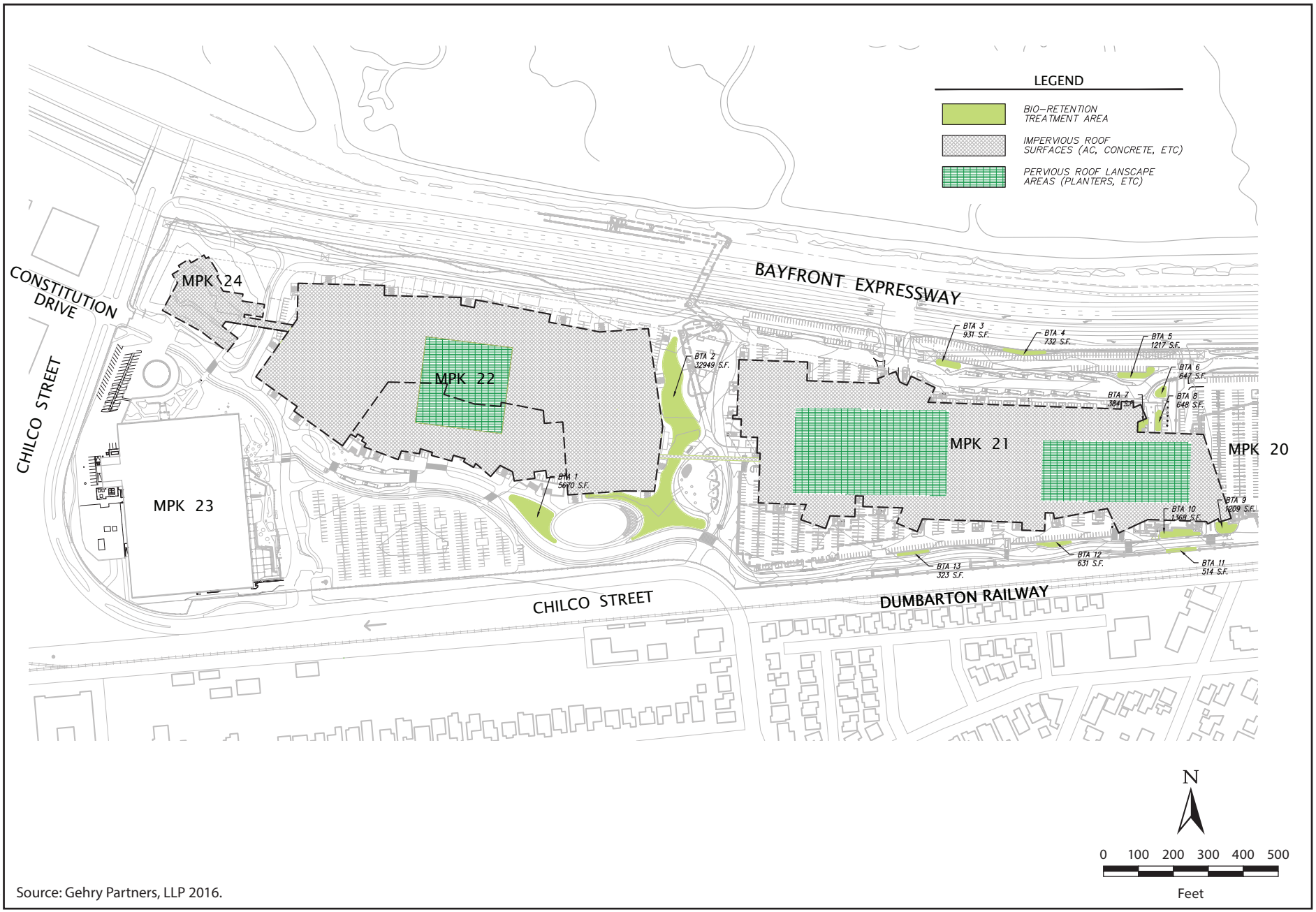
Construction

Although dewatering may be necessary during project construction, the groundwater beneath the Project site is not used for municipal water supply purposes. Should dewatering occur, it would be conducted on a one-time or temporary basis during the construction phase and would not result in a loss of quantities of water that would deplete groundwater supplies. In addition, water supply for construction activities (e.g., dust control, concrete mixing, material washing) would come from nearby hydrants or existing surface supplies to the site and/or be trucked to the site. Therefore, there would be no potential for reducing the volume of water in the local aquifer table, and impacts on groundwater supplies from construction activities would be ***less than significant***.

Operation

The Project would not substantially deplete groundwater supplies or substantially interfere with groundwater recharge because it would not increase groundwater demand or decrease groundwater recharge areas. Natural groundwater recharge of the San Mateo subbasin occurs primarily by infiltration of water from streams. Additional recharge occurs by percolation of precipitation that falls directly on the ground surface. Because implementation of the Project would result in a 15 percent decrease in impervious surface area, there would be an increase in groundwater recharge potential at the Project

[52] Gehry Partners, LLP. 2015. *Landscape Narrative*. August 31.



Source: Gehry Partners, LLP 2016.

Graphics ... 00296.15 (3-31-2016)

Figure 3.10-4
Proposed Pervious and Impervious Areas Plan for the Project
Facebook Campus Expansion Project Draft EIR

site. The Project design includes pervious areas in the parking lots, stormwater treatment areas such as bio-retention areas, and pervious roof landscape areas. These landscape and hydromodification features would allow for increased groundwater infiltration. Native grasses would stabilize native soils, and new vegetation zones would slow water flow, allowing it to percolate into the ground and thus provide increased benefits for groundwater recharge. Therefore, the Project's operations-related impact on groundwater supplies and recharge would be ***less than significant***.

Impact WQ-3: Changes to the Existing Drainage Patterns. The Project would not substantially alter the existing drainage pattern of the site or area, including through alteration of the course of a stream or river, in a manner that would result in substantial erosion, siltation, or flooding onsite or offsite. (LTS)

Construction

Project construction activities would temporarily alter existing drainage patterns and could result in local (onsite) and temporary erosion and siltation during the removal or modification of existing storm drains. However, if a storm drain is closed during construction, existing flows would be temporarily re-routed to another nearby storm drain. The temporary facilities would be designed to mimic existing drainage patterns. As previously described, the Project would implement a SWPPP to minimize the potential for erosion and sedimentation in nearby storm drains during construction.

Preparation and implementation of the G&D Plan and the SWPPP would reduce the potential for substantial erosion or siltation onsite or offsite, flooding onsite or offsite as a result of altering existing drainage patterns, or substantially increasing the rate or amount of runoff that would result in substantial erosion, siltation, or flooding onsite or offsite. The Project would be in compliance with existing NPDES permits and the City's Municipal Code for construction and stormwater management (Chapter 7.42). Additionally, construction of the Project would not involve work within surface waters and thus would not alter the course of an existing stream or river because these features do not exist onsite. The impact would be ***less than significant***.

Operation

Although drainage patterns on the Project site would be altered, drainage would ultimately be improved because Project implementation would result in an increased pervious area that would further minimize runoff volumes and the potential for ponding and other drainage issues. The Project site is located within a FEMA-designated 100-year Flood Zone, with the exception of the southwest corner of the Project site, which is outside the 500-year floodplain. The 100-year flood event, in combination with SLR and high-tide events, could result in a greater risk of flooding in the future. Stormwater modeling prepared for the Project showed that, in a 100-year storm event, there would be flooding at some points in the Project area. There would be no flooding at Building 21, but noticeable flooding at sites near Buildings 22 and 24. Buildings 21 and 22 would be built on podiums that would raise finished floor elevations. Finished floor elevations would be 12.75 feet (NAVD 88), based on the BFE of 10.8 feet plus 16 inches (1.3 feet) and 12 inches (1 foot) for freeboard. The Project would be designed to ensure that flooding off-site would not increase. Renovation and occupancy of Building 23 is not included as part of the Project; however, for informational purposes, it is noted that Building 23 is also located within an area that is prone to minor flooding or ponding.

Following Project implementation, there would be a decrease in impervious surface area relative to existing conditions due to additional landscaped areas and drainage improvements, which would ultimately reduce the potential for moderate localized flooding and ponding in areas throughout the Project site. The Project would result in an approximately 15 percent reduction in impervious surfaces relative to existing conditions (Table 3.10-5).

According to the hydrology and hydraulics report prepared for the Project, development of the Project site may cause or increase onsite or offsite flooding, which could be avoided with modified conditions, such as increasing the size of onsite stormwater pipes.[53] The hydrology and hydraulics report prepared for the Project states that, at the conceptual stage, the existing drainage system is not adequate for conveying the 100-year stormflow under existing conditions. Under existing conditions, stormwater flows to several pipes overwhelm the system, resulting in backwater. Increasing the size of the pipes at some locations is needed to prevent flooding during the 100-year event. As a result, the Project Sponsor has proposed as part of the Project to upsize the existing pipes and include new onsite pipes that would be larger to ensure that the onsite system would be adequate with respect to conveying stormwater in the event of a 100-year storm.[54] The locations for new stormwater pipes are shown in Figure 3.10-1, and the proposed private stormwater drain system is shown in Figure 3.10-2.

Stormflows across the site could cause soil deposition in nearby storm drains, thereby degrading water quality in receiving waters. Operation of the Project would require soil stabilization (e.g., vegetation, other protective cover, and stabilized slopes and fills) in accordance with Construction General Permit post-construction requirements and MS4 stormwater design requirements to reduce erosion and sediment transport. Because of the decrease in impervious surface area under the Project relative to existing conditions, there would be a reduced potential for erosion and siltation in the drainage systems at the Project site. Additionally, the Project would not alter the course of an existing stream or river because these features do not exist onsite.

Because the Project would ultimately reduce the risk of flooding through the incorporation of pervious landscaping, bio-retention areas, and stormwater infrastructure improvements, the Project would not result in flooding onsite or offsite. The Project would also not result in substantial erosion or siltation. In addition, the Project would not alter the course of an existing stream or river because these features do not exist onsite. The impact would be ***less than significant***.

Impact WQ-4: Changes to Stormwater Runoff. The Project would not create or contribute runoff water that would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff. (LTS)

The Project would incorporate an improved drainage system, consisting of a combination of existing, new, and modified storm drains. As stated in Impact WQ-3, improvements to the existing storm drain system would prevent onsite flooding in the event of a 100-year storm.[55] The Project would increase overall pervious surface area relative to existing conditions with additional landscaped areas and drainage improvements that would ultimately reduce the volume of stormwater runoff into the storm drain system.

[53] WRECO. 2016. *Hydrologic and Hydraulic Study Report for Facebook Menlo Park West Campus, Menlo Park, California.* March 2016.

[54] WRECO. 2016. *Hydrologic and Hydraulic Study Report for Facebook Menlo Park West Campus, Menlo Park, California.* March 2016.

[55] WRECO. 2016. *Hydrologic and Hydraulic Study Report for Facebook Menlo Park West Campus, Menlo Park, California.* March 2016.

The final design for the stormwater management and storm drainage system would be required to meet several criteria (e.g., SMCWPPP Provision C.3 post-construction stormwater criteria and 100-year flood criteria) to ensure adequate storm drain capacity for the Project. The Project would be designed to prevent potential additional runoff from the Project to be discharged to the storm drain system and therefore would not create or contribute runoff water that would exceed the capacity of the existing stormwater drainage systems.

The perimeter of the Project site would have a landscaped buffer. Landscaped areas would include bio-retention areas that would allow stormwater drainage and infiltration from surface runoff from the new facilities. In addition, emergency vehicle access and pedestrian paths would be pervious concrete, and parking lot and entry drives outside the building footprint would be pervious asphalt paving, allowing precipitation and runoff to infiltrate. Thus, stormwater runoff volumes due to the Project would not exceed the capacity of existing or planned stormwater drainage systems, and this impact would be ***less than significant***.

Impact WQ-5: Impacts from Flooding. The Project could expose people or structures to a significant risk of loss, injury, or death involving flooding, including flooding as a result of the failure of a levee or dam, but would not place structures within a 100-year flood hazard area. (LTS/M)

Special Flood-Hazard Area. As shown in Figure 3.10-3, the Project is within a Special Flood-Hazard Area (SFHA), Flood Zone AE, which is a 100-year floodplain that is subject to tidal flooding.

The Project includes construction of two new office buildings (Buildings 21 and 22) and a hotel that would be placed in a SFHA. Because the City participates in the NFIP, it must ensure that the Project meets federal standards for flood protection. Chapter 12.42 of the City's Municipal Code contains methods and provisions for preventing flood damage. Under Section 12.42.41, a development permit is required before grading activities in a flood-hazard area can begin.

Construction within SFHAs is governed by the City's Municipal Code, Chapter 12, Section 12.42.51, Standards of Construction, which sets forth standards for development within SFHAs to minimize flood-hazard risks. The standards include anchoring and flood-proofing; limiting uses for structures below the BFE; using materials and utility equipment that resist flood damage; requiring electrical, heating, ventilation, plumbing, and air-conditioning equipment and service facilities to be designed and/or located so as to prevent water from entering or accumulating within the components during flood conditions; and requiring that all new and replacement water supply and sanitary sewage systems be designed to minimize or eliminate infiltration of floodwaters into the systems (as well as discharges from systems into floodwaters).

The Project proposes drainage improvements that would increase the capacity of the drainage system, reduce impervious areas to increase onsite soil infiltration, add additional landscaped areas, and add a new LID feature that would minimize the potential for additional overland floodflows.

Existing grades on the site range from 7.0 to 10.5 feet (NAVD 88). The Project would involve the placement of podiums to raise finished floor elevations and provide protection from the 100-year BFE plus 16 inches. Finished floor elevations would be 12.75 feet (NAVD 88), based on the BFE of 10.8 feet plus 16 inches (1.3 feet) and 12 inches (1 foot) for freeboard. Buildings 21 and 22 would be raised with parking under the buildings to allow for site drainage. This would also allow floodwaters to pass under the building, if necessary. Similarly, the hotel would be designed to minimize flooding impacts both onsite and offsite. FEMA provides a process for the public to request a change in the flood-zone

designation for the property. This request is known as a Letter of Map Change. Once the Project is complete, Facebook will apply for a Letter of Map Change for areas within the Project site with elevations above FEMA flood zone BFEs, which would qualify as being outside of FEMA Flood Zone AE.

Although buildings would not be flooded with SLR of 16 inches or less, the site parking areas and roadways, including underground parking areas, would be inundated under certain flood conditions, resulting in a ***potentially significant*** impact.

MITIGATION MEASURE. The following measures would minimize the effects of flooding, resulting in a ***less-than-significant*** impact.

WQ-5.1: Flood-proofing of Project Underground Infrastructure. Prior to or, at a minimum, concurrent with the issuance of the first construction activity permit at the Project site, and in connection with applicable FEMA requirements, the Project Sponsor shall ensure that the Project incorporates design features, including storm drains, sewers, and equipment facilities, that would flood-proof underground infrastructure, thereby allowing it to withstand hydrostatic forces and buoyancy from SLR changes in groundwater levels. Onsite recycled-water wetland treatment areas shall be located at grade, with underground tanks placed in elevated areas to provide protection from the 100-year BFE plus 16 inches.

WQ-5.2: Provide Adequate Stormflow Conveyance Capacity for Sea-Level Rise Conditions at the Project Site. Prior to or, at a minimum, concurrent with the issuance of the first construction activity permit at the Project site, the Project Sponsor shall provide current documentation in the form of a technical report to ensure that, as a result of Project design features, the storm drain system's existing conveyance capacity is not constricted by SLR at the outlets, including the offsite Chrysler pump station, as a result of the Project design.

Cumulative Impacts

The geographic context for the analysis of cumulative impacts associated with surface hydrology and water quality is the San Francisquito Creek watershed of the Lower San Francisco Bay watershed. The context for groundwater hydrology is the San Mateo subbasin of the Santa Clara Valley groundwater basin in the larger San Francisco Bay Hydrologic Region. The context for cumulative hydrology and water quality impacts is geographic and a function of whether impacts could affect surface water features/watersheds, the City's storm drainage system, or groundwater, each of which has its own physical boundary. This analysis accounts for anticipated cumulative growth within the potentially affected geographic area, as represented by full implementation of the County and City General Plans, including the projects identified in Chapter 3, *Environmental Impact Analysis*.

Cumulative impacts are addressed for only those thresholds that would result in a Project-related impact, whether it be less than significant, significant, or significant and unavoidable. If the Project would result in no impact with respect to a particular threshold, it would not contribute to a cumulative impact. Therefore, no analysis would be required for the following thresholds:

- Place housing within a 100-year flood-hazard area, as mapped on a federal Flood-Hazard Boundary or FIRM or other flood-hazard delineation map.
- Inundation by seiche, tsunami, or mudflow.
- Degradation of Water Quality.

This cumulative analysis examines the effects of the Project in the potentially affected geographic area in combination with other current projects, probable future projects, and projected future growth.

Impact C-WQ-1: Cumulative Hydrology and Water Quality Impacts. The Project, in combination with other foreseeable development in the vicinity, could contribute considerably to cumulative impacts on water quality, groundwater recharge and supplies, storm drain capacity, or current flooding. (LTS/M)

Water Quality

Development of the Project, combined with other past and future development within the potentially affected geographic area, could degrade stormwater quality through an increase in impervious surface area and an increase in contaminated runoff, which could ultimately violate water quality standards, affect beneficial uses, and/or further impair 303(d)-listed waters within the San Francisquito Creek subwatershed, Lower San Francisco Bay watershed, and the San Mateo groundwater subbasin. As shown in Table 3.0-1, other projects include the construction of manufacturing and research-and-development facilities, hotels, offices, restaurants, health clubs, schools, and residences. Examples of construction and demolition projects close to the Project site are 100–155 Constitution Drive and Menlo Gateway, Facebook Building 23, demolition of Facebook Buildings 307–309, and the Commonwealth Corporate Center. All of these projects would have impacts on water quality similar to those of the Project. The quality of stormwater runoff varies with surrounding land uses, topography, and the amount of impervious cover as well as the intensity and frequency of landscape irrigation or rainfall. During construction, runoff may contain sediments and other construction materials and wastes (e.g., concrete debris), resulting from activities such as site clearing and grubbing, demolition and the removal of existing structures and pavement, cut-and-fill activities, grading and excavation, paving, building construction, tree removal, and landscaping. Construction dewatering in areas of shallow groundwater could be required during excavation and trenching for building foundation and utility improvements. Because the Project is a DTSC cleanup site and has historical soil contamination, groundwater may be contaminated. In the event contaminated groundwater is encountered during construction, dewatering would be conducted locally according to methods described in Mitigation Measure WQ-1.1. During operation, runoff may contain oil, grease, and metals that have accumulated in streets and driveways as well as pesticides, herbicides, particulate matter, nutrients, animal waste, and other oxygen-depriving substances from landscaped areas. The highest pollutant concentrations are generally in stormwater runoff generated at the beginning of the wet season and during the "first-flush," when approximately 80 percent of total accumulated pollutants are washed off surfaces with the first 0.5 inch of rainfall. Street surfaces are the primary source of pollutants in urban areas.

Other development, including development under ConnectMenlo, could affect water quality if the land use changes, the intensity changes, and/or drainage conditions are altered so as to facilitate the introduction of pollutants to surface or groundwater resources. Changes in land use would alter the associated type and amount of pollutants in stormwater runoff (e.g., higher fecal coliform concentrations in runoff from residential lands compared with commercial lands). An increased intensity in land use would increase potential pollutant loads. Alterations in drainage patterns could increase pollutant loads by increasing the amount of stormwater runoff and downstream flow, thereby transporting pollutants in stormwater runoff; cause or contribute to erosion if the rate of runoff is increased; or expose vulnerable areas to infiltration or runoff.

To prevent short-term (construction) impacts on water quality, the Project Sponsor would comply with the requirements of the Construction NPDES General Permit and the City's stormwater requirements (e.g., the Santa Mateo County Grading Ordinance). In addition, Project operations would be subject to the requirements of the SMCWPPP and the associated San Francisco Bay MS4 Permit, SMCWPPP *C.3 Stormwater Technical Guidance*, Construction General Permit post-construction requirements, as well as

other related stormwater requirements from the City or County. Through compliance with these regulations and implementation of Mitigation Measure WQ-1, cumulative impacts on water quality would be ***less than significant.***

Groundwater Recharge and Supplies

Groundwater recharge in the San Mateo subbasin, where other projects would be located, occurs primarily through infiltration from nearby streams and the Bay as well as direct recharge through infiltration of precipitation. The Project would ultimately reduce the total area of impervious surfaces within the Project site and thus increase groundwater recharge at the Project site. Most of the other projects would be redevelopment or infill projects in highly urbanized areas where recharge does not currently occur because of existing impervious surfaces. Therefore, cumulative development in highly urbanized areas may result in the replacement of impervious area but would not be expected to substantially increase the amount of new impervious surfaces. Therefore, groundwater recharge from percolating rainfall would not be adversely affected, and an indirect lowering of the local groundwater table is not likely to occur. However, development outside of areas with prior impervious surfaces would affect groundwater recharge, and the effects may be cumulatively significant. In addition, the Project would not contribute to cumulative impacts related to groundwater supply. Groundwater within the Project vicinity is not used for municipal water supply purposes.[56] Should dewatering occur, it would be conducted on a one-time or temporary basis during the construction phase and would not result in a loss of quantities of water that would deplete the groundwater volume.

The Project would reduce the amount of impervious surface in the vicinity, which would increase groundwater recharge. Shallow groundwater supply impacts due to temporary construction dewatering would be minimal. Impacts related to development of the Project would be ***less significant*** with respect to any potential cumulative loss of groundwater recharge and volume.

Storm Drain Capacity

Development could increase the rate and volume of stormwater runoff because of increased amounts of impervious surfaces. Increases in the rate or volume of stormwater runoff can cause localized flooding if storm drain capacity is exceeded or if flows exceed channel capacities and are conveyed to overbank areas where flood storage may not be available. The Project would ultimately reduce the total area of impervious surfaces within the Project site. Although development in highly urbanized areas may result in the replacement of impervious area, it would not be expected to increase the amount of new impervious surfaces substantially. Therefore, the volume of stormwater runoff in the City's storm drain system is not expected to increase substantially as a result of development in the Project vicinity. With implementation of the proposed revisions, the Project site would not experience flooding from storm drainage flows during the 100-year storm event. All projects would be required to include design features to reduce flows to pre-project conditions, according to San Francisco Bay MS4 Permit Provision C.3, associated SMCWPPP requirements, and the City of Menlo Park Municipal Code 100-year peak-flood requirements for drainage system capacity. Further analysis and review are needed for the proposed pipes, taking into consideration the final hydrologic conditions of the Project site. Cumulative impacts on storm drainage capacity would be ***less than significant.***

[56] Groundwater beneath the Project site is not considered a source of drinking water by the San Francisco Bay Water Board because of the elevated salinity in groundwater.

Flooding

As explained in Impact WQ-6, parts of the Project area are presently subject to tidal flooding, which would worsen with additional SLR. Other projects may also be proposed in areas that are prone to current tidal flooding and/or future tidal flooding with accelerated SLR. Existing regulations and requirements, in general, require site-specific actions to protect against increasing flood levels and placing people or structures at risk of floodflows, up to the current 100-year event condition, which would apply to other projects as well as the Project. It is possible that some other projects and planning efforts will also provide improved coastal flood protection, such as the SAFER Bay project. The Project's buildings would not be vulnerable to tidal flooding during a 100-year flood event (or a flood event 16 inches higher due to SLR) because they would be raised above the 100-year flood zone BFE plus 16 inches and 12 inches for freeboard. Cumulative impacts could be significant.

Regarding flooding caused by the Project, if all buildings are elevated and built on podiums, the Project would not contribute to increased flood levels because it would not divert flows. It would, however, reduce the amount of impervious area, with modified conditions (e.g., by upsizing existing pipes and incorporating LID measures, such as bio-retention areas). Although other developments may divert flows or increase impervious areas, which may result in an increased flood risk, the Project would not contribute adversely to increased flood risks for other developments and the Project's contribution would be ***less than cumulatively considerable***.

3.11 Hazards and Hazardous Materials

This section describes the hazardous materials issues and other public health and safety issues associated with construction and operation of the Facebook Campus Expansion Project (Project). The public safety concerns discussed below include potential exposure to hazardous materials in the soil, soil gas, and groundwater; wildland fire hazards; emergency response and evacuation plans; and aviation hazards. The *Environmental Impacts* section defines the criteria of significance and identifies potential Project impacts and mitigation measures related to hazards and hazardous materials.

The term "hazardous material" is defined in this section as any material that, because of its quantity, concentration, or physical or chemical characteristics, poses a significant present or potential hazard to human health and safety if released into the workplace or the environment.[1]

The issues identified in response to the Notice of Preparation (NOP) (Appendix 1) were considered in preparing this analysis. The hazard-related issues that were identified in the NOP pertain to cleanup required as a result of the former manufacturing uses and emergency access response times due to increased traffic. These issues are addressed below.

Existing Conditions

Regulatory Setting

The proper management of hazardous materials is a common concern for all communities. Beginning in the 1970s, governments at the federal, state, and local levels became increasingly concerned about the effects of hazardous materials on human health and the environment. Numerous laws and regulations were developed to investigate and mitigate these effects. As a result, the storage, use, generation, transport, and disposal of hazardous materials are highly regulated by federal, state, and local agencies. These agencies, as well as the laws, regulations, and programs they administer, are summarized below.

Federal and State Regulations

Hazardous Materials Management. The U.S. Environmental Protection Agency (EPA) is the lead agency with responsibility for enforcing federal laws and regulations that govern hazardous materials that can affect public health or the environment. The major federal laws and regulations pertaining to the management of hazardous materials on the Project site are the Resource Conservation and Recovery Act (RCRA) and Toxic Substances Control Act (TSCA).

In 1976, RCRA was enacted to provide a general framework for EPA to regulate hazardous waste from the time it is generated until its ultimate disposal. In accordance with RCRA, facilities that generate, treat, store, or dispose of hazardous waste are required to ensure that the wastes are properly managed from "cradle to grave" by complying with the federal waste manifest system. In California, the Department of Toxic Substance Control (DTSC) administers the RCRA program. One of the requirements for an RCRA-permitted facility is to implement a "corrective action program" and investigate and remediate any releases of hazardous wastes at the facility under the supervision of DTSC. As a result, DTSC has supervised the investigation and cleanup of contaminated soil and groundwater at the Project site, which is discussed further in the *Environmental Setting*, below.

[1] Abbreviated from California Health and Safety Code Section 25501.

In 1976, the TSCA was enacted to provide EPA with the authority to regulate the production, importation, use, and disposal of chemicals that pose a risk to public health and the environment. The TSCA also gives EPA the authority to regulate the cleanup of sites that have been contaminated with polychlorinated biphenyls (PCBs), such as the Project site.

Worker Health and Safety

The Occupational Health and Safety Administration (OSHA) is the federal agency with responsibility for enforcing and implementing federal laws and regulations pertaining to worker health and safety. OSHA's Hazardous Waste Operations and Emergency Response regulations require training and medical supervision for workers at hazardous waste sites.[2] Additional regulations have been developed regarding exposure to lead[3] and asbestos[4] to protect construction workers.

State worker health and safety regulations related to construction activities are enforced by the California Division of Occupational Safety and Health (known as Cal/OSHA). These regulations include requirements for protective clothing, training, and limits on exposure to hazardous materials. Cal/OSHA also enforces occupational health and safety regulations specific to lead and asbestos investigation and abatement. These regulations equal or exceed their federal counterparts.

Hazardous Building Materials

Hazardous materials are commonly found in building materials that may be affected during demolition and renovation activities. The proper management of hazardous building materials, in accordance with various regulations, is described below.

Asbestos-Containing Materials. Exposure to asbestos, a state-recognized carcinogen, can result in lung cancer, mesothelioma (cancer of the linings of the lungs and abdomen), or asbestosis (scarring of lung tissues that results in constricted breathing). Asbestos-containing materials (ACMs), such as thermal system insulation, surfacing materials, and asphalt and vinyl flooring, may be present in buildings constructed prior to 1981.[5] Therefore, workers who conduct asbestos abatement must be trained in accordance with state and federal OSHA requirements. The Bay Area Air Quality Management District (BAAQMD) oversees the removal of regulated ACMs. All friable (i.e., crushable by hand) ACMs or non-friable ACMs that may be damaged must be abated prior to demolition in accordance with applicable requirements. Friable ACMs must be disposed of as asbestos waste at an approved facility. Non-friable ACMs may be disposed of as non-hazardous waste at landfills that accept such wastes.

Lead-Based Paint. Exposure to lead, a state-recognized carcinogen, can result in stomach and lung cancer and impair nervous, renal, cardiovascular, and reproductive systems. Although lead-based paint (LBP) in residential structures was banned in 1978, this restriction did not apply to commercial and industrial buildings; therefore, any commercial or industrial building, regardless of construction date, could have surfaces that have been coated with LBP.[6] Loose and peeling LBP must be disposed of as a

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[2] Code of Federal Regulations, Title 29, Labor, Section 1910.120, Hazardous Waste Operations and Emergency Response.

[3] Code of Federal Regulations, Title 29, Labor, Section 1926.62, Lead.

[4] Code of Federal Regulations, Title 29, Labor, Section 1926.1101, Asbestos.

[5] California Code of Regulations, Title 8, Industrial Relations, Section 5208, Asbestos.

[6] Department of Toxic Substances Control. 2006b. *Interim Guidance Evaluation of School Sites with Potential Soil Contamination as a Result of Lead from Lead-Based Paint, Organochlorine Pesticides from Termiticides, and Polychlorinated Biphenyls from Electrical Transformers*. June 9 (revised).

state and/or federal hazardous waste if the concentration of lead equals or exceeds applicable waste thresholds. State and federal OSHA regulations require a supervisor who is certified with respect to identifying existing and predictable lead hazards to oversee air monitoring and other protective measures during demolition activities in areas where LBP may be present. Special protective measures and notification of Cal/OSHA are required for highly hazardous construction tasks related to lead, such as manual demolition, abrasive blasting, welding, cutting, or torch burning of structures, where LBP is present.

Universal Wastes. Universal wastes include a wide variety of hazardous wastes that are commonly produced in households and businesses. For example, universal wastes include electrical transformers, fluorescent lighting, electrical switches, heating/cooling equipment, and thermostats that could contain hazardous materials such as PCBs, diethylhexyl phthalate, mercury, and other metals. The disposal of these materials is regulated under the California Universal Waste Rule, which is less stringent than most other federal and state hazardous waste regulations. To manage universal waste in accordance with the streamlined requirements for the state, generators must relinquish the waste to a universal waste transporter, another universal waste handler, or a universal waste destination facility.

Naturally Occurring Asbestos

The California Air Resources Board (CARB) has adopted the Asbestos Airborne Toxic Control Measure (ATCM) for Construction, Grading, Quarrying, and Surface Mining Operations, which requires construction and grading projects to implement best available dust mitigation measures where naturally occurring asbestos rock is likely to be encountered. CARB defines "asbestos-containing material" as any material that has an asbestos content of 0.25 percent or greater. In accordance with Title 17 of the California Code of Regulations (CCR), Section 93105, construction projects greater than 1 acre in size must prepare and submit an Asbestos Dust Mitigation Plan (ADMP) to the BAAQMD for review and approval. The ADMP must indicate how construction and grading operations will minimize emissions and ensure that no equipment or operation will emit visible dust across the property line. Upon completion of construction activities, disturbed surfaces must be stabilized (e.g., with vegetative cover or pavement) to prevent visible emissions of asbestos-containing dust caused by wind speeds of 10 miles per hour or more. The BAAQMD must also be notified at least 14 days prior to any construction or grading in areas with naturally occurring asbestos rocks.

Hazardous Materials Release Sites

In California, EPA has granted most enforcement authority of federal hazardous materials regulations to the California Environmental Protection Agency (Cal/EPA). Under the authority of Cal/EPA, the State Water Resources Control Board (SWRCB) and DTSC are responsible for overseeing the remediation of contaminated soil and groundwater sites. The provisions of Government Code Section 65962.5 (also known as the Cortese List) require the SWRCB, DTSC, the California Department of Health Services, and the California Department of Resources Recycling and Recovery to submit information to Cal/EPA pertaining to sites that were associated with solid waste disposal, hazardous waste disposal, and/or hazardous materials releases.

Hazardous Materials Transportation

In 1990 and 1994, the federal Hazardous Material Transportation Act was amended to strengthen regulations for protecting life, property, and the environment from the inherent risks of transporting hazardous material. Furthermore, the U.S. Department of Transportation (USDOT) developed hazardous

materials regulations pertaining to classification, packaging, transport, and handling as well as regulations regarding employee training and incident reporting.[7] The transport of hazardous materials is subject to both RCRA and USDOT regulations.

The California Highway Patrol, the California Department of Transportation (Caltrans), and DTSC are responsible for enforcing federal and state regulations pertaining to the transport of hazardous materials. If a discharge or spill of hazardous materials occurs during transportation, the transporter is required to take appropriate immediate action to protect human health and the environment (e.g., notify local authorities and contain the spill); the transporter is also responsible for cleanup.[8]

Sources of Drinking Water

According to SWRCB's Source of Drinking Water Policy (Resolution 88-63), all groundwater in the state is considered to be suitable, or potentially suitable, for municipal or domestic water supplies, except under the following conditions:

- Total dissolved solids (TDS) exceed 3,000 milligrams per liter (mg/L), and the Regional Water Quality Control Boards (RWQCBs)[9] do not reasonably expect the water source to supply a public water system; or
- There is contamination, either by natural processes or by human activity (unrelated to the specific pollution incident), that cannot reasonably be treated using either best management practices or best economically achievable treatment practices; or
- The water source does not provide enough water to supply a single well that would be capable of producing an average sustained yield of 200 gallons per day.

Wildland Fire Protection

In accordance with California Public Resource Code Sections 4201–4204 and Government Code Sections 51175–51189, the California Department of Forestry and Fire Protection (CAL FIRE) has mapped areas of significant fire hazards based on fuels, terrain, weather, and other relevant factors. These zones, referred to as Fire Hazard Severity Zones, represent the risks associated with wildland fires. Fire Hazard Severity Zones mapped by CAL FIRE for state and local responsibility areas are classified as either "medium," "high," or "very high" based on fire hazards; however, the law requires only identification of Very High Fire Hazard Severity Zones in local responsibility areas. Wildland-Urban Interface Areas designated by local agencies are also classified as Fire Hazard Severity Zones.

Local

Hazardous and Acutely Hazardous Emissions

The BAAQMD oversees the protection of air quality in the San Francisco Bay Area Air Basin, which includes the Project site. Hazardous and acutely hazardous emissions during construction (e.g., demolition of buildings containing asbestos) and facility operations (e.g., emissions from diesel generators) are subject to health risk assessment regulations and permitted conditions of operation to protect nearby sensitive receptors.

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[7] Code of Federal Regulation, Title 49, Transportation, Parts 171–180.

[8] California Code of Regulations, Title 22, Social Security, Section 66260.10 et seq.

[9] There are nine RWQCBs that enforce the SWRCB's statewide policies.

Hazardous Materials Management

In California, hazardous waste and materials handling are regulated under the Unified Program. The Unified Program consolidates the administrative requirements, permits, inspections, and enforcement activities for the following existing programs, as established by five different state agencies:

- Hazardous Waste Generator and Tiered Permitting Program (Health and Safety Code [H&SC] Chapter 6.5)
- Underground Storage Tank Program (H&SC Chapter 6.7)
- Aboveground Petroleum Storage Tank Program (H&SC Chapter 6.67)
- California Accidental Release Prevention Program (H&SC Chapter 6.95)
- Hazardous Materials Release Response Plan and Inventory Program (H&SC Chapter 6.95)
- Hazardous Material Management Plan and Hazardous Material Inventory Statement Program (California Fire Code and H&SC Chapter 1)

The Unified Program requires facilities to properly manage hazardous materials and disclose information regarding such materials to minimize the risk of a hazardous materials release and improve emergency response actions in the event of a release. Although Cal/EPA oversees the entire program, local government agencies, known as Certified Unified Program Agencies (CUPAs), implement and enforce the elements of the Unified Program. In the city of Menlo Park, the San Mateo County Department of Environmental Health is the CUPA with responsibility for administering the Unified Program.

Emergency Response and Evacuation

In 2011, the City of Menlo Park (City) adopted the Annex to 2010 Association of Bay Area Governments Local Hazard Mitigation Plan: Taming Natural Disasters (Hazard Mitigation Plan) and an update to the City's Emergency Operation Plan. The Hazard Mitigation Plan assesses a full range of natural disasters and the City's response through disaster planning.[10] The City developed the Emergency Operation Plan to better prepare for responses to emergency situations that could result from natural disasters and technological incidents.[11] The Menlo Park Police Department (MPPD) is the City's primary agency for establishing emergency evacuation routes, which generally consist of the city's major arterial streets (US 101, Interstate 280 [I-280], State Route [SR] 82, and SR 84).[12]

City of Menlo Park General Plan

City of Menlo Park General Plan. The following policies and programs from the Open Space/Conservation, Noise, and Safety Elements of the City's General Plan apply to the Project:

> **Goal S1**: **Assure a Safe Community.** Minimize risk to life and damage to the environment and property from natural and human-caused hazards and assure community emergency preparedness and a high level of public safety services and facilities.

[10] City of Menlo Park. 2011a. *Annex to 2010 Association of Bay Area Governments Local Hazard Mitigation Plan, Taming Natural Disasters*. October 11.

[11] City of Menlo Park. 2011b. *Emergency Operations Plan*. V2. January.

[12] City of Menlo Park. 2012. *City of Menlo Park General Plan*. Adopted May 21.

Policy S1.10: *Safety Review of Development Projects.* Continue to require hazard mitigation, crime prevention, fire prevention, and adequate access for emergency vehicles in new development.

Policy S1.18: Potential Hazardous Materials Conditions Investigation. Continue to require developers to conduct an investigation of soils, groundwater, and buildings affected by hazardous material potentially released from prior land uses in areas historically used for commercial or industrial uses and identify and implement mitigation measures to avoid adversely affecting the environment or the health and safety of residents or new uses.

ConnectMenlo General Plan Update. The City General Plan (Land Use and Circulation Elements) and M-2 Area Zoning Update, also known as ConnectMenlo, is under way. Although not yet adopted, the following draft policy in ConnectMenlo pertains to the Project and is identified for informational purposes.

Policy LU-7.7: Hazards. Avoid development in areas with seismic, flood, fire, and other hazards to life or property when potential impacts cannot be mitigated.

Environmental Setting

Subsurface Hazardous Materials

Site History and Corrective Actions

The Project site was historically marshland associated with San Francisco Bay. In the mid-1960s, the Raychem Corporation (now part of TE Connectivity) purchased the Project site and adjacent property to the east (collectively referred to as the "Raychem site") to develop offices and manufacturing facilities. Most products manufactured on the Raychem site were based on a technology that involved radiation crosslinking, a process by which certain polymers are exposed to radiation and cross linked to produce characteristics such as toughness, abrasion resistance, cut-through resistance, solvent and chemical resistance, improved high-temperature performance, and elastic memory. Radiation crosslinking of polymer molecules used high-energy electron beam radiation. From 1968 to 1978, a Pilot Plant, located on the central portion of the Project site between Buildings 305 and 307, contained manufacturing facilities for polymers, antioxidants, paints, adhesives, epoxies, mastics, PCBs, coatings, and gels. The Pilot Plant was demolished in 1984.[13]

From 1983 to 1988, Raychem stored and treated hazardous wastes generated onsite in accordance with a RCRA Hazardous Waste Facility permit issued by the California Department of Health Services (predecessor of DTSC). In 1989, the California Department of Health Services conducted an RCRA Facility Assessment (RFA) on the Raychem site to identify known or potential releases of hazardous materials that require further investigation. The RFA identified 11 Solid Waste Management Units (SWMUs)[14] on the Project site where known and/or suspected releases of hazardous materials occurred. The RFA also identified the former Pilot Plant area on the Project site as an "Area of Concern"[15] because of known

[13] Cornerstone Earth Group. 2014a. *Phase I Environmental Site Assessment and Preliminary Soil and Soil Vapor Quality Investigation, 300 to 309 Constitution Drive, Menlo Park, California*. July 31.

[14] "SWMU" means "any discernible unit at which solid wastes have been placed at any time, irrespective of whether the unit was intended for the management of solid or hazardous wastes. Such units include any area at a facility at which solid wastes have been routinely and systematically released."

[15] "Area of Concern" means "any area of a facility under the control or ownership of an owner or operator where a release to the environment of hazardous wastes or hazardous constituents has occurred, is suspected to have occurred, or may occur, regardless of the frequency or duration."

releases of PCB oil and suspected releases of other hazardous materials (e.g., solvents and mixing media containing metals). A total of seven SWMUs and one Area of Concern (a chemical plant) were identified as part of the Raychem site, on the property east of the Project site. The California Department of Health Services made the following statement following their inspection of the Raychem site in 1989:[16]

> The facility has a history of poor housekeeping practices. There are numerous documented reports of accidental spills from process areas, leaking tanks, and drums and one case of improper onsite disposal of hazardous waste.

Subsequent inspection reports prepared by the San Mateo County Department of Environmental Health between 2006 and 2010 also noted violations pertaining to the improper storage and handling of hazardous materials by TE Connectivity on the Raychem site.[17]

Since 1981, more than 20 environmental assessments and investigations have been performed on the Raychem site.[18] On the Project site, several soil excavations were performed in the early 1980s to remove contaminated soil associated with the former Pilot Plant area, an evaporation trench south of Building 309, and a former diesel underground storage tank south of Building 307.[19] In 1996, Raychem entered into a Corrective Action Consent Agreement[20] with DTSC to perform RCRA Facility Investigation (RFI) activities on the Raychem site. Between 1999 and 2003, RFI activities were conducted on the Raychem site to evaluate the quality of soil and groundwater associated with the SWMUs, Areas of Concern, and other potential sources (e.g., pits, sumps, former petroleum underground storage tank). The RFI identified local areas where soil and groundwater have been contaminated by past releases of hazardous materials. Elevated levels of volatile organic compounds (VOCs), semi-volatile organic compounds, metals, petroleum hydrocarbons, PCBs, and polychlorinated dioxins and dibenzofurans were documented at numerous locations across the Raychem site. The RFI determined that the groundwater contamination was limited to the Raychem site and VOC concentrations would naturally attenuate (i.e., reduce) over time. Subsequent groundwater modeling also predicted minimal movement of PCB concentrations in groundwater over time.[21]

Tyco Electronics merged with Raychem in 1999 (Tyco changed its name to TE Connectivity in 2011). In 2000, Tyco Electronics entered into another Corrective Action Consent Agreement with DTSC to implement Interim Remedial Measures (IRMs) and prepare a Corrective Measures Study and Implementation Plan (CMS/IP) for the Raychem site.[22] Between 2000 and 2007, IRMs were performed on the Raychem site, resulting in source removal of contaminated soils. On the Project site, the IRMs included excavation and offsite disposal of PCB-contaminated soil along an easement and a landscaped area south of Building 305 and PCB-contaminated sediments from four drainage inlets at the former Pilot Plant area.

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[16] California Department of Health Services Toxic Substances Control Program. 1989. *RCRA Facility Assessment, Raychem Corporation, 300 Constitution Drive, Menlo Park, CA*. September.

[17] Cornerstone Earth Group. 2014a. *op. cit*.

[18] Cornerstone Earth Group. 2014a. *op. cit*.

[19] GRA Associates Inc. 2002. *RFI Report – Soil Investigation (Final), Volume I (Text), Raychem/Tyco Facility – Areas 1 through 5 (Western and Central Portions of Site), 300 Constitution Drive, Menlo Park, California 94025, EPA ID No. CAD009125527*. June.

[20] A Corrective Action Consent Agreement is a voluntary agreement between a lead agency and responsible party in which the company commits to investigate the nature and extent of contamination at and surrounding a site governed by RCRA and implement corrective actions (i.e., cleanup) as necessary.

[21] GRA Associates Inc. 2002. *op. cit.*

[22] Department of Toxic Substances Control. 2006a. *Statement of Basis, Proposed Remedy Selection for Contaminated Soil and Groundwater at Tyco Electronics Corporation, 300 Constitution Drive, Menlo Park, California 94025, San Mateo County*. EPA ID #CAD 009 125 527. July.

Given the findings of the RFI and results of the IRMs conducted on the Project site, a risk assessment was conducted in 2005 to evaluate the potential health risks from exposure to residual contaminants of potential concern in soil and groundwater at the Project site (a separate risk assessment was prepared for the property east of the Project site). The risk assessment concluded that subsurface contamination on the Project site would not pose a significant threat to human health if the site continued to be used as a commercial/industrial property.[23]

In 2006, a CMS/IP was prepared for the Raychem site to evaluate corrective action measures (i.e., remedial strategies) pertaining to residual hazardous materials in soil and groundwater. The final corrective action measures selected by DTSC, after consideration of the CMS/IP, for the Raychem site that would apply to the Project site (i.e., the western portion of the Raychem site) include the following:

- Enter into a Land Use Covenant (LUC) to restrict future use of the Raychem site to commercial and/or industrial uses only;
- Monitor the existing groundwater monitoring wells annually for water level, pH, temperature, conductivity, salinity, and TDS for a total of 20 years;
- Monitor the existing groundwater monitoring wells every 5 years for VOCs and 20 years for PCBs;
- If chemical concentrations increase at a well, confirm the change or revise the groundwater model; and
- Inspect the integrity of monitoring wells annually and repair, if necessary.

Additional corrective action measures were selected by DTSC for the property east of the Project site, including the installation of new monitoring wells and annual inspections of an engineered cap over the chemical plant area.[24] In 2006, an Operation, Maintenance, and Monitoring Plan (OMMP) was prepared and approved by DTSC for the Raychem site. The OMMP identifies actions that must be implemented to ensure that the long-term remedial objectives described in the CMS/IP are satisfied. On the Project site, the OMMP describes groundwater monitoring requirements and contingency measures that must be taken in the event that odorous or discolored soils are encountered during subsurface work. These contingency measures, which are designed to protect construction workers, include action levels for air monitoring, soil sampling, and soil disposal.[25]

In 2007, Tyco Electronics and DTSC entered into an LUC to protect present and future site users and the environment from hazardous materials that remain in soil and groundwater on the Raychem site. The LUC restricts use of the Raychem site (including the Project site) to commercial and industrial land uses and outlines several requirements that pertain to development and future operation and maintenance of the site. In particular, the LUC prohibits use of groundwater as a drinking water source and requires that any activities that disturb the soil (e.g., through excavation and grading) be permitted only pursuant to a Soil Management Plan and a Health and Safety Plan approved by DTSC.[26]

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[23] SCS Engineers. 2005. *Baseline Health Risk Assessment, Western Portion of Site (Areas 1 through 5), Tyco Electronics (Former Raychem) Facility, 300 Constitution Drive, Menlo Park, California*. April (revised July 2005).

[24] Department of Toxic Substances Control. 2006a. *op. cit.*

[25] SCS Engineers. 2006. *Operation, Monitoring and Maintenance Plan, Tyco Electronics Corporation, 300 Constitution Drive, Menlo Park, California.* Appendix G of the Corrective Measures Study/Implementation Plan. 14 July.

[26] Department of Toxic Substances Control. 2007. *Covenant to Restrict Use of Property, Environmental Restriction, Tyco Electronics Corporation, 300 Constitution Drive, Menlo Park, California, County Assessor's Parcel Nos. 055260150, 055260140, 055260130, 055260110, 055260080 and 050244101*. 19 January.

Groundwater Quality

In accordance with the CMS/IP, the July 2013 groundwater monitoring event at the former Raychem site, which encompasses the Project site, included the collection and analysis of groundwater samples. Elevated concentrations of chlorinated solvents (tetrachloroethylene [PCE] and trichloroethylene [TCE] and their daughter products), chlorobenzene, and Freon 113 from former industrial activities were reported on the Project site. Two VOC plumes, generally oriented from west to east, appear to cover a large portion of the Project site. One plume is located in the northeast portion of the Project site and extends beneath Building 301, and the other plume extends beneath Buildings 305–309.[27] Relative to previous monitoring events, the VOC plumes appear to be stable (i.e., not increasing) and/or reducing over time. PCBs were not reported above the laboratory reporting limits in any of the groundwater samples collected on the Project site.

According to a Phase I Environmental Site Assessment (ESA) prepared in 2014, it does not appear that any offsite sources of groundwater contamination have migrated onto the Project site. Groundwater depth ranges from about 6 to 9 feet below ground surface (bgs) and generally flows to the east and north.[28] Therefore, existing groundwater contamination on the adjacent property east of the Project site (also part of the Raychem site) is hydraulically downgradient and does not pose a risk of migrating onto the Project site.

Because of the high concentrations of TDS (above the SWRCB's threshold of 3,000 mg/L) in the shallow water-bearing zone beneath the Project site, under the SWRCB's Source of Drinking Water Policy (Resolution 88-63), groundwater is not considered a potential source of drinking water. Furthermore, the LUC that was recorded for the former Raychem site prohibits the use of groundwater as a source of drinking water. Therefore, ingestion of contaminated groundwater is not considered as a potential exposure pathway on the Project site.[29]

Vapor intrusion from groundwater to outdoor and indoor air represents a potential pathway for human exposure to VOCs on the Project site. Because of the potential accumulation of gases, the inhalation of VOCs in indoor air poses a greater health risk than the risk associated with outdoor air. Given the analytical results from the 2013 groundwater monitoring event, a Human Health Risk Assessment (HHRA) was prepared to evaluate the potential health effects of vapor intrusion on commercial workers. The HHRA determined that potential vapor intrusion of VOCs from groundwater to indoor air does not appear to pose an unacceptable health risk to commercial workers on the Project site.[30]

Soil Quality

In 2014, a Phase I ESA identified areas of potential concern where known and/or suspected hazardous materials releases associated with former industrial activities occurred on the Project site. Given the Areas of Concern identified in the Phase I ESA, the following soil investigations were performed by Cornerstone Earth Group (Cornerstone):

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[27] GRA Associates, Inc. 2013. *Groundwater Monitoring of July 2013, Tyco Electronics Corporation, 300 Constitution Drive, Menlo Park, CA 94025*. Revised: March 2014.

[28] Cornerstone Earth Group. 2014a. *op. cit*.

[29] Cornerstone Earth Group. 2014a. *op. cit*.

[30] Exponent. 2013. *Evaluation of Analytical Results from July 2013 Groundwater Monitoring Event, Tyco Electronic, Menlo Park, California*. November.

- *Phase I Environmental Site Assessment and Preliminary Soil and Soil Vapor Quality Investigation* (2014),
- *Soil Quality Investigation, Building MPK21* (2015a), and
- *Soil Quality Investigation, Building 23* (MPK23) (2015b).

Approximately 236 soil samples from about 135 borings, at depths of less than 10 feet bgs in areas of potential concern, were collected and analyzed for contaminants of concern. The soil investigations compared analytical results to one or more of the following screening criteria to assess potential health risks to commercial workers: EPA's Regional Screening Levels (RSLs) with a Hazard Quotient of either 0.1 or 1.0,[31] San Francisco Bay RWQCB's Environmental Screening Levels (ESLs), Cal/EPA's California Human Health Screening Levels (CHHSLs), and natural background concentrations of metals.

Information regarding the soil samples that exceeded the screening levels for the commercial worker exposure scenarios is presented in Table 3.11-1, below. The findings of the recent soil investigations indicate that there are concentrations of PCBs, total petroleum hydrocarbons as gasoline (TPHg), total petroleum hydrocarbons as diesel (TPHd), total petroleum hydrocarbons as motor oil (TPHmo), and lead in soil at the Project site that exceed human health risk screening levels for the commercial worker exposure scenarios. The source and extent of soil contamination in each Area of Concern listed in Table 3.11-1 have not been defined.

Table 3.11-1. Summary of Soil Analytical Results that Exceeded Commercial Screening Levels

Analyte	Number of Samples	Area of Concern
PCBs	3	South of Building 305 and the former Pilot Plant area
TPHg	1	South of Building 305
TPHd	4	Former Pilot Plant area, beneath Building 308, and south of Building 308
TPHmo	2	Beneath Building 308 and south of Building 308
Lead	1	South of Building 309

Sources: Cornerstone Earth Group 2014a, 2015a, 2015b.

Notes:
Commercial screening levels, which varied for each report, included RSLs, ESLs, CHHSLs, and background metals.

Soil Gas Quality

Given the Areas of Concern identified in the Phase I ESA, a soil gas investigation was performed by Cornerstone in 2014. A total of 21 soil gas samples were collected and analyzed from nine temporary vapor wells (approximately 5 and 9.75 feet bgs) across the Project site. The soil gas investigation identified elevated concentrations of several VOCs (benzene, PCE, TCE, and vinyl chloride).[32]

[31] For non-carcinogenic compounds, the hazard quotient is the ratio of potential exposure to a substance and the level at which no adverse effects are expected. For a single compound, raising the hazard quotient from 0.1 to 1 raises its respective RSL by an order of magnitude.

[32] Cornerstone Earth Group. 2014a. *op. cit*.

Given the analytical results of the soil gas investigation, a preliminary HHRA was prepared to evaluate the potential health effects of vapor intrusion on commercial workers.[33] The preliminary HHRA modeled the potential vapor intrusion of VOCs from soil gas to indoor air under two exposure scenarios: a site-specific exposure scenario and a DTSC-default exposure scenario. The site-specific exposure scenario accounted for the attenuation of indoor air VOC concentrations from the existing air exchange rates used in some of the buildings on the Project site. In accordance with DTSC's vapor intrusion guidance,[34] the DTSC-default exposure scenario applied a lower and more conservative air exchange rate to attenuate indoor air VOC concentrations. The maximum cumulative cancer risk and non-carcinogenic Hazard Index (HI) for commercial workers estimated under each exposure scenario are shown in Table 3.11-2, below, based on samples collected near Building 305. The health effects associated with the estimated cancer risks and non-carcinogenic HI values shown in Table 3.11-2 are discussed further in the *Environmental Impacts* section.

Table 3.11-2. Summary of Estimated Health Effects on Commercial Workers from the Potential Vapor Intrusion of VOCs from Soil Gas to Indoor Air

Exposure Scenario	Maximum Cumulative Cancer Risk	Maximum HI
Site Specific	5E-06	0.9
DTSC Default	3E-05	2

Source: Exponent. 2014.

Note:
A cancer risk of 1E-06 is equivalent to one in 1 million.

Naturally Occurring Asbestos

Previous geotechnical investigations performed on the Project site have encountered approximately 2 to 6 feet of undocumented fill. The primary fill materials were reportedly imported from an area near I-280 and Farm Hill Boulevard in Redwood City and consisted predominantly of serpentinite (an altered ultramafic rock) associated with the Franciscan Complex. Soils that formed from serpentinite could contain naturally occurring asbestos. Although materials with an asbestos content equal to or greater than 1 percent are classified as a California Hazardous Waste, CARB's Asbestos ATCM for Construction, Grading, Quarrying, and Surface Mining Operations applies to materials with an asbestos content of 0.25 percent or greater. In 2014, Cornerstone collected and analyzed five bulk samples from across the Project site for asbestos. The asbestos content was reported to be less than 0.10 percent in all five samples.[35] In 2015, Cornerstone collected and analyzed three 4-point composite bulk samples in the vicinity of Building 23 for asbestos.[36] The presence of asbestos was confirmed in one of the three samples, which had a reported asbestos content of 2.25 percent; the asbestos content was less than 0.25 percent in the other two samples.[37]

[33] Exponent. 2014. *Preliminary Evaluation of Soil Vapor Sampling Performed by Cornerstone at the TE Menlo Park Site by Exponent*. October 31.

[34] Department of Toxic Substances Control. 2011. *Guidance for the Evaluation and Mitigation of Subsurface Vapor Intrusion to Indoor Air*. October.

[35] Cornerstone Earth Group. 2014a. *op. cit*.

[36] For reference, Building 23 is not considered part of the Project.

[37] Cornerstone Earth Group. 2015b. *op. cit*.

Hazardous Building Materials

Hazardous building materials, as described in the *Regulatory Setting* section, could pose a health risk to construction workers and the public if not handled and disposed of properly. As summarized in Table 3.11-3, eight of the existing buildings on the Project site were built prior to 1981; therefore, ACMs may be present in these structures. LBPs and other hazardous materials that would be considered universal wastes during demolition activities may also be present in the buildings.

Table 3.11-3. Existing Buildings at the Project Site

Building ID	Construction Date
Building 23 (300)	1969 (north)/circa 1975 (south)
301	1967
302	1967
303	1967
304	1990
305A, 305B, 305C	1966; addition in 1969
306	1968
307[a]	1969
308/309[a]	1970/1990
Chemical Transfer Facility	1989

Sources: Hibiscus Properties, LLC 2015; Cornerstone Earth Group 2014a.
Note:
a. Prior to the City's consideration of the Project, two buildings (307–309) were slated to be demolished. This will occur as a separate project. Therefore, for purposes of this analysis, the buildings that were on the Project site at the time of the NOP release (the baseline) are included. It is assumed that Buildings 307–309 are existing at the Project site.

Radiological Materials

Radioactive Cobalt 60 was formerly used in the beam/bunker structure located in Building 304 from as early as 1964 until its removal in February 2007. A Radioactive Material License Closure Report was submitted to the Radiological Health Branch of the California Department of Health Services in April 2007. The closure letter included a Certificate of Disposition of Materials, radiation surveys completed prior to and after decommissioning activities, and documentation that there have been no instances of radioactive release or contamination on the property.[38]

Schools

A review of federal records for public and private schools with grades ranging from pre-kindergarten to 12 indicates that there are two schools within 0.25 mile of the Project site, as shown in Table 3.11-4.[39]

[38] Tyco Electronics, 2007. *Radioactive Material License Final Closure Report*. April 11.

[39] National Center for Education Statistics. 2015. *School Search Tool for Public and Private Schools*. Available: http://nces.ed.gov/ccd/schoolsearch/. Accessed: September 10.

Table 3.11-4. Schools within 0.25 Mile of the Project Site

Type	Lowest Grade	Highest Grade	School Name	Address
Public	KG	8	Belle Haven Elementary	415 Ivy Dr, Menlo Park
Private	KG	8	Beechwood School	50 Terminal Ave, Menlo Park
Note: KG =kindergarten				

Aviation Hazards

The nearest public use airport to the Project site is Palo Alto Airport, which is approximately 2.4 miles to the southeast. According to the Comprehensive Land Use Plan adopted by the Santa Clara County Airport Land Use Commission, the Project site is not located within the airport influence area of Palo Alto Airport.[40] In addition, no private airstrips have been mapped within 2 miles of the Project site.[41]

Wildland Fire Hazards

CAL FIRE has mapped Very High Fire Hazard Severity Zones in San Mateo County to help responsible local agencies, such as the Menlo Park Fire Protection District, identify measures to reduce the potential for loss of life, property, and resources from wildland fire. CAL FIRE has determined that there are no Very High Fire Hazard Severity Zones in the Project vicinity.[42]

Environmental Impacts

This section describes the impact analysis related to hazards and hazardous materials for the Project. It describes the methods used to determine the impacts of the Project and lists the thresholds used to conclude whether an impact would be significant. Measures to mitigate (i.e., avoid, minimize, rectify, reduce, eliminate, or compensate for) significant impacts accompany each impact discussion.

Thresholds of Significance

In accordance with Appendix G of the State CEQA Guidelines, the Project would be considered to have a significant effect if it would result in any of the conditions listed below.

- Create a significant hazard to public health or the environment through the routine transport, use, or disposal of hazardous materials.
- Create a significant hazard to public health or the environment through reasonably foreseeable upset or accident conditions involving the release of hazardous materials into the environment.
- Emit hazardous emissions or involve handling hazardous or acutely hazardous materials, substances, or waste within 0.25 mile of an existing or proposed school.

[40] Santa Clara County Airport Land Use Commission. 2008. *Comprehensive Land Use Plan, Santa Clara County, Palo Alto Airport*. Adopted: November 19.

[41] Federal Aviation Administration. 2015. *Airport Data and Contact Information*. Last updated: August 20, 2015. Available: http://www.faa.gov/airports/airport_safety/airportdata_5010/. Database searched for private-use facilities in San Mateo County and Santa Clara County. Accessed: September 11.

[42] CAL FIRE. 2008. *San Mateo County, Very High Fire Hazard Severity Zones in LRA, as Recommended by CAL FIRE*. November 24.

- Be located on a site that is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 (the "Cortese List," described above) and, as a result, create a significant hazard to the public or the environment.
- For a project located within an airport land use plan or, where such a plan has not been adopted, within 2 miles of a public airport or public use airport, result in a safety hazard for people residing or working in the project area.
- For a project within the vicinity of a private airstrip, result in a safety hazard for people residing or working in the project area.
- Impair or physically interfere with an adopted emergency response plan or emergency evacuation plan.
- Expose people or structures to a significant risk of loss, injury, or death involving wildland fires, including areas where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands.

Methods for Analysis

As described under *Regulatory Setting*, above, the use of hazardous materials is subject to numerous laws and regulations. In most cases, the laws and regulations pertaining to hazardous materials management minimize risks to human health and the environment. The impact analysis identifies areas where impacts related to the use of hazardous materials during Project construction and operation would be subject to applicable laws and regulations.

To assess the Project's potential to create a significant hazard for the public or environment related to subsurface hazardous materials, the impact analysis considers the potential pathways through which exposure to hazards could occur, based on the following reports:

- *Groundwater Monitoring of July 2013* by GRA Associates, Inc. (2013 [revised March 2014]);
- *Phase I Environmental Site Assessment and Preliminary Soil and Soil Vapor Quality Investigation* by Cornerstone (2014);
- *Soil Quality Investigation Building MPK21* by Cornerstone (2015a);
- *Soil Quality Investigation at Building 23 (MPK23)* by Cornerstone (2015b); and
- *Evaluation of Analytical Results from July 2013 Groundwater Monitoring Event, Tyco Electronics, Menlo Park, California* by Exponent (2013).
- *Preliminary Evaluation of Soil Vapor Sampling Performed by Cornerstone at the TE Menlo Park Site* by Exponent (2014).

As described in the *Environmental Setting* section, above, the soil investigations compared analytical results to one or more of the following health risk screening criteria for commercial workers: EPA RSLs with a Hazard Quotient of 0.1, EPA RSLs with a Hazard Quotient of 1.0, RWQCB ESLs, Cal/EPA CHHSLs, and natural background concentrations of metals. Although the same screening levels were not used in each soil investigation report, the findings of each soil investigation report were used for the impact analysis. The screening levels used for the commercial worker exposure scenario were also considered appropriate for conservatively evaluating potential health effects on patrons at the proposed hotel on the Project site because the expected duration of potential exposure to contaminants would be less for patrons than commercial workers.

As described in the *Environmental Setting* section, above, a preliminary HHRA was prepared to evaluate potential vapor intrusion concerns on the Project site, based on the analytical results from the 2014 soil gas investigation. The health effects estimated in the preliminary HHRA included cumulative cancer risk and non-carcinogenic health hazards (e.g., liver or kidney damage). The adverse health effects a person may experience following exposure to any chemical depend on several factors, including the amount to which one is exposed (i.e., dose), the duration of exposure, the form of the chemical, and if exposure to any other chemicals has occurred. A specific chemical may be considered a carcinogen or a health hazard or both (e.g., benzene is considered both a carcinogen and a health hazard).

Carcinogens are assumed to have no safe exposure threshold; cancer risk is the estimated probability of an individual developing cancer over a lifetime of exposure, expressed as chances per million people exposed. Non-carcinogenic substances are generally assumed to have a safe threshold below which health impacts would not occur. Acute exposure (less than 1 year) and chronic exposure (more than 1 year) to non-carcinogens is expressed as an HI, which describes the likelihood of adverse non-cancer health effects.

DTSC recommends using a cumulative incremental cancer risk threshold of 1E-06 (one in 1 million) and a non-carcinogenic HI threshold of 1.0 to identify site conditions that may require further assessment and/or cleanup. These thresholds were used in the impact analysis to evaluate the results of the preliminary HHRA with respect to potential vapor intrusion concerns on the Project site.

Impacts Not Evaluated in Detail

Cortese List Sites. The Cortese List is a compilation of several different lists of hazardous material release sites that meet criteria specified in Section 65962.5 of the California Government Code. Although there are documented releases of hazardous materials on the Project site, there are currently no hazardous materials release sites on the Project site that meet the criteria for inclusion on the Cortese List. Therefore, the Project would have ***no impact*** related to development on a hazardous materials release site included on the Cortese List, and this impact is not evaluated further.

Airport Hazards. The Project site is located approximately 2.4 miles northwest of the nearest public use airport, Palo Alto Airport. It is not located within the airport influence area; therefore, Project structures would not be considered a potential obstruction to aircraft that use Palo Alto Airport. In addition, there are no private airstrips within 2 miles of the Project site. Therefore, the Project would have ***no impact*** on the navigable airspace of public use airports or private airstrips, and this impact is not evaluated further.

Wildland Fires. The Project site is surrounded by urban development to the east, south, and west and separated from the salt ponds, marsh, and Bay by Bayfront Expressway/SR 84 (Bayfront Expressway). Therefore, the Project site is not mapped in or adjacent to a Very High Fire Hazard Severity Zone. The Project would have no impact related to wildland fire hazards. This impact is not evaluated further.

Impacts and Mitigation Measures

Impact HAZ-1: Routine Hazardous Materials Use. The Project would not create a significant hazard to human health and/or the environment through the routine transport, use, or disposal of hazardous materials. (LTS)

Project construction activities are expected to involve the routine transport, use, and disposal of hazardous materials (e.g., motor fuels, paints, oils, and grease) that could pose a significant threat to human health or the environment if not properly managed. Although small amounts of these materials

would be transported, used, and disposed of during Project construction, these materials are typically used in construction projects and are not considered acutely hazardous. Workers who handle hazardous materials are required to adhere to OSHA and Cal/OSHA health and safety requirements. Hazardous materials must be transported to and from the Project site in accordance with RCRA and USDOT regulations and disposed of in accordance with RCRA regulations at a facility that is permitted to accept the waste. Because compliance with existing regulations is mandatory, Project construction is not expected to create a significant hazard to public health or the environment through the routine transport, use, or disposal of hazardous materials.

During Project operation, it is anticipated that the Project would involve the use of hazardous materials that are typical of office uses (e.g., solvents, cleaning agents, paints, petroleum fuels, propane, batteries, etc.). These would be used in small, localized amounts. As described above, routine transport, use, and disposal of hazardous materials are subject to federal and state regulations. On the local level, the San Mateo County Department of Environmental Health is the CUPA that implements regulatory programs for sites that routinely use hazardous materials to ensure the safe storage, management, and disposal of such materials in accordance with the Unified Program. Because compliance with existing laws, regulations, and CUPA programs is mandatory, Project operations are not expected to create a significant hazard to public health or the environment through the routine transport, use, or disposal of hazardous materials. As a result, impacts related to the routine transport, use, or disposal of hazardous materials during Project construction and operation would be ***less-than-significant***. Impacts related to potential accidental releases of hazardous materials during routine (and non-routine) activities are discussed under Impact HAZ-2, below.

Impact HAZ-2: Upset and Accident Conditions Involving Hazardous Materials. The Project could create a potentially significant hazard to human health and/or the environment involving the release of hazardous materials. (LTS/M)

Potential accident conditions resulting in the release of hazardous materials used during general construction, operation, and building demolition activities, as well as potential upset conditions involving the disturbance of naturally occurring asbestos and contaminated groundwater, soil, and soil gas, are discussed below.

Accidental Hazardous Materials Releases during Construction and Operation

The accidental release of hazardous materials during Project construction and operation activities could pose a significant threat to human health or the environment. As described under Impact HAZ-1, above, the use of hazardous materials would be subject to existing hazardous materials laws, regulations, and CUPA programs. Adherence to these standards would also reduce the potential for an accidental release. In addition, a Stormwater Pollution Prevention Plan (SWPPP) must be prepared and implemented during Project construction for coverage under the Construction General Permit, in accordance with the requirements of the SWRCB. As detailed in Section 3.10, *Hydrology and Water Quality*, the SWPPP requires implementation of best management practices for hazardous materials storage and soil stockpiles, inspections, maintenance, training of employees, and containment of releases to prevent runoff into existing stormwater collection systems or waterways. Because compliance with existing regulations is mandatory, accidental hazardous materials releases during construction and operation would have a ***less-than-significant*** impact on human health and/or the environment.

Accidental Hazardous Materials Releases during Building Demolition

The Project includes demolition of Buildings 301–306 and the Chemical Transfer Facility, which could result in the release of hazardous building materials into the environment. Renovation and demolition of Building 23 and Buildings 307–309, respectively, would not occur as part of the Project but are considered in the *Cumulative Impacts* section, below. The removal of existing hazardous materials stored on the Project site would not occur as part of the Project; however, the removal of these hazardous materials would be done in accordance with federal and state laws and regulations prior to Project demolition.

As summarized in Table 3.11-3, Buildings 301–303 and Buildings 305–306 were constructed prior to 1981; therefore, ACMs may be present in these structures. LBPs and other hazardous materials, which would be considered universal wastes during demolition activities, could be present in all buildings that would be demolished under the Project. The removal of hazardous building materials prior to demolition is governed by federal and state laws and regulations. Workers who conduct hazardous materials abatement and demolition activities must be trained in accordance with state and federal OSHA requirements. Hazardous building materials removed during demolition must be transported in accordance with USDOT regulations and disposed of in accordance with RCRA regulations and/or the California Universal Waste Rule at a facility that is permitted to accept the wastes. Because compliance with existing laws and regulations is mandatory, the Project would have a ***less-than-significant*** impact on human health and/or the environment related to ACMs, LBPs, or other common hazardous materials during building demolition activities.

Disturbance of Subsurface Hazardous Materials

As described below, previous investigations have identified naturally occurring asbestos and potential contaminants of concern in groundwater, soil, and soil gas, which could have potentially significant health effects on future users of the Project site if not properly managed.

Naturally Occurring Asbestos

As described in the *Environmental Setting*, previous geotechnical investigations performed on the Project site have encountered approximately 2 to 6 feet of undocumented fill, consisting predominantly of serpentinite (an altered ultramafic rock), which could contain naturally occurring asbestos. Five bulk samples and three 4-point composite bulk samples from across the Project site have been collected and analyzed for asbestos. The asbestos content was reported to be less than 0.10 percent in all five bulk samples and less than 0.25 percent in two of the composite samples; however, the presence of asbestos was confirmed in one composite sample collected beneath the northwest portion of Building 23 and the parking lot north of Building 23. However, excavation around Building 23 is not considered to be part of the Project. The disturbance of naturally occurring asbestos during Project construction and maintenance activities (e.g., excavation, grading, soil stockpiling) could generate asbestos-containing dust and pose an inhalation hazard for workers and the public. The exposure of Project construction workers, maintenance workers, commercial workers, and/or the public to asbestos can result in lung cancer, mesothelioma (cancer of the linings of the lungs and abdomen), and asbestosis (scarring of lung tissues that results in constricted breathing). If naturally occurring asbestos is encountered during construction, then dust control measures must be implemented in accordance with CARB's Asbestos ATCM for Construction, Grading, Quarrying, and Surface Mining Operations. Therefore, the disturbance of naturally occurring asbestos during Project construction activities could have a ***less-than-significant*** impact on human health.

Groundwater Quality

As described in the *Environmental Setting*, the results of GRA's 2013 groundwater monitoring event at the former Raychem site, which includes the Project site, indicate that there are elevated concentrations of chlorinated solvents, chlorobenzene, and Freon 113 in groundwater from former industrial activities. Two VOC plumes, generally oriented from west to east, appear to cover a large portion of the Project site. One plume is located in the northeast portion of the Project site and extends beneath Building 301, and the other plume extends beneath Buildings 305–309. Relative to previous monitoring events, the VOC plumes appear to be stable (i.e., not increasing) and/or are reducing over time.

Because of the high concentrations of TDS in the shallow water-bearing zone beneath the Project site, the groundwater is not considered a potential source of drinking water. Therefore, ingestion of contaminated groundwater is not considered as a potential exposure pathway on the Project site. Given Exponent's 2013 HHRA, potential vapor intrusion of VOCs from groundwater to indoor air does not appear to pose an unacceptable health risk for commercial workers on the Project site. This analysis did not consider potential vapor intrusion from soil gas, which is discussed below.

Depth to groundwater ranges from about 6 to 9 feet bgs; therefore, construction and/or maintenance workers could come into direct contact with contaminated groundwater during Project excavation and dewatering. Contaminated groundwater encountered during Project construction and maintenance activities could have a ***potentially significant*** impact on the health of the workers and the environment.

Soil Quality

As described in the *Environmental Setting* and summarized in Table 3.11-1, the findings of Cornerstone's recent soil investigations indicate that there are concentrations of PCBs, TPHg, TPHd, TPHmo, and lead in soil across the Project site that exceed human health risk screening levels for commercial worker exposure scenarios. The source and extent of soil contamination in each Area of Concern summarized in Table 3.11-1 have not been defined. The presence of soil contamination on the Project site could have a ***potentially significant*** impact on the health of commercial workers and hotel patrons who come into direct contact with the contaminated soil.

Soil Gas Quality

As described in the *Environmental Setting* and summarized in Table 3.11-2, Exponent's 2014 preliminary HHRA evaluated potential health effects on commercial workers from vapor intrusion of VOCs from soil gas to indoor air.[43] The preliminary HHRA modeled a site-specific exposure scenario and a DTSC-default exposure scenario. Under the site-specific exposure scenario, the preliminary HHRA estimated a maximum cumulative cancer risk of 5E-06 from a sample collected near Building 305, which exceeds DTSC's recommended cancer risk threshold of 1E-06. Under the DTSC-default exposure scenario, the preliminary HHRA estimated a maximum cumulative cancer risk of 3E-05 and a non-carcinogenic HI of 2 from a sample collect near Building 305, which exceed DTSC's recommended thresholds of 1E-06 and 1.0, respectively. However, these findings are based on the assumption that vapors are migrating into an enclosed at-grade structure. The Project design includes at-grade open-air podium parking areas beneath each building. The free flow and exchange of air through the podium parking structures would be expected to ventilate potential vapors into the atmosphere and not into the overlaying structure. Because of the incomplete exposure pathway, VOC vapor intrusion from soil gas to indoor air would have a ***less-than-significant*** impact on the health of commercial workers and hotel patrons at the Project site.

[43] Exponent. 2014. *op. cit.*

Summary of Findings

As described above, the following conditions associated with hazardous materials could pose unacceptable hazards to future users of the Project site and/or the environment:

- Contaminated groundwater encountered during Project construction and maintenance activities could have a ***potentially significant*** impact on the health of construction workers and maintenance workers.
- Soil contamination on the Project site could have a ***potentially significant*** impact on the health of commercial workers and hotel patrons.

The LUC that was recorded for the former Raychem site requires any activities that disturb the soil (e.g., excavation and grading) to be permitted only pursuant to a Soil Management Plan(s) and a Health and Safety Plan(s) after approval from DTSC. The Soil Management Plan(s) must describe how contaminated soil that is brought to the surface by grading, excavation, trenching, or backfilling will be managed in accordance with applicable provisions of state and federal laws. The soil management measures described in the OMMP approved by DTSC in 2006 satisfy the LUC requirements for a Soil Management Plan. Although the LUC and OMMP include measures to help protect construction workers who may encounter hazardous materials in soils, they do not include measures for managing contaminated groundwater encountered during construction and maintenance activities, characterizing the source and extent of soil contamination discovered during recent investigations, or evaluating and mitigating (if necessary) potential health effects of subsurface contamination discovered during recent investigations on the Project site on commercial workers, and hotel patrons.

In accordance with the LUC and OMMP, Cornerstone prepared a Soil Management Plan for proposed Building 21, located at the site of Buildings 307, 308, and 309. The plan was approved by DTSC in November 2015. Given the findings of recent soil and groundwater quality investigations, the Soil Management Plan includes protocols for managing both known and potentially undocumented residual soil and groundwater contamination that may be encountered during the construction of Building 21. Soil Management Plans have not yet been prepared for the remainder of the Project site.

MITIGATION MEASURES. The Project Sponsor shall implement the following measures to reduce significant impacts related to hazardous materials to a ***less-than-significant*** level.

HAZ-2.1: Soil and Groundwater Management. Soil Management Plans that cover the entire Project site shall be prepared and implemented. These Soil Management Plans shall, as appropriate, incorporate the analytical results from the most recent groundwater monitoring event and soil investigations and include protocols for managing both known and potentially undocumented residual soil and groundwater contamination that may be encountered during Project construction, including naturally occurring asbestos. The Soil Management Plans shall include dust control measures that describe how construction and grading operations will minimize dust emissions and ensure that no equipment or operations will emit visible dust across the property line. Although naturally occurring asbestos has not been detected in areas of the Project site that could be disturbed during construction, in accordance with CARB's Asbestos ATCM for Construction, Grading, Quarrying, and Surface Mining Operations, if naturally occurring asbestos is encountered during construction, then dust control measures must meet the requirements of an ADMP approved by the BAAQMD. These Soil Management Plans shall be approved by DTSC and implemented during Project construction.

HAZ-2.2: *Additional Site Investigation*. If required by DTSC, additional site investigations shall be performed to delineate the source and extent of contamination on the Project site. At DTSC's discretion, these investigations may be incorporated into the Soil Management Plans required by DTSC for the Project site. The analytical results shall be compared to risk-based human health screening levels approved by DTSC. The site investigation(s) shall be prepared and evaluated by a licensed professional, and a technical report summarizing the field activities, results, and conclusion shall be submitted to DTSC for review and approval prior to issuance of building permits.

HAZ-2.3: *Remedial Action*. According to the results of additional site investigations (if any), the Project Sponsor shall coordinate with DTSC to select and implement remedial actions (as necessary) to protect future site users from conditions that could pose an unacceptable health risk. Remedial measures may include, but are not limited to, source removal of contaminated materials, in-situ treatment, engineering controls, and/or modification of institutional controls described in the existing LUC for the Project site. Remedial actions shall be implemented prior to building occupancy. At DTSC's discretion, remedial actions may be completed during implementation of the Soil Management Plans required by DTSC for the Project site.

Impact HAZ-3: Exposure to Schools. The Project would not create a potentially significant hazard for children at nearby schools from emissions or handling hazardous or acutely hazardous materials. (LTS)

The handling or emission of hazardous or acutely hazardous materials near schools must consider potential health effects on children, who are considered sensitive receptors. There are two schools within 0.25 mile of the Project site: Belle Haven Elementary and Beechwood School. The only plausible exposure pathway of concern for children at nearby schools is through the inhalation of air contaminants, such as particulate matter.

As discussed in Section 3.4, *Air Quality*, sources of hazardous emissions during Project construction and operation would include diesel particulate matter from vehicle exhaust and emergency generators. These emission sources would have a less-than-significant impact on nearby schools. As discussed under Impact HAZ-1, above, hazardous materials used during construction and operation would be managed in accordance with applicable laws and regulations. As discussed under Impact HAZ-2, Project construction and maintenance activities that generate dust could expose people to naturally occurring asbestos and/or soil contaminants from former industrial activities on the Project site. Because implementation of CARB's Asbestos ATCM for Construction, Grading, Quarrying, and Surface Mining Operations is required to ensure that Project equipment and operational activities do not emit visible dust across the property line, dust from the Project would not be expected to migrate to offsite. Therefore, the handling or emission of hazardous or acutely hazardous materials during Project construction and operation would have a ***less-than-significant*** impact on nearby schools.

Impact HAZ-4: Impairment of Emergency Response or Evacuation Plans. The Project would not impair implementation of or physically interfere with an adopted emergency response or evacuation plan. (LTS)

As discussed in Section 3.4, *Transportation*, the Project would increase traffic in the vicinity of the Project site. Station 77, located at 1467 Chilco Avenue, south of the Project site, is expected to serve the Project site. The driving distance between Station 77 and the Project site is about 0.6 mile, and the

Project site is accessible via Chilco Avenue. It is unlikely that added Project traffic would result in congestion along Chilco Avenue that could significantly affect response times. Menlo Park Fire Protection District (MPFPD) response times in the vicinity of the Project site could be affected because of existing and future congestion at the Bayfront Expressway/Willow Road intersection. However, there are emergency vehicle priority (Opticom) systems in place at all Willow Road approaches from Middlefield Road to Bayfront Expressway. Because traffic preemption devices are already installed at all these locations, it is not anticipated that the increase in traffic in the area would significantly affect response times.

The City of Menlo Park has adopted a Local Hazard Mitigation Plan and Emergency Operation Plan. As described in the adopted plans, the MPPD is responsible for coordinating emergency response and evacuation procedures in the event of a major disaster. As discussed in Section 3.3, *Transportation*, the Project would increase traffic in the vicinity of the Project site. Currently, the Project site is accessed by one ingress/egress point on Chilco Street. The Project would improve emergency vehicle circulation throughout the Project site. Emergency vehicle and fire truck access would be provided along the outside perimeter of the office buildings. Along Chilco Street, emergency vehicles would access the site from the existing stop sign–controlled driveway. In addition, emergency vehicles would access the site from a new signalized intersection on SR 84, at the midpoint of the Project site, as well as from two points on Chilco Street. Because the Project would improve emergency access and not alter local roadways that connect to nearby major arterial roadways or result in permanent road closures, the Project would not be expected to interfere with emergency response and evacuation plans in the Project vicinity. Therefore, the Project would have a ***less-than-significant*** impact on emergency response or evacuation plans.

Cumulative Impacts

Cumulative impacts occur when impacts from a proposed project combine with similar impacts from other past, present, or reasonably foreseeable projects in a similar geographic area. The geographic context for cumulative impacts related to hazards and hazardous materials is the Project site and the sites of other nearby projects, as discussed in Chapter 3, *Environmental Impact Analysis*. Cumulative impacts are addressed only for those conditions that would result in a Project-related impact, whether it be less than significant, significant, or significant and unavoidable. If the Project would result in no impact with respect to a particular threshold, it would not contribute to a cumulative impact. Given the analysis of Project-related impacts, above, cumulative impacts related to Cortese List sites, airport hazards, and wildland fires would not be significant because the Project would not contribute to these impacts.

Impact C-HAZ-1: Cumulative Hazardous Materials Management and Accidental Releases. Construction and operation of the Project and other development would not create a significant hazard to human health and/or the environment involving the management or release of hazardous materials. (LTS)

The Project impacts identified above related to the management and potential release of hazardous materials during construction, operation, and building demolition are site specific. These hazardous materials would be managed in accordance with existing regulatory requirements, which would reduce the risk of hazardous materials emissions and/or accidental releases that could affect receptors outside the Project work areas. Therefore, the Project would not be expected to contribute to any potential hazardous materials impacts at other nearby project sites. Although renovation of Building 23 and demolition of Buildings 307–309 would occur at the Project site, these projects would not overlap with

construction or operation of the Project, resulting less-than-significant cumulative impacts. Similarly, hazardous materials impacts from other nearby projects would not be expected to intensify potential impacts on the Project site because they, too, would be site specific. This would be a ***less-than-significant*** cumulative impact.

Impact C-HAZ-2: Cumulative Subsurface Hazardous Materials. Construction and operation of the Project and other development would not create a significant hazard to human health and/or the environment involving the disturbance of subsurface hazardous materials. (LTS)

Project impacts identified above related to the disturbance of hazardous materials encountered in the subsurface during construction and operation are site specific. These hazardous materials would be managed in accordance with existing regulatory requirements, which would reduce the risk of hazardous materials dust emissions and/or accidental releases that could affect offsite receptors; therefore, the Project would not be expected to contribute to any potential hazardous materials impacts at other nearby projects. Similarly, hazardous materials impacts from other nearby projects would not be expected to intensify potential impacts on the Project site because they, too, would be site specific. There would be a ***less-than-significant*** cumulative impact.

Impact C-HAZ-3: Cumulative Impairment of Emergency Response or Evacuation Plans. Construction and operation of the Project and other development would not impair implementation of or physically interfere with an adopted emergency response or evacuation plan. (LTS)

The Project would improve emergency access to the Project site and would not alter local roadways that connect to nearby major arterial roadways or result in permanent road closures. Emergency response times are not expected to be affected by the Project. All development in the city is required to adhere to applicable safety standards regarding emergency response. Cumulative impacts are less than significant. Furthermore, because of the Project's compliance with applicable standards, it would not be expected to contribute to cumulative impacts related to the impairment of emergency response or evacuation plans. This is considered a ***less-than-significant*** cumulative impact.

3.12 Population and Housing

This section provides background information on existing and projected population, employment, and housing conditions in the Menlo Park and estimates changes to the city's demographics that would result from the Facebook Campus Expansion Project (Project). The analysis is based on population, employment, and housing data published in *Projections 2013* by the Association of Bay Area Governments (ABAG)[1] and other demographic information from the Demographic Research Unit of the California Department of Finance (DOF) and the U.S. Census Bureau (U.S. Census). In addition, the Housing Element Update in the City of Menlo Park (City) General Plan is included in this analysis. The analysis also incorporates information from the Housing Needs Analysis (HNA) for the Project prepared by Keyser Marston Associates (Appendix 3.12).[2]

The purpose of this section is to characterize the potential for Project-induced population, housing, and employment changes to trigger physical environmental effects; these potential environmental impacts are examined in other sections of this Draft Environmental Impact Report (EIR) (for example, Sections 3.3, *Transportation and Traffic*; 3.4, *Air Quality*; 3.6, *Noise*; 3.13, *Public Services*; and 3.14, *Utilities and Service Systems*).

Issues identified in response to the Notice of Preparation (NOP) (Appendix 1) were considered in preparing this analysis. Applicable issues that were identified pertain to affordable housing, office space density and use, growth-inducing impacts, jobs/housing balance, displacement of residents, and a significant increase in the number of employees as a result of the Project. The jobs/housing balance is discussed in Section 3.1, *Land Use and Land Use Planning*.

Existing Conditions

Regulatory Setting

State

State Housing Element Law. The Regional Housing Needs Allocation (RHNA) is a process established under the State Housing Element law that requires cities in California to plan for the future development of new housing units to meet their share of their regional housing needs. Housing needs for each region in the state are determined by the State Department of Housing and Community Development (HCD) and submitted to Councils of Government for allocation to local jurisdictions. ABAG is ultimately responsible for determining the share of regional housing needs to be met by each city in the San Francisco Bay Area (Bay Area). State housing law has established three housing affordability categories. The categories are based on the region's median income, taking into account households ranging in size from one to six people. These three affordability categories are used by ABAG in allocating regional housing needs.

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[1] ABAG data presented in Projections 2013 are a function of the following four elements: (1) ABAG Executive Board policies, which are based on the Smart Growth Vision; (2) general plan policies for each particular jurisdiction; (3) economic trends; and (4) available land and prevailing land use pattern data, which are based on discussions between ABAG staff members and the planning staff in each particular jurisdiction.

[2] Keyser Marston Associates, Inc. 2016. *Housing Needs Analysis, Menlo Park Facebook Campus Project*. May.

- Very Low: 0 to 50 percent of the area's median income
- Low: 50 to 80 percent of the area's median income
- Moderate: 80 to 120 percent of the area's median income

Currently, the existing RHNA identifies allocated housing units for the 2014 to 2022 period. As shown in Table 3.12-1, ABAG identified 655 units (defined by income category) as the city's fair share of the regional housing need for the 2014 to 2022 period.[3] The City updated its Housing Element in April 2014.

Table 3.12-1. ABAG Regional Housing Need Allocation for 2014–2022

Income Level	Menlo Park Need	San Mateo County Need	Regional Need
Very Low	233	4,595	46,680
Low	129	2,507	28,940
Moderate	143	2,830	33,420
Subtotal of Affordable Units	*505*	*9,932*	*109,040*
Above Moderate[a]	150	6,486	78,950
Total	**655**	**16,418**	**187,990**

Source: Association of Bay Area Governments (ABAG). 2013. *Regional Housing Need Plan for the San Francisco Bay Area: 2014–2022.* Adopted: July 18, 2013.

Notes:

a. Above Moderate: Households with incomes greater than 120 percent of county median family income. ABAG does not use the Above Moderate category. This category is included in the RHNA and in the analysis below to provide decision-makers with more information on the housing impacts for a broad spectrum of the new-worker households associated with the Project.

Sustainable Communities Strategy and Senate Bill (SB) 375. SB 375, adopted in 2008, requires preparation of a Sustainable Communities Strategy (SCS) as part of the Regional Transportation Plan (RTP) for the Bay Area. Plan Bay Area, the SCS for the region, was jointly approved in July 2013 by ABAG and the Metropolitan Transportation Commission (MTC). Plan Bay Area represents a transportation and land use/housing strategy for how the Bay Area will address its transportation mobility and accessibility needs, land development, and greenhouse gas emissions reduction requirements through 2040. SB 375 requires that the RHNA be consistent with the SCS and establishes an 8-year cycle for the RHNA. The 2014–2022 RHNA has been incorporated into Plan Bay Area.[4]

Local

Jobs Housing Connection Strategy Methodology for 2013–2040 Plan Bay Area. The Jobs Housing Connection Strategy was adopted by ABAG and MTC as part of Plan Bay Area in July 2013. The Jobs Housing Connection Strategy reflects the preferred land use pattern, which was selected from a series of land use alternatives and based on input from the public, cities and counties, and transportation

[3] Association of Bay Area Governments. 2013. *Regional Housing Need Plan for the San Francisco Bay Area: 2014–2022*. Adopted July 18, 2013.

[4] Association of Bay Area Governments and Metropolitan Transportation Commission. 2013. *Plan Bay Area: Strategy for a Sustainable Region.* Adopted July 18, 2013.

agencies. The preferred scenario aims to concentrate growth near transit-served employment centers in the inner Bay Area. For the SCS, the methodology used for assigning household growth to local jurisdictions incorporates multiple factors, including housing development capacity, base housing unit growth, vehicle miles traveled/transit service adjustment, and additional growth factors.

City of Menlo Park General Plan. All California cities and counties are required to include a Housing Element in their general plans that establishes housing objectives, policies, and programs in response to community housing conditions and needs. The City updated and adopted its Housing Element on April 1, 2014, which was prepared to respond to current and near-term future housing needs in Menlo Park. The Housing Element also provides a framework for the community's longer-term approach to addressing its housing needs. The Housing Element contains goals, updated information, and strategic directions (policies and implementing actions) that the City is committed to undertaking.[5] There are no goals or policies in the City's General Plan or Housing Element that relate specifically to the Project.

State Housing Element Law requires the general plan of a city to have an updated Housing Element that provides for a specified number of housing units, based on an allocation of regional housing needs. The allocation process is now set to occur every 8 years, as discussed above. ABAG is responsible for the allocation in the Bay Area; however, San Mateo County (County) has taken advantage of the option to manage its own "sub-regional" allocation process.

The following policies within the Housing Element of the City's General Plan are relevant to the Project:

> *Policy H1.7: Local Funding for Affordable Housing*. Seek ways to reduce housing costs for lower-income workers and people with special needs by developing ongoing local funding resources and continuing to utilize other local, state, and federal assistance to the fullest extent possible. The City will also maintain the Below Market Rate (BMR) housing program requirements for residential and nonresidential developments.
>
> *Policy H4.10: Inclusionary Housing Approach*. Require residential developments involving five or more units to provide units or an in-lieu fee equivalent for very low-, low-, and moderate-income housing. The units provided through this policy are intended for permanent occupancy and must be deed restricted, including, but not limited to, single-family housing, multi-family housing, condominiums, townhouses, or land subdivisions. In addition, the City will require larger nonresidential developments, as job generators, to participate in addressing housing needs in the community through the City's commercial in-lieu fee requirements.

ConnectMenlo. The City General Plan (Land Use and Circulation Elements) and M-2 Area Zoning Update, also known as ConnectMenlo, is under way. Although not yet adopted, the following draft policies in ConnectMenlo pertain to the Project and are identified for informational purposes.

> *Policy LU-4.1: Priority Commercial Development.* Encourage emerging technology and entrepreneurship, and prioritize commercial development that provides fiscal benefit to the city, local job opportunities, and/or goods or services needed by the community.
>
> *Policy LU-4.4: Community Amenities.* Require mixed-use and nonresidential development of a certain minimum scale to support and contribute to programs that benefit the community and the city, including education, transit, transportation infrastructure, sustainability, neighborhood-serving amenities, child care, housing, job training, and meaningful employment for Menlo Park youth and adults.

[5] City of Menlo Park. 2014. *Housing Element*. April 1, 2014.

Environmental Setting

Population

Menlo Park is located in the southern portion of the county and bound by the Bay to the north, East Palo Alto to the east, Palo Alto to the east and south, Woodside and Portola Valley to the southwest, and Redwood City to the west. The city encompasses approximately 19 square miles, including nearly 12 square miles of the San Francisco Bay and wetlands. The city's jurisdictional population was estimated to be 33,273 as of January 1, 2015. The California DOF estimates that the city currently averages approximately 2.61 persons per household (pph).[6] Table 3.12-2 presents population estimates and projections for 2015 and 2020 for Menlo Park (sphere of influence),[7] San Mateo County, and the Bay Area (Marin, Sonoma, Napa, Solano, Contra Costa, Alameda, Santa Clara, San Mateo, and San Francisco Counties).

Table 3.12-2. Population Trends in Menlo Park, San Mateo County, and the Bay Area, 2015–2020

	2015	2020	Growth (2015–2020)
Menlo Park	37,700	38,700	1,000 (2.7%)
San Mateo County	745,400	775,100	29,700 (4.0%)
Bay Area	7,461,400	7,786,800	325,400 (4.4%)

Source: Association of Bay Area Governments (ABAG). 2013. *Projections 2013*. December.

The data indicate that the population growth from 2015 to 2020 in Menlo Park (2.7 percent) would be less than the population growth of the county and the Bay Area as a whole (about 4.0 percent and 4.4 percent, respectively). These projections suggest, in part, that the residential areas of the city are more built out than other communities in the county and Bay Area.

[6] California Department of Finance. 2015. *E-5 City/County Population and Housing Estimates.* Table 2. Available: <http://www.dof.ca.gov/research/demographic/reports/estimates/e-5/2011-20/view.php>. Accessed: September 11, 2015.

[7] Several additional unincorporated areas adjoining the city are recognized as being within the city's sphere of influence and, therefore, are included in the City's General Plan. In California, *sphere of influenc*e has a legal meaning as a plan for the probable physical boundaries and service area of a local agency. Spheres of influence at California local agencies are regulated by Local Agency Formation Commissions (LAFCOs) that recognize the unincorporated communities that would be best and most likely served by the city agencies. Hence, the spheres of influence represent areas with the greatest potential for annexation by a city. In most cases, ABAG provides more detailed demographic and employment projections for a city's sphere of influence than for small cities such as Menlo Park. Consequently, unless otherwise specifically noted, all city data represent the city sphere of influence because only limited demographic data are available for the city's incorporated area. The sphere of influence designation for the city includes unincorporated West Menlo Park, Stanford Weekend Acres, Menlo Oaks, as well as the Stanford Linear Accelerator Center (SLAC). With the exception of SLAC, these areas are zoned residential and are substantially developed. All ABAG projections in this section for the city include the sphere of influence.

Housing

According to the California DOF, the estimated number of housing units in the city (jurisdictional boundary) as of January 1, 2015, was 13,180, with an average household size of 2.61 pph and a vacancy rate of 5.6 percent.[8] Table 3.12-3 presents ABAG projections for households in the Bay Area, the county, and the city (sphere of influence) for 2015 and 2020. According to ABAG, the number of households in the county is projected to grow from approximately 267,150 units in 2015 to 277,200 units in 2020, an increase of approximately 3.8 percent. The number of households in the city is projected to grow from approximately 14,490 units in 2015 to 14,870 units in 2020, an increase of approximately 2.6 percent. Overall, the household growth rate in the city (2.6 percent) is expected to be below the household growth rate for the county (3.8 percent) and the Bay Area (4.3 percent).

Table 3.12-3. Household Trends in Menlo Park, San Mateo County, and the Bay Area, 2015–2020

	2015	2020	Growth (2015–2020)
Menlo Park[a]	14,490	14,870	380 (2.6%)
San Mateo County	267,150	277,200	10,050 (3.8%)
Bay Area	2,720,410	2,837,680	117,270 (4.3%)

Source: Association of Bay Area Governments. 2013. *Projections 2013*. December.
Note:
a. Household data are based on the city's sphere of influence, which also includes unincorporated areas of San Mateo County.

Housing prices in the Bay Area are among the highest in the country, and the county has several of the most expensive residential communities in the Bay Area. Menlo Park is one of the more desirable communities within the county, and as a result, home prices exceed the county levels. The median single-family home price in Menlo Park in 2012 was $1.468 million. This represents a 10 percent increase from the previous year, when the median single-family home price in Menlo Park was $1.339 million. The median price of a condominium was relatively more affordable, at $903,950 in 2012, but that was a 24 percent increase from 2011 when the median price of a condominium was $726,150. The median single-family home price in the county in 2012 was $660,944, and for California as a whole, it was $305,727.[9]

Employment

The employment profile for an area provides an indication of the composition of an area's economy and the present and future demand for employees. The county is a productive economic area, which is led by technology-driven, bioscience, and service industries. According to the HNA, the county averages approximately 1.80 employees per worker household.[10] Approximately 68 percent of Menlo Park residents age 16 and older were in the work force in 2010, nearly identical to the county rate and a few

[8] California Department of Finance. 2015. *E-5 City/County Population and Housing Estimates*. Table 2. Available: <http://www.dof.ca.gov/research/demographic/reports/estimates/e-5/2011-20/view.php>. Accessed: September 11, 2015.
[9] City of Menlo Park. 2014. *Housing Element*. April 14.
[10] Keyser Marston Associates, Inc. 2016. *Housing Needs Analysis, Menlo Park Facebook Campus Project*. May.

percentage points higher than the state rate. Most residents who are in the workforce (68 percent) are in management, business, science, or art-related occupations, which is significantly more than the rate in the county or the state. According to the U.S. Census Bureau's employment industry analysis, many Menlo Park residents (28 percent) work in education, health care, or social assistance. The next most common category, with 23 percent of residents, is professional, scientific, and management industries.[11]

The county was negatively affected by the economic downturn of the dot-com industry and again more recently by the housing mortgage/financial crises. Nonetheless, steady employment growth is expected between 2015 and 2020. The following tables present ABAG's employment projections; these data are used in the analysis presented below. More recent existing employment data are available from the U.S. Census that indicate there are currently 30,566 jobs in the city.[12] However, because the U.S. Census does not provide projections, Table 3.12-4 presents only ABAG employment projections for the city, the county, and the Bay Area.

Table 3.12-4. Employment Trends in Menlo Park, San Mateo County, and the Bay Area, 2015–2020 (Total Number of Jobs)

	2015	2020	Growth (2015–2020)
Menlo Park[a]	31,920	34,130	2,210 (6.9%)
San Mateo County	374,940	407,550	32,610 (8.7%)
Bay Area	3,669,990	3,987,150	317,160 (8.6%)

Source: Association of Bay Area Governments. 2013. *Projections 2013*. December.
Note:
a. The number of jobs is based on the city's sphere of influence, which also includes unincorporated areas of San Mateo County.

As indicated in Table 3.12-4, the ABAG projections from 2015 and 2020 show a steady increase in employment in the Bay Area (8.6 percent). The county shows a slightly higher employment growth than the rest of the Bay Area (8.7 percent), and the city shows a lower rate of employment growth (6.9 percent) than the Bay Area and county.

Table 3.12-5 compares the projected total number of jobs available in the city to the projected number of employed residents in the city. According to ABAG projections, the number of employed residents in the city is currently 56.7 percent of the available number of jobs in the city. In the next five years, the number of jobs to employed residents is expected to remain relatively constant, decreasing only slightly to 56.6 percent. ABAG projections predict gradual employment growth for both the city, as shown in Table 3.12-5, and the county.

[11] City of Menlo Park. 2014. *Housing Element*. April 14.
[12] U.S. Census Bureau, American Fact Finder, American Community Survey. 2011–2013. *Sex of Workers by Means of Transportation to Work for Workplace Geography* (2011–2013 ACS 3-year Estimates, ID B08406). Available: <http://factfinder.census.gov/faces/nav/jsf/pages/searchresults.xhtml?refresh=t >. Accessed: September 11, 2015.

Table 3.12-5. Comparison of Number of Jobs to Employed Residents in Menlo Park, 2015-2020

	2015	2020
Jobs[a]	31,920	34,130
Employed Residents[a]	18,090	19,310
Percent of Employed Residents to Total Number of Jobs	56.7	56.6

Source: Association of Bay Area Governments. 2013. *Projections 2013*. December.

Note:

a. The number of jobs and employed residents is based on the city's sphere of influence, which also includes unincorporated areas of San Mateo County.

Because the city's housing prices are high, many people who work in the city cannot afford to live in the city. Consequently, people who work in the community often must commute long distances. To afford the median priced home in the city, a family would need to make more than $260,000 annually, and to afford a home that rents for $3,000, a family would need to earn more than $125,000 annually. The difference between what the workforce and the community can pay for housing based on household income and what the prices are for homes in the community is referred to as an *affordability gap*. The affordability gap in the city is significant.[13] Approximately 7.6 percent of the people who currently work in the city also live in the city.[14]

Environmental Impacts

This section describes the impact analysis related to population and housing for the Project. It describes the methods used to determine the impacts of the Project and lists the thresholds used to measure whether an impact would be significant. Impacts are determined to be either no impact (NI), less than significant (LTS), less than significant with mitigation (LTS/M), or significant and unavoidable (SU). Measures to mitigate (i.e., avoid, minimize, rectify, reduce, eliminate, or compensate for) significant impacts accompany each impact discussion, as needed.

Thresholds of Significance

In accordance with Appendix G of the California Environmental Quality Act (CEQA) Guidelines, the Project would be considered to have a significant effect if it would result in any of the conditions listed below.

- Induce substantial population growth in an area, either directly (e.g., by proposing new homes or businesses) or indirectly (e.g., through the extension of roads or other infrastructure).
- Displace a substantial number of existing housing units, necessitating the construction of replacement housing elsewhere.
- Displace a substantial number of people, necessitating the construction of replacement housing elsewhere.

[13] City of Menlo Park. 2014. *Housing Element*. April 1.

[14] Keyser Marston Associates, Inc. 2016. *Housing Needs Analysis Menlo Park Facebook Campus Project*. May.

Methods for Analysis

This analysis considers whether population and household growth would occur with implementation of the Project and whether this growth is within the forecasts for the city and/or can be considered substantial with respect to remaining growth potential in the city. This section uses ABAG projections to analyze the Project's impacts.

An HNA prepared by Keyser Marston Associates (Appendix 3.12) has been applied for the analysis in the Draft EIR.[15] U.S. Census, U.S. Bureau of Labor Statistics, and California Employment Development Department data were used in preparation of the HNA. The HNA presents the anticipated housing needs associated with the Project. Both increased demand for housing and potential increased housing unit allocations are addressed. The HNA is part of a range of analyses that will be used in the decision-making and entitlement process for the Project.

Indirect or secondary impacts are those that are caused by a project and are later in time or farther removed in distance, but are still reasonably foreseeable. Indirect or secondary effects may include growth-inducing effects and other effects related to induced changes in the pattern of land use, population density, or growth rate (CEQA Guidelines, Section 15358(a)(2)). Specifically, growth-inducing effects include ways in which a project could foster economic or population growth, or the construction of additional housing, either directly or indirectly. Projects that would remove obstacles to population growth (e.g., a major expansion of a wastewater treatment plant) might, for example, allow for development to occur in an area not previously considered feasible for development due to infrastructure limitations (CEQA Guidelines, Section 15126.2(d)). As such, indirect population growth is a secondary impact that is considered below.

Impacts Not Evaluated in Detail

Direct Population Growth and Displacement of Housing. The Project includes the construction of two new office buildings (Buildings 21 and 22) and a hotel. A total of 6,550 employees would be generated by the Project. The Project site is currently zoned M-2 (General Industrial) and M-2(X) (General Industrial, Conditional Development), which does not permit housing units. Therefore, no existing housing is located on the Project site and the Project would not displace housing units. In addition, the Project would not include any housing. The Project would result in ***no impact*** resulting from direct population growth associated with onsite housing development and related to the displacement of housing. These impacts are not evaluated further.

Displacement of People. As discussed in Chapter 3, *Introduction to the Environmental Analysis*, this Draft EIR assumes that no employees currently work at the Project site. However, renovation and occupancy of Building 23 is expected to be completed in the summer of 2016. Employees at Building 23 would not be displaced by the Project, and no workers are located at the other portions of the Project site that would be affected by Project construction. Therefore, the Project would result in ***no impact*** related to the displacement of people and would not necessitate the construction of replacement housing elsewhere. This impact is not evaluated further.

[15] Keyser Marston Associates, Inc. 2016. *Housing Needs Analysis Menlo Park Facebook Campus Project*. May.

Impacts and Mitigation Measures

Impact POP-1: Indirect Population Growth. The Project would not induce substantial population growth indirectly through job growth, nor would projected growth result in adverse direct impacts on the physical environment. (LTS)

The Project would generate employment opportunities, which could induce population growth in the area. The Project would include approximately 962,400 gross square feet (gsf) of office uses (Buildings 21 and 22) and a 200-room hotel with approximately 174,800 gsf. Building 21 would accommodate approximately 3,400 employees, and Building 22 would accommodate approximately 3,000 employees. In total, the proposed office buildings would accommodate approximately 6,400 workers. The hotel would employ approximately 150 workers. Therefore, a total of 6,550 employees would be generated by the Project.

Construction

Construction of the Project, including demolition, grading and utility work, and foundation, core and shell, and tenant improvements, would temporarily increase construction employment. Given the relatively common nature and scale of the construction associated with the Project, the demand for construction employment would most likely be met within the existing and future labor market in the city and the county. The number of construction workers per day would be between 75 and 250. Construction workers would most likely be obtained from Bay Area sources and would not be expected to relocate permanently. Therefore, impacts related to indirect population growth during Project construction would be ***less than significant***.

Operation

Employment Growth. As shown in Table 3.12-4, above, ABAG estimates that the number of jobs in the city's sphere of influence will grow by approximately 2,210 between 2015 and 2020. Operation of the Project would generate up to 6,550 new jobs at full buildout. Therefore, the employees generated by the Project would equate to approximately 296 percent of the anticipated employment growth in the city's sphere of influence from 2015 to 2020, thus exceeding the city's anticipated employment growth.[16] Although the number of employees generated by the Project would exceed ABAG projections, it would not result in an increase in city population or a demand for housing that would exceed ABAG projections, as explained in more detail below. Therefore, the exceedance of ABAG employment projections would not result in significant adverse environmental impacts, because the CEQA thresholds of significance with regard to population and housing are related to substantial increases in population and housing growth projections, not employment projections.

[16] The 6,550 employees generated by the Project/2,210 new jobs in the city between 2015 and 2020 x 100 = 296 percent of anticipated employment growth in the city's sphere of influence.

Indirect Population Growth. Operation of the Project would generate up to 6,550 new jobs at full buildout and occupancy in 2018.[17] Based on existing Facebook employment, is anticipated that 4.8 percent of the employees generated by the Project would seek and find housing in the city.[18] Thus, approximately 314 of the projected number of employees at the Project site would be expected to live in the city.[19] Given an average of 1.8 workers per household, the Project would generate a housing demand of 175 units in the city.[20] Assuming that each household would have an average of 2.61 pph, the Project could increase the number of new residents in the city by approximately 457 residents.[21,22] As shown in Table 3.12-2, approximately 37,700 residents lived within the city's sphere of influence in 2015. According to ABAG Projections, the population is projected to increase to approximately 38,700 by 2020. This represents an increase of approximately 1,000 residents over 5 years. The addition of 457 new residents in the city as a result of the Project would represent approximately 46 percent of the anticipated population growth within the city between 2015 and 2020.[23]

To provide a conservative analysis, this subsection also describes the Project's indirect population growth, assuming that 7.6 percent of the Project's residents would also work in the city (not Facebook specific, as discussed above).[24] This analysis is for informational purposes only. Using 7.6 percent, approximately 498 of the projected number of employees at the Project site would be expected to live in the city.[25] Given an average of 1.8 workers per household, the Project would generate demand for 277 housing units in the city.[26] With an average of 2.61 pph, the Project could increase the number of new residents in the city by approximately 722.[27] As shown in Table 3.12-2, approximately 37,700 residents lived within the city's sphere of influence in 2015. According to ABAG projections, the population is

[17] Phase 1 would be fully built out by early 2018, and Phase 2 would be built out by mid-2022. However, for purposes of this EIR, it is assumed the Project would be built out in 2018.

[18] As discussed above, approximately 7.6 percent of all the city's residents also work in the city. However, according to information provided by Facebook and the HNA, a 4.8 percent share of the total housing need from the Project would be met in the city based on a weighted average, combining the 4.6 percent share of existing Facebook workers who live in the city and the 7.6 percent share of the city's overall workforce that lives in the city, based on U.S. Census data. The 4.8 percent factor assumes current Facebook workers' commute patterns are representative of the new Project employees and that existing commute patterns for the city's workers overall are representative for workers in the proposed hotel, building services, food service, and other campus amenities.

[19] The 6,550 Project employees x 4.8 percent of Project employees who would live in the city = 314 Project employees who would live in the city.

[20] 314 Project employees in the city's sphere of influence/1.8 workers per worker household = 175 units in the city's sphere of influence.

[21] The California DOF estimates that the city currently averages approximately 2.61 pph.

[22] (314 new employees in the city's sphere of influence/1.8 workers per household) x 2.61 pph = ~457 new residents in the city's sphere of influence.

[23] (457 new residents in the city's sphere of influence /1,000 new residents in the city's sphere of influence between 2015 and 2020) x 100 = 46 percent of anticipated population growth in the city's sphere of influence

[24] Approximately 7.6 percent of Menlo Park residents also work in the city. This is the city average. However, approximately 4.8 percent of current Facebook employees also live in Menlo Park. Because the Project would be an extension of the existing Facebook Campus, 4.8 percent is used for the analysis because it would be more representative of proposed conditions. The city average of 7.6 percent is provided for informational purposes.

[25] 6,550 Project employees x 7.6 percent of Project employees who would live in the city = ~498 Project employees who would live in the city.

[26] 498 Project employees in the city's sphere of influence/1.8 workers per worker household = ~277 units in the city's sphere of influence.

[27] (498 new employees in the city's sphere of influence/1.8 workers per household) x 2.61 pph = ~722 new residents in the city's sphere of influence.

projected to increase to approximately 38,700 by 2020. This represents an increase of approximately 1,000 residents over 5 years. The addition of 722 new residents in the city as a result of the Project would represent approximately 72 percent of the anticipated population growth within the city between 2015 and 2020.[28]

Housing Growth. As shown in Table 3.12-3, ABAG estimates that the number of households in the city's sphere of influence will grow by approximately 380 households between 2015 and 2020. As stated above, the Project could generate demand for 175 housing units in the city, assuming that 4.8 percent of employees would live in the city. Therefore, the Project-induced housing demand would equate to approximately 46 percent of the anticipated housing growth in the city's sphere of influence from 2015 to 2020.[29] Because the Project's housing demand is not anticipated in the city plans or accounted for in regional planning efforts, the likely result of the induced housing demand resulting from Project-generated jobs is pressure for additional housing units to be built in the city, the region, and possibly even outside the region. As discussed in Section 3.1, *Land Use and Planning*, the city's jobs/housing ratio is projected to worsen over the next 5 years. The Project's development of office and hotel uses, rather than housing, in the context of the city's already-high jobs/housing ratio, does not further the balanced growth objectives of Plan Bay Area, the Sustainable Communities Strategy for the region. A discussion that considers, very broadly, the types of impacts that could occur with infill/redevelopment, suburban development, and rural-residential development is included in Chapter 4, *Other CEQA Considerations*.

The current vacancy rate in the city, according to the DOF, is 5.6 percent, as noted above. This represents approximately 738 vacant units in the city.[30] The 175 housing units (or the 277 units at the upper limit) that would be needed to accommodate the estimated new households generated by the Project could be accommodated by the vacant units. Therefore, it is possible that no additional new housing would be required. If no vacant units were to become occupied by employees of the Project, which is unlikely, the 175 required units would represent 46 percent of the anticipated housing growth in the city between 2015 and 2020, as noted above. However, the city's Housing Element estimates that approximately 1,318 housing units will be constructed by 2035.[31] As such, the Project's demand for housing could be accommodated within the city's anticipated housing construction. Therefore, the demand for housing as a result of the Project would be ***less than significant***.

Geographic Distribution of Housing Demand. The Project would generate a total housing demand of 3,638 units in the region.[32] As stated above, it is anticipated that 4.8 percent of the employees generated by the Project would live in Menlo Park. The remaining employees would very likely find housing throughout the region, with the majority living in San Mateo, Santa Clara, and San Francisco Counties. ABAG projections are considered the benchmark for foreseeable housing growth (built housing) in each area. As shown in Table 3.12-3, ABAG projects that the number of households would grow by 4.3 percent in the Bay Area region, 3.8 percent in San Mateo County, and 2.6 percent in the city from 2015 to 2020. Between 2015 and 2020, the indirect housing demand generated by the Project would be 3.1 percent of the projected household growth in the Bay Area, 8.3 percent of household growth in San

[28] (722 new residents in the city's sphere of influence/1,000 new residents in the city's sphere of influence between 2015 and 2020) x 100 = 72 percent of anticipated population growth in the city's sphere of influence.

[29] (175 units demanded by the Project/380 new units in the city's sphere of influence between 2015 and 2020) x 100 = 46 percent of anticipated housing growth in the city's sphere of influence.

[30] The 5.6% vacancy rate x 13,180 existing total housing units in the city as of January 1, 2015 = 738 vacant units in the city.

[31] City of Menlo Park. 2014. *Housing Element*. April 1.

[32] The 6,550 Project employees/1.8 pph = 3,638 total units.

Mateo County, and 46 percent of housing growth in the city. Overall, on a regional basis, the Project's demand for housing would not be a significant share of the total housing growth projected by ABAG. Therefore, impacts would be ***less than significant***.

Income Distribution of Housing Demand. Housing affordability is an important consideration for the city's planning purposes, but it is considered to be a socioeconomic issue that need not be evaluated under CEQA. A shortfall in affordable units within the city is not considered a physical environmental impact. However, for informational purposes only, this subsection provides the distribution of the indirect housing demand according to affordability levels. This discussion is based on information from the HNA and RHNA.

Housing affordability is determined relative to the Area Median Income (AMI) for a locality, which is defined by the U.S. Department of Housing and Urban Development.[33] Very low-income housing is affordable for households with incomes under 50 percent of the AMI, low-income housing is affordable for households with incomes between 51 and 80 percent of the AMI, moderate-income housing is affordable for households with incomes between 81 and 120 percent of the AMI, above moderate-income housing is affordable for households with incomes between 121 and 150 percent of the AMI, and upper-income housing is affordable for households with incomes over 151 percent of the AMI.

Employment growth generated by the Project would contribute to the housing demand at various income levels. Table 3.12-6 shows a breakdown of the Project's indirect housing demand according to projected household incomes. As shown, the Project would indirectly result in demand for 328 housing units for households with very low incomes, 542 units for households with low incomes, 430 units for households with moderate incomes, 451 units for households with above-moderate incomes, and 1,887 units for households with upper incomes. Table 3.12-6 also includes a breakdown of the estimated share of Menlo Park's total housing needs by income, using the assumption that 4.8 percent of Project employees would live in the city. As shown, approximately 62 units would be needed for households with very low to moderate incomes, 22 units for households with above-moderate incomes, and 91 units for households with upper incomes.

[33] According to the California Department of Housing and Community Development (FY 2015), the Area Median Income in San Mateo County is $82,100 for a one-person household, $93,800 for two people, $105,500 for a three people, $117,200 for four people, $126,600 for five people, and $136,000 for six people.

Table 3.12-6. Number of New Households by Household Income Level in the Region[a] and City[b]

Income Category	Income Definition	Number of Households (Region)	Number of Households (City)	% of Total
Very Low Income	0%–50% AMI	328	16	9.0%
Low Income	50%–80% AMI	542	26	14.9%
Moderate Income	80%–120% AMI	430	20	11.8%
Above Moderate Income	120%–150% AMI	451	22	12.4%
Subtotal to 150% AMI		*1,751*	*84*	*48.1%*
Upper Income	Over 150% AMI	1,887	91	51.9%
Total		**3,638**	**175**	**100%**

Note:

a. The region includes San Mateo County, Santa Clara County, Alameda County, San Francisco County, Contra Costa County, Santa Cruz County, Marin County, Napa County, and Sonoma County and the city of San Francisco. A small portion of the households generated by the Project would also be located outside of the region.

b. Includes the assumption that 4.8 percent of Project employees would also be Menlo Park residents. Using the assumption that 7.6 percent of the proposed workforce would also live in Menlo Park, approximately 99 units would be needed for households with very low to moderate incomes, 34 units for households with above-moderate incomes, and 143 units for households with upper incomes.

Cumulative Impacts

The city represents the geographic context for cumulative analysis of the Project. This cumulative analysis examines the effects of the proposed development in the Project area in combination with other current projects, probable future projects, and projected future growth within the applicable geographic context. The buildout horizon considered in the cumulative analysis is 2040 to account for ConnectMenlo. The identified cumulative development projects would result in 6,084 dwelling units, 4,831,626 gsf of office/retail/commercial/mixed uses, and approximately 16,911 new jobs.

Impact C-POP-1: Cumulative Increase in Population. Proposed development in the city would increase the resident population but would not exceed growth projections. (LTS)

The Project, in combination with other projected growth in the city (Table 3.0-3), would increase population, employment, and housing demand. The other development projects within the city include commercial, industrial, office, mixed-use, hotel, educational, residential, and flood protection facilities. If other development projects were to induce substantial population growth in the city and exceed ABAG projections, then the cumulative impact would be significant.

Residential Growth

The cumulative projects would develop 6,084 dwelling units, which could increase the resident population by 15,879 (based on the current city pph ratio of 2.61) by 2040, when it is assumed that all cumulative development would be fully constructed and occupied. ABAG projects that the city's population in 2040 will be approximately 43,200. The Project would not develop any dwelling units and, thus, would not contribute to cumulative residential growth. Added to the city's current population of 33,273, the 15,879 residents generated by the cumulative projects would result in a total city population of approximately 49,152 persons in 2040, which is above ABAG projections. It should be noted that changes in population are not, in and of themselves, direct physical environmental effects. The increase

in employment could result in secondary physical impacts related to air quality, noise, traffic generation, and an increase in demand for public services. Those impacts are discussed in the respective sections of this document.

Residential Growth from Employment

As stated above, there are currently 30,566 jobs in the city. ABAG estimates that employment in the city will grow by 13.3 percent between 2015 and 2040. The cumulative projects would develop approximately 4,831,626 gsf of office/retail/commercial/mixed uses, which would generate approximately 16,911 jobs (based on a standard average of 3.5 employees per 1,000 gsf).[34] Using assumptions appropriate for projects within the city,[35] this would result in 1,863 persons added to the population.[36] When considered with the Project's 457 new residents in the city, this cumulative growth would result in 2,320 residents by 2040 when it is assumed all cumulative development would be fully constructed and occupied.

Adding this non-residential growth to the 16,336 residents from cumulative residential development, the city population in 2040 would be expected to total approximately 51,929. This would be above ABAG's projections of 43,200 by 2040, resulting in a potentially significant cumulative impact. However, the 457 new residents resulting from the Project would represent 2.4 percent of the total population growth projected for the city between 2015 and 2040. This percentage is not considered to be a cumulatively considerable contribution to this impact. Impacts are ***less than significant***.

Impact C-POP-2: Cumulative Increase in Housing Demand. Proposed development in the city would increase the demand for housing but would not exceed growth projections. (LTS)

As stated above, the other development projects would result in 4,831,626 gsf of office/retail/commercial/mixed uses, which would result in approximately 16,911 new jobs. Conservatively assuming that 7.6 percent of employees live within the city and assuming that each new employee who lives in the city forms a household (a conservative scenario), the other projects would generate a housing demand of approximately 714 units within the city.[37] The city's existing housing supply consists of 13,180 housing units, with a vacancy rate of 5.6 percent. With this vacancy rate, approximately 738 dwelling units are available to house additional residents. As discussed above under Impact POP-1, 175 housing units would be needed to accommodate the estimated number of new households generated by the Project. Cumulatively, the demand for 889 additional dwelling units (175 from the Project and 714 from cumulative projects) could not be accommodated by the existing vacant housing in the city. The Project accounts for 20 percent of the overall cumulative housing demand. However, the additional residential development anticipated by ConnectMenlo, which is anticipated to be approved on a timeframe similar to that of the Project, could accommodate the demand for housing units from the cumulative employment-generating projects. Overall, cumulative development would not result in an increase in housing demand beyond current development projections. This cumulative impact is ***less than significant***.

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[34] The 16,911 new jobs = (4,831,626 gsf/1,000 gsf) x 3.5 employees.

[35] Assumes approximately 7.6 percent of Menlo Park employees would live in the city, all new employees would form a household, and a pph ratio of 2.61.

[36] The 1,863 new residents = (16,910 new jobs/1.80 workers per household) x 7.6 percent city share x 2.61 pph.

[37] 16,911 new jobs in the city/1.8 workers per worker household x 7.6 percent city share = 714 units in the city's sphere of influence.

The Project and cumulative housing demand is within the RHNA allocation. As shown in Table 3.12-1, ABAG identified 655 units as the city's fair share of the regional housing need for the 2014 to 2022 period. The Project and the other development projects together represent approximately 2.5 times the number of housing units identified in the RHNA. Depending on the allocation of units among the other projects, this demand could significantly affect the availability of affordable housing. Housing affordability is an important consideration for the City's planning purposes, but it is considered to be a socioeconomic issue that need not be evaluated under CEQA. A shortfall in the number of affordable units within the city is not considered a physical environmental impact.

3.13 Public Services

This section describes the existing environment and regulatory setting for public services within the city related to the Facebook Campus Expansion Project (Project). It also describes the potential impacts on public service providers, including police, fire, and emergency services; recreation; libraries; and schools, that would result from implementation of the Project. The analysis identifies the potential impacts of the Project on the ability of the service providers to deliver required services.

Issues identified in response to the Notice of Preparation (NOP) (Appendix 1) were considered in preparing this analysis. The applicable issues are related to fire and emergency services, standards of significance, Menlo Park Fire Protection District (MPFPD) and existing emergency services in the environmental setting, impacts due to Project features, the recently completed *Standards of Cover Assessment for the Menlo Park Fire Protection District* (June 16, 2015), the status of the ongoing Draft Nexus Impact Fee Report, and school capacity.

Existing Conditions

Regulatory Setting

State

California Senate Bill 50 (SB 50). Under the provisions of SB 50, school districts may collect Level Two and Level Three fees to offset the costs related to increasing school capacities in response to growing student enrollments associated with development. Level Two fees require a project developer to provide one-half the costs of accommodating students in new schools while the state provides the other half. Level Three fees require a project developer to pay the full cost of accommodating the students in new schools. Fees would be implemented at the time the funds from Proposition 1A (approved by the voters in 1998) are expended. School districts must demonstrate to the state their long-term facilities needs and costs, based on long-term population growth, to qualify for Level Two or Level Three fees.

Local

City of Menlo Park General Plan. The following goal and policy within the Open Space/Conservation Element of the City of Menlo Park's (City's) General Plan are relevant to the Project:

> **Goal OSC2:** Provide parks and recreation facilities.
>
> *Policy OSC2.4*: Parkland Standards. Strive to maintain the standard of 5 acres of parkland per 1,000 residents.

The following policies within the Safety Element of the General Plan are relevant to the Project:

> *Policy S1.5:* New Habitable Structures. Require that all new habitable structures incorporate adequate hazard mitigation measures to reduce identified risks from natural and human-caused disasters.
>
> *Policy S1.10:* Safety Review of Development Projects. Continue to require hazard mitigation, crime prevention, fire prevention and adequate access for emergency vehicles in new development.
>
> *Policy S1.29:* Fire Equipment and Personnel Access. Require adequate access and clearance, to the maximum extent practical, for fire equipment, fire suppression personnel and evacuation for high occupancy structures in coordination with the Menlo Park Fire Protection District.

Policy S1.38: Emergency Vehicle Access. Require that all private roads be designed to allow access for emergency vehicles as a prerequisite to the granting of permits and approvals for construction.

The following goal within the Land Use Element of the General Plan is relevant to the Project:

Goal I-H: To promote the development and maintenance of adequate public and quasi-public facilities and services to meet the needs of the city's residents, businesses, workers, and visitors.

ConnectMenlo. The City's General Plan (Land Use and Circulation Elements) and M-2 Area Zoning Update, also known as ConnectMenlo, is under way. Although not yet adopted, the following draft policies and goal in ConnectMenlo pertain to the Project and are identified for informational purposes:

Policy LU-4.4: Community Amenities. Require mixed-use and nonresidential development of a certain minimum scale to support and contribute to programs that benefit the community and the city, including education, transit, transportation infrastructure, sustainability, neighborhood-serving amenities, child care, housing, job training, and meaningful employment for Menlo Park youth and adults.

Policy LU-6.2: Open Space in New Development. Require new nonresidential, mixed use, and multiple dwelling development of a certain minimum scale to provide ample open space in the form of plazas, greens, community gardens, and parks whose frequent use is encouraged through thoughtful placement and design.

Policy LU-6.3: Public Open Space Design. Promote public open space design that encourages active and passive uses, and use during daytime and appropriate nighttime hours to improve quality of life.

Policy LU-6.6: Public Bay Access. Protect and support public access to the Bay for the scenic enjoyment of open water, sloughs, and marshes, including restoration efforts, and completion of the Bay Trail.

Goal LU-7: Promote the implementation and maintenance of sustainable development, facilities and services to meet the needs of Menlo Park's residents, businesses, workers, and visitors.

Menlo Park Fire Protection District Fire Prevention Code, Ordinance 30. The Fire Prevention Code is adopted pursuant to the Fire Protection District Act of 1987 (California Health and Safety Code Sections 13800 et seq.). This code, which was adopted by the MPFPD in September 2007, adopts by reference the 2006 edition of the International Fire Code (IFC), with necessary state amendments. Under Ordinance 30 of the Fire Prevention Code, fire protection systems are required; this code applies to the design, installation, inspection, operation, testing, and maintenance of all fire protection systems. Automatic fire sprinkler systems shall be required in new buildings if the new structure has a total floor area of 5,000 gross square feet (gsf) or more, if the building is four or more stories in height, or if the building has a height of 40 feet or more. Sprinkler systems are also required in existing buildings where the cost of the improvements made to the building exceeds 50 percent of the assessed valuation of the structure. Fire extinguishers and fire alarms are also required.[1]

Menlo Park Fire Protection District Fire Prevention Code, Ordinance 32. Pursuant to Title 24 of the California Code of Regulations (also known as the California Building Standards Code [CBSC]) and California Health and Safety Code Section 13869 et seq., a fire protection district may adopt a fire

[1] Menlo Park Fire Protection District. 2007. *District Fire Prevention Code Ordinance 30 and District Standards, Local Ordinance to 2007 California Fire Code and Fee Schedule*. Adopted: September 5, 2007. Available: <http://www.menlofire.org/fireprevention/forms/Ordinance%2030.pdf>. Accessed: September 11, 2015.

prevention code by reference. The MPFPD adopted a new amended and restated Fire Prevention Code in November 2010 that makes local amendments to the 2010 California Fire Code. Ordinance 32 of the Fire Prevention Code includes outlined requirements for burning, fire apparatus access roads, traffic-calming devices, photovoltaic system installations, automatic fire sprinkler systems, fire alarm systems and components, and building access in the event of an emergency.[2]

Environmental Setting

Fire and Emergency Services

Fire protection services in the Project area are provided by the MPFPD. The MPFPD service boundary covers 30 square miles, including Menlo Park, Atherton, and East Palo Alto, plus parts of unincorporated San Mateo County and federal facilities such as the Veterans Hospital, U.S. Geological Survey office, and the Stanford Linear Accelerator. The MPFPD includes seven fire stations, one administrative building, and one rescue warehouse. The MPFPD's service area, which covers approximately 111,850 people,[3,4] is primarily residential, but it also serves some industrial areas in the easternmost part of the area (including the Project site). In addition, the MPFPD is part of the greater San Mateo County boundary-drop plan whereby the closest apparatus responds to each call.[5]

Headed by the fire chief, the MPFPD is organized into the Administrative Services Division, the Fire Prevention Division, the Operations Division, and the Training Division. Currently, the MPFPD has eight chief officers, 24 captains, 60 engineers/firefighters, and three fire inspectors, for a total of 95 fire safety personnel employees. Each engine and truck is staffed by a minimum of three people.[6] Current staffing levels equate to a ratio of 0.85 position per 1,000 persons in the service population. Although the number of safety personnel fluctuates, the MPFPD's goal for staffing includes a total of 98 fire safety personnel and a service ratio of 0.88 position per 1,000 persons in the service area.[7]

The MPFPD responds to approximately 8,200 incident calls per year, with about 63 percent of them being emergency medical incidents.[8] The MPFPD's response goals are 7 minutes for its first fire unit to arrive at an emergency medical incident and less than 8 minutes for all units to arrive at a structure fire.

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[2] Menlo Park Fire Protection District. 2010. *District Fire Prevention Code Ordinance No. 32-2010, Adopting the 2010 California Fire Code with Local Amendments*. Adopted: November 16, 2010. Available: <http://www.menlofire.org/fireprevention/forms/2010%20Ordinance%2032.pdf>. Accessed: September 11, 2015.

[3] Schapelhouman, Harold. Fire Chief, Menlo Park Fire Protection District. November 16, 2015—email to Kyle Perata, City of Menlo Park.

[4] The MPFPD determines service population by accounting for both residents and employees. The MPFPD service population is different from that of the Menlo Park Police Department (discussed below). The MPFPD considers each employee as equivalent to 0.58 resident in its service population, whereas the Menlo Park Police Department includes one-third of all employees (daytime residents) who work in the city in its service population.

[5] Menlo Park Fire Protection District. 2013. "Menlo Park Fire Protection District Information." Available at <http://www.menlofire.org/districtinfo.html>. Accessed: September 11, 2015.

[6] Schapelhouman, Harold. Fire Chief, Menlo Park Fire Protection District. November 16, 2015—email to Kyle Perata, City of Menlo Park.

[7] Schapelhouman, Harold. Fire Chief, Menlo Park Fire Protection District. January 20, 2016—email to Kyle Perata, City of Menlo Park.

[8] Menlo Park Fire Protection District. 2013. *Menlo Park Fire Protection District Information*. Available: <http://www.menlofire.org/districtinfo.html>. Accessed: September 11, 2015.

In 2014, the district-wide response time was 6.34 minutes. However, the actual response time may vary, depending on whether the units are in quarters, in their response areas, responding to simultaneous incidents, or out of their area for training.[9]

Fire Stations 5 and 77 in Menlo Park and Fire Station 2 in East Palo Alto are the closest stations to the Project site. Station 77, located at 1467 Chilco Avenue, south of the Project site, is expected to serve the Project site. The driving distance between Station 77 and the Project site is about 0.6 mile. In addition to providing fire protection within the district, Station 77 provides automatic aid to Redwood City and mutual aid to Fremont. In 2015, Station 77 responded to 984 emergency incidents.[10] Per shift, Station 77 is manned by three firefighting personnel (one captain and two firefighters).[11] The station operates Engine 77 (Type 1 Pierce Saber fire engine), an airboat, urban search and rescue (USAR) vehicles, and various utility vehicles, which are owned by the MPFPD.[12] Station 1, at 300 Middlefield Road, approximately 1.6 miles south of the Project site, could serve the Project if a 100-foot aerial ladder truck were needed to reach taller buildings.[13]

With respect to improvements to MPFPD facilities, the MPFPD is in the process of reconstructing Station 2, which is located at 2290 University Avenue, approximately 1.2 miles southeast of the Project site. Once complete, Station 2 will include a three-bay, drive-through 12,747 gsf fire station as well as a new detached communication tower. In addition, the MPFPD is in the process of enlarging Station 6, located at 700 Oak Grove Avenue, approximately 2.3 miles south of the Project site. Station 6 is currently 3,200 gsf. Once complete, Station 6 will include a two-story 7,452 gsf firehouse, detached vehicle storage garage, emergency generator, 500-gallon fuel tank, and the relocation of an existing carriage house from its present location on Middlefield Road.[14]

On February 16, 2016, the MPFPD Board of Directors approved a Nexus Impact Fee Study, presented by the MPFPD Fire Chief. The Nexus Impact Fee Study is part of a Fire Protection Facilities Impact Fee Program that ensures that new development provides its fair share of the cost of needed capital facilities to serve the population within MPFPD's boundaries. These capital facilities include fire stations and buildings, emergency response vehicles, and other fire protection and emergency equipment. The fee was adopted under the authority of Assembly Bill (AB) 1600, the Mitigation Fee Act, contained in Section 66000 and subsequent sections of the California Government Code. AB 1600 established a process for local governments and districts to formulate, adopt, impose, collect, and account for impact fees. As per AB 1600, cities, including the City of Menlo Park, hold the legal authority to impose fees on behalf of the MPFPD within their city limits.

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[9] CityGate Associates, LLC. 2015. Standards of Cover Assessment for the Menlo Park Fire Protection District: Volume 2 of 3, Technical Report. June 16. Available: http://www.menlofire.org/pdf/soc/V2%20-%20Menlo%20Park%20FPD%20SOC%20Final%20-%20Technical%20Report%20(06-30-15).pdf.

[10] Schapelhouman, Harold. Fire Chief, Menlo Park Fire Protection District. January 20, 2016—email to Kyle Perata, City of Menlo Park.

[11] Schapelhouman, Harold. Fire Chief, Menlo Park Fire Protection District. January 20, 2016—email to Kyle Perata, City of Menlo Park.

[12] Menlo Park Fire Protection District. 2008. *Station 77*. Available: http://www.menlofire.org/station7.html. Accessed: September 11, 2015.

[13] Schapelhouman, Harold. Fire Chief, Menlo Park Fire Protection District. November 16, 2015—email to Kyle Perata, City of Menlo Park.

[14] Menlo Park Fire Protection District. 2015. Fiscal Year 2015-2016 Adopted District Budget & CA-TF3 US&R Budget. June 30. Available: <http://www.menlofire.org/pdf/ab2015_16.pdf>. Accessed on April 18, 2016.

Although the City has not yet imposed the fee, it is anticipated that the fee will be levied on new residential and non-residential development in the MPFPD's boundaries to offset the demand for capital facilities generated by new development.[15,16] An effective date for the impact fee has not yet been identified by the city.

Police

Police services in the vicinity of the Project site are provided by the Menlo Park Police Department (MPPD), which serves the city, with mutual aid provided on an as-needed basis from neighboring law enforcement agencies. The MPPD is headquartered at the Menlo Park Civic Center at 701 Laurel Street, approximately 2 miles southwest of the Project site. This main station serves the Project site.

A new substation opened in spring 2014 at the corner of Hamilton Avenue and Willow Road, approximately 0.3 mile east of the Project site. The substation is an auxiliary site for officers who work in the Belle Haven neighborhood to use as office space. The substation has limited business hours and is staffed with a part-time clerk. There are no other immediate or near-future plans for expansion of MPPD facilities, staff, or equipment, aside from normal replacement schedules.[17]

The MPPD is headed by the chief of police and consists of two divisions: Patrol Operations and Special Operations. The MPPD has a total of 48 sworn officers, covering three beats, and 22 professional staff members. Beat 3, which serves the Project site, is staffed with at least two sworn officers; however, officers in the city who work the shift are available to assist during emergencies.[18,19] The MPPD service population is 42,046 people, which includes the total resident population of the city and one-third of all employees (daytime residents) who work in the city. The current service ratio is 1.14[20] sworn officers per 1,000 residents, which exceeds the MPPD's preferred ratio of one sworn officer per 1,000 residents.

The MPPD is committed to maintaining response times that are consistent with industry standards. From November 2014 to November 2015, the MPPD received a total of 290 Priority 1 calls, 10,204 Priority 2 calls, and 10,316 Priority 3 calls. MPPD's current response times, which are considered acceptable, are as follows.

- Priority 1: Immediate threat of danger to a person or a large amount of property, and the crime is in progress and/or there is a chance of immediate apprehension of the suspect. The response time for Priority 1 calls for the MPPD is slightly more than 5 minutes.
- Priority 2: Emergency is in progress, but it is not life threatening or does not immediately threaten a large amount of property. Alternatively, the situation could be life threatening, but the threat has passed and the suspect is in custody. The response time for Priority 2 calls for the MPPD is 8 minutes.

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[15] Menlo Park Fire Protection District. 2013. Fire Protection Facilities Impact Fee Nexus Study – Administrative Draft. Prepared by Seifel Consulting and Urban Economic. June.

[16] Menlo Park Fire Protection District. 2016. *Menlo Park Fire Protection District Emergency Services and Fire Protection Impact Fee Nexus Study*. February.

[17] Jonsen, Robert, Chief of Police, Menlo Park Police Department. November 5, 2015—memorandum to Kyle Perata, City of Menlo Park.

[18] Jonsen, Robert, Chief of Police, Menlo Park Police Department. November 5, 2015—memorandum to Kyle Perata, City of Menlo Park.

[19] Jonsen, Robert, Chief of Police, Menlo Park Police Department. January 7, 2016—memorandum to Kyle Perata, City of Menlo Park.

[20] Service ratio = (48 sworn officers/42,046 residents) × 1000 = ~1.14.

- Priority 3: The situation is not life threatening and time is not significant. The response time for Priority 3 calls for the MPPD is 10 minutes.

In addition to standard police services, the existing Facebook Campus requires additional police service for investigations, search warrants, protests, and dignitary/celebrity visits. Police service is required for investigations related to identity theft and other crimes that involve Facebook users. In addition, search warrants from out-of-state police agencies for active out-of-state investigations that have connections to the information stored on Facebook servers require police service. On an irregular basis, major events occur at the Facebook Campus that attract a large number of visitors as well as dignitaries/celebrities. Police services for these events are often required for crowd control, protest abatement, personal protection and security, and motorcades.

Schools

Four elementary/middle school districts and one high school district are within the boundaries of the city: the Menlo Park City School District (MPCSD), the Ravenswood School District, Redwood City School District, Las Lomitas School District, and the Sequoia Union High School District. However, the portion of the city that includes Las Lomitas School District, which is generally bounded by Alameda de las Pulgas to the north and Interstate 280 to the south, is built out, with no substantial potential for new housing units. Thus, this school district is not further analyzed in this section because the Project would not indirectly induce the construction of new housing in this area and result in the generation of new students.

Menlo Park City School District. The MPCSD serves parts of the city, Atherton, and unincorporated San Mateo County. There are approximately 2,941 students, kindergarten through eighth grade, enrolled in the four schools of the district.[21,22] Oak Knoll Elementary School and Hillview Middle School are located in the city, while Laurel Elementary School and Encinal Elementary School are located in Atherton.[23]

The MPCSD employed 178 full-time-equivalent teachers during the 2014–2015 school year, with an average student-to-teacher ratio of 16.5 students per teacher.[24, 25] Pursuant to Education Code Sections 52121–52128, the MPCSD strives to provide class sizes of 20 students for grades kindergarten through third and 24 students for grades fourth through eighth.[26] On average, the MPCSD meets this goal.[27]

The MPCSD's schools and associated capacity for the 2014–2015 school year are listed in Table 3.13-1, below. As shown, with the expansion of the Laurel School, all of the schools in MPCSD have additional capacity available for new students. Nonetheless, if a school is at capacity, students have the potential to attend another elementary school in the district. The MPCSD is required to accommodate the students

[21] Menlo Park City School District. n.d. *About Us*. Available: <http://district.mpcsd.org/modules/cms/pages.phtml?pageid=169038&sessionid=69d7bf3a3142231aa2155898b6f502d9>. Accessed: September 15, 2015.

[22] Enrollment Projection Consultants. 2015. *Concluding Documentation to Latest Forecast Update*. November 2, 2015.

[23] Menlo Park City School District. n.d. District Boundaries. Available: <http://district.mpcsd.org/modules/cms/pages.phtml?pageid=171241&sessionid=ace8f1cbb3bf78dafce27dbfc3ecf22b&sessionid=ace8f1cbb3bf78dafce27dbfc3ecf22b>. Accessed: September 15, 2015.

[24] Menlo Park City School District. 2015. *District Profile 2014–2015*. Available: http://district.mpcsd.org/modules/cms/pages.phtml?pageid=169038&sessionid=69d7bf3a3142231aa2155898b6f502d9. Accessed: November 2, 2015.

[25] Menlo Park City School District. 2015. *District Profile*. Available: http://district.mpcsd.org/modules/cms/pages.phtml?pageid=169038&sessionid=69d7bf3a3142231aa2155898b6f502d9. Accessed: November 23, 2015.

[26] Menlo Park City School District. 2008. *Class Size and School Assignment*. Menlo Park Board Policies, Board Policy 5116.2, Class Size and School Assignments. Adopted: June 2003; revised: April 2008. Available: <http://district.mpcsd.org/modules/cms/pages.phtml?pageid=171089#Philosophy>. Accessed: September 15, 2015.

[27] Sheikholeslami, Ahmad. Chief Business and Operations Officer, Menlo Park City School District. January 10, 2016—email to Kyle Perata, City of Menlo Park.

within its boundary. If all classes are at capacity, then the MPCSD may accommodate additional students by either increasing the class size or opening new classrooms. The MPCSD currently uses student generation rates of 0.44 student per single-family dwelling unit and 0.18 student per townhouse dwelling unit.[28]

Ravenswood City School District. The Ravenswood City School District (Ravenswood CSD) serves primarily East Palo Alto and the Belle Haven neighborhood in the city. Ravenswood CSD serves approximately 3,291 students, kindergarten through eighth grade, in seven elementary schools.[29] Ravenswood CSD also includes Ravenswood Child Development Center (pre-kindergarten) and San Francisco 49er's Academy (sixth through eighth grades, located at Costaño Elementary School). In addition, Ravenswood CSD holds charters for five charter schools, including one high school. Two Ravenswood CSD schools, Belle Haven Elementary School and Willow Oaks Elementary School, are located within the city.[30]

Table 3.13-1. Menlo Park City School District—Capacity and Enrollment, 2014–2015

School	Grades	Total Projected Capacity (2016–2017)[a]	Resident Population (2014–2015)[b]	Additional Capacity
Laurel School	K-5	720	630	90
Encinal School	K-5	720	589	131
Oak Knoll School	K-5	720	638	82
Hillview Middle School	6-8	1,100	833	267
Total		3,260	2,690	570

Note: This table is based on the resident student population for planned attendance areas in 2016–2017. Laurel School is under construction and will result in two schools: a lower campus for grades K–2 and an upper campus for grades 3–5. The school is scheduled to open in 2016. The capacity and enrollment information for the school provided herein reflects the information provided by the MPCSD.

Resident population is based on where the students live rather than the schools they happen to attend (enrollment population). Resident population differs from enrollment population because of intra-district attendance and known incoming inter-district enrollment from addresses outside the MPCSD.

Sources:

a. Williams, Tom. Enrollment Projections Consultants. November 2, 2015—projected enrollment from 2015 to 2025.

b. Enrollment Projection Consultants. 2015. *Concluding Documentation to Latest Forecast Update*. November 2, 2015.

As of the 2014–2015 school year, Ravenswood CSD employed 224 teachers,[31] resulting in a ratio of approximately 14.7 students per teacher. According to the Ravenswood City School District Population Projections Report, Belle Haven Elementary School's enrollment is expected to decrease from a current enrollment of 578 to 527 students by 2020, while Willow Oaks Elementary School's enrollment is

[28] Enrollment Projection Consultants. 2015. *Concluding Documentation to Latest Forecast Update*. November 2, 2015.

[29] Sved, Kevin. Planning and Development Consultant, Ravenswood CSD. November 16, 2015—memorandum to Kyle Perata, City of Menlo Park.

[30] Ravenswood City School District. 2015. *About RCSD*. Available http://www.ravenswoodschools.org/about.html. Accessed: November 23, 2015.

[31] California Department of Education, Educational Demographics Unit. 2015. *Certified Staff by Ethnicity for 2014–2015, Number of Staff by District by Ethnicity.* 4168999 – Ravenswood City Elementary. Available: <http://dq.cde.ca.gov/dataquest/>. Accessed: November 30, 2015.

expected to increase from a current enrollment of 685 to 856 students by 2020.[32,33] Belle Haven Elementary School and Willow Oaks Elementary School can accommodate up to 622 students and 722 students, respectively.[34] As shown in Table 3.13-2, these two schools are currently under capacity. The Ravenswood CSD uses a student generation rate of 0.39 student per single-family dwelling unit and 0.56 student per multi-family dwelling unit.[35]

Table 3.13-2. Ravenswood City School District Schools in Menlo Park—Capacity and Enrollment, 2015–2016

School	Grades	Total Capacity	Current Enrollment (2015–2016)	Additional Capacity
Belle Haven Elementary School	K-8	622	578	44
Willow Oaks Elementary School	K-8	722	685	37
Total	—	1,344	1,263	81

Note: Capacity values include the remaining 3 to 5 years of useful life of temporary portable buildings.
Source:
Sved, Kevin. Planning and Development Consultant, Redwood CSD. November 16, 2015—memorandum to Kyle Perata, City of Menlo Park.

Redwood City School District. Redwood City School District (Redwood CSD) serves elementary school students in Redwood City and portions of San Carlos, Menlo Park, Atherton, Woodside, and incorporated areas near Redwood City.[36] There are approximately 9,042 students, kindergarten through eighth grade, enrolled in the 18 schools of the Redwood CSD.[37] Taft Community School, which has an enrollment of approximately 524 students, and John F. Kennedy Middle School, which has an enrollment of approximately 728 students, serve portions of Menlo Park.[38] However, because Redwood CSD is a "district of choice," it is not likely that all students generated from future development in the Redwood CSD service area would go to these two schools.[39]

[32] Sved, Kevin. Planning and Development Consultant, Redwood CSD. November 16, 2015—memorandum to Kyle Perata, City of Menlo Park.

[33] Davis Demographics and Planning. 2014. *Fall 2013/2014 Report: Student Population Projections by Residence, Fall 2013–Fall 2020*. June 11. The 2020 enrollment for Belle Haven Elementary School and Willow Oaks Elementary School was calculated by adding the number of students in 2020 for transitional kindergarten through eighth grade.

[34] Sved, Kevin. Planning and Development Consultant, Redwood CSD. Memo to Kyle Perata, City of Menlo Park, November 16, 2015.

[35] Davis Demographics and Planning. 2014. *Fall 2013/2014 Report: Student Population Projections by Residence, Fall 2013–Fall 2020*. June 11.

[36] Redwood City School District. 2013. *District Profile*. Available: < http://www.rcsd.k12.ca.us/domain/5>. Accessed: September 15, 2015.

[37] California Department of Education, Data Reporting Office. 2016. *District Enrollment by Grade, 2014–2015.* 4169005 – Redwood City Elementary. Available <http://dq.cde.ca.gov/dataquest/>. Accessed: January 12, 2016.

[38] California Department of Education, Data Reporting Office. 2013. *District Enrollment by Ethnicity, 2014–2015*. 4169005 – Redwood City Elementary. Available: <http://dq.cde.ca.gov/dataquest/>. Accessed: September 15, 2015.

[39] The Redwood City School District offers a combination of neighborhood schools and "schools of choice." Neighborhood schools have residential boundaries, and students are generally assigned to them based on where the students live. Redwood CSD offers four schools of choice—Adelante Spanish Immersion School, McKinley Institute of Technology (MIT), North Star Academy, and Orion School—that do not have neighborhood boundaries. All students within the district are eligible to apply to attend one of the four schools of choice or a neighborhood school outside their boundary area. From: Redwood City School District. 2013. *Schools of Choice*. Available: <http://www.rcsd.k12.ca.us/site/Default.aspx?PageID=228>. Accessed: September 15, 2015.

As shown in Table 3.13-3, Taft Community School and John F. Kennedy Middle School are currently under capacity. Redwood CSD employed 431 full-time-equivalent teachers during the 2014–2015 school year, with an average student-to-teacher ratio of 21 students per teacher.[40] Redwood CSD updated its facilities master plan and a demographic study in May 2015. Redwood CSD projects a decrease of approximately 178 students by 2024. A student generation rate of 0.35 student per single-family dwelling unit and 0.14 student per multi-family dwelling unit is used for the Redwood CSD.[41,42]

Table 3.13-3. Redwood City School District Schools in Menlo Park—Capacity and Enrollment, 2014–2015

School	Grades	Total Capacity	Current Enrollment (2014–2015)	Additional Capacity
Taft Community School	K–5	947	524	423
John F. Kennedy Middle School	6–8	1,218	728	490
Total	—	2,165	1,252	913

Source:
Saleh, Wael, Chief Business Official, Redwood CSD. October 20, 2015—memorandum to Kyle Perata, City of Menlo Park.

Sequoia Union High School District. Sequoia Union High School District (SUHSD) is the only high school district within the city. The SUHSD serves approximately 8,887 students from ninth grade to twelfth grade in the communities of Atherton, Belmont, East Palo Alto, Menlo Park, Portola Valley, Redwood City, Redwood Shores, San Carlos, and Woodside as well as unincorporated portions of San Mateo County. The schools that serve the SUHSD include Carlmont High School, Redwood High School, Woodside High School, Sequoia High School, Menlo-Atherton High School, and East Palo Alto Academy.[43]

The SUHSD currently employs 550 teachers, with an average student-to-teacher ratio of 17.6 students per teacher.[44] By 2020, the SUHSD is projected to increase enrollment by more than 1,000, with the additional students at Carlmont, Redwood, Woodside, Sequoia, and Menlo-Atherton High Schools.[45] Therefore, the SUHSD is increasing the capacities of Carlmont, Menlo-Atherton, Sequoia, and Woodside High Schools through construction and renovation of the existing campuses. The SUHSD has not established its own

[40] California Department of Education, Data Reporting Office. 2013. *Certified Staff by Ethnicity for 2014–2015, Number of Staff by District by Ethnicity.* Staff Type: Teachers. 4169005 – Redwood City Elementary. Available: <http://dq.cde.ca.gov/dataquest/>. Accessed: September 15, 2015.

[41] Decision Insite Enrollment Impact Specialists. 2015. *Residential Research Summary Prepared for Redwood City School District*. August 10. Decline in enrollment is based on historical enrollment trends and projected new residential development.

[42] The student generation rate for single-family dwelling units is the average of the student generation rates for single-family detached units and single-family attached units.

[43] Zito, Matthew. Chief Facilities Officer, Sequoia Union High School District. November 24, 2015—email to Kyle Perata, City of Menlo Park.

[44] California Department of Education, Educational Demographics Unit. 2013. Certified Staff by Ethnicity for 2014–2015, Number of Staff by District by Ethnicity. 4169062 – Sequoia Union High. Available: <http://dq.cde.ca.gov/dataquest/>. Accessed: September 15, 2015.

[45] Enrollment Projection Consultants. 2015. *Concluding Documentation to Latest Forecast Update*. December 30.

student generation rate but uses the statewide average of 0.2 student per dwelling unit.[46] A new public magnet high school is proposed for development within the SUHSD. The public magnet high school would be located at 150 Jefferson Street and have an estimated enrollment of 400 students.[47]

Parks and Recreation

The Menlo Park Community Services Department (Department) is responsible for providing recreational and cultural programs for the residents of the city. Department facilities located within the city boundaries include 221 acres of parkland, distributed among 13 parks, three community centers (one with an attached gymnasium), two public pools, three childcare centers, one gymnasium, and one gymnastics center.[48] Included in the parks and recreational areas are tennis courts, a skate park, softball diamonds, picnic areas, playgrounds, soccer fields, shared-use performing arts center, and open space. The parks and facilities administered by the Department that are located on the north side US 101, in the vicinity of the Project site, are identified in Table 3.13-4.

The Department is currently able to meet overall demand for park and recreational services. However, the Department is currently at capacity during peak times (4:00 p.m. to 10:00 p.m. Monday through Friday and Saturday mornings) for sports field rentals, pre-school and developmental gymnastics classes, the Burgess Pool, gymnasium (sports activities), and two of the community centers for various classes. The City has adopted a goal of maintaining a ratio of 5 acres of developed parkland per 1,000 residents.[49] Currently, the city provides approximately 221 acres of parkland for residents of Menlo Park, which equates to a ratio of 6.64 acres per 1,000 residents, thereby exceeding its goals.[50] In addition to the parks and facilities in Table 3.13-4, the San Francisco Bay Trail (Bay Trail) extends along the Bayfront Expressway to an area north of the Project site. The Bay Trail is a series of existing and planned regional hiking and bicycle trails, administered by the Association of Bay Area Governments (ABAG), that will eventually connect around the perimeter of San Francisco and San Pablo Bays and link 47 cities with 500 miles of trails. Please refer to Sections 3.1, *Land Use and Planning*, and 3.3, *Transportation/Traffic*, for more information about bicycle and pedestrian connections in the vicinity of the Project site.

Libraries

The City has two libraries that are accessible to local residents and part of the Peninsula Library System. These libraries include the Main Menlo Park Library and the Belle Haven Community Library. The Main Menlo Park Library is a 34,200 gsf, single-story building in the Civic Center, located at 800 Alma Street. In 1999, the City opened a 3,600 gsf branch library in the Belle Haven Elementary School at 413 Ivy Drive as part of a joint venture with Ravenswood CSD. In total, the two libraries have approximately 37,800 gsf of space and a staff of approximately 20. The libraries provide approximately 158,780 print volumes of books, 12,240 electronic books, and more than 16,000 audio books to patrons.[51]

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[46] Zito, Matthew. Chief Facilities Officer, Sequoia Union High School District. 2015. November 24, 2015—email to Kyle Perata, City of Menlo Park.

[47] Murphy, Justin, City of Menlo Park. September 11, 2015—email to Kirsten Chapman, ICF International.

[48] City of Menlo Park Community Services Department. 2015. *Existing Conditions Questionnaire Response for Facebook Campus Expansion Project.* November 3.

[49] City of Menlo Park Community Services Department. 2015. *Existing Conditions Questionnaire Response for Facebook Campus Expansion Project*. November 3.

[50] 6.64 = (221 acres/January 1, 2015 population of 33,273) × 1,000 residents.

[51] City of Menlo Park Libraries. 2015. *Existing Conditions Questionnaire Response for Facebook Campus Expansion Project*. November 5.

Table 3.13-4. Parks and Community Facilities Located within the Vicinity of the Project Site

Facility Name	Location	Size	Distance from Site (miles)[a]	Description
Park Facilities				
Bedwell–Bayfront Park	Bayfront Expressway and Marsh Road	155 acres	0.45	An extensive trail system, part of the San Francisco Bay Trail, for hiking, running, bicycling, dog walking, bird watching, kite flying, and photography.
Kelly Park	100 Terminal Avenue	8.3 acres	0.10	A synthetic-turf soccer field with lights, full-size track with four different types of exercise apparatus, lighted tennis courts, lighted basketball court, benches, bleachers, and a full men's and women's bathroom facility.
Marketplace Park	Ivy Drive and Market Place	1 acre	0.21	Playground, open grass areas, and walkways.
Hamilton Park	Hamilton Avenue (Sage Street and Hazel Street)	1.2 acres	0.06	A play structure, picnic tables, and open grass area.
Community Facilities				
Belle Haven Child Development Center	410 Ivy Drive	6,600 gsf	0.34	Licensed by the Department of Social Services to provide quality subsidized full-time child development services.
Belle Haven After-School Center	100 Terminal Avenue	2,485 gsf	0.10	Licensed by the Department of Social Services to provide care for children in kindergarten to sixth grade.
Senior Center	110 Terminal Avenue	11,000 gsf	0.06	Health, recreational, and educational programs as well as cultural events and social services for older adults.
Onetta Harris Community Center	100 Terminal Avenue	11,000 gsf	0.07	A gymnasium, weight room, computer lab, large multi-purpose room with adjacent kitchen, three classrooms, and office space.
Belle Haven Pool	100 Terminal Avenue	6,300 gsf	0.10	Currently a seasonal pool that is open from mid-June to the end of August (a 25-meter pool with additional shallow areas as well as a small kiddie pool).

Source:
City of Menlo Park. 2013. *City of Menlo Park General Plan – Open Space, Conservation, Noise, and Safety Elements*. Adopted: May 21, 2013.

a. As measured from the boundary of the Project site closest to the park or community facility.

According to the general plan, the goal of the Menlo Park Library is to maintain a ratio of 3.29 books per capita and 1.02 gsf of library space per capita.[52] As explained above, the Main Menlo Park Library and Belle Haven Branch Library combined have approximately 37,800 gsf of library space. With a service population of approximately 33,273 residents and approximately 158,780 printed books, this equates to a ratio of 4.77 books per person and 1.14 gsf of library space per person, exceeding the existing goal.[53] The Main Menlo Park Library currently experiences a shortage of reading room space; overcrowding occurs at children's story times because of an increasing number of children. Additionally, the Belle Haven Branch Library is unable to handle additional demand because of limited space, the hours of operation, and its location. There are plans to renovate the Main Menlo Park Library in the future.[54]

Environmental Impacts

This section describes the impact analysis related to public services for the Project. It describes the methods used to determine the impacts of the Project and lists the thresholds used to conclude whether an impact would be significant. Impacts are determined to be either no impact (NI), less than significant (LTS), less than significant with mitigation (LTS/M), or significant and unavoidable (SU). Measures to mitigate (i.e., avoid, minimize, rectify, reduce, eliminate, or compensate for) significant impacts accompany each impact discussion, as needed.

Thresholds of Significance

In accordance with Appendix G of the California Environmental Quality Act (CEQA) Guidelines, the Project would be considered to have a significant impact if it would result in any of the conditions listed below.

- Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities or a need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, to maintain acceptable service ratios, response times, or other performance objectives for fire protection, police protection, schools, parks, or other public services and facilities.

Methods for Analysis

Potential impacts on public services are evaluated by

- Assessing the potential for the Project to increase demand for public services, based on goals established by service providers, and
- Comparing the ability of the service provider/public facility to serve the Project and accommodate the associated increase in demand.

[52] City of Menlo Park. 1994. *City of Menlo Park General Plan*. General Plan Background Report, Public Facilities and Services. Page B-VI-8.

[53] The service population is the same as the City's jurisdictional population, which is provided in Section 3.12, *Population and Housing*.

[54] City of Menlo Park Libraries. 2015. *Existing Conditions Questionnaire Response for Facebook Campus Expansion Project*. November 5.

A determination is then made as to whether the existing services and facilities are capable of meeting the demand of the Project and, if not, if expansion of existing facilities could cause an adverse environmental effect. The analysis is based on a review of City documents and maps, field reconnaissance, and direct communications with City service providers.

Impacts and Mitigation Measures

Impact PS-1: Impacts on Fire Services. The Project would not result in the need for new or physically altered fire service facilities. (LTS)

The MPFPD has indicated that demands associated with the Project could place a strain on current staffing levels, requiring additional resources to provide adequate fire and emergency medical service protection.[55] The Project is anticipated to increase the daytime population by approximately 6,550 people;[56] therefore, the Project is expected to increase fire and medical calls. Based on MPFPD standards, with each employee equivalent to 0.58 resident,[57] the Project would add approximately 3,799 people to the service population. The Project would generate a housing demand of 175 units in the city (and in the MPFPD's service area) and could result in 457 new residents, as explained in Section 3.12, *Population and Housing*.[58] In total, the Project could result in approximately 4,256 people added to MPFPD's service population.[59]

If there were no increase in MPFPD staffing (95 fire safety personnel), then the ratio would decrease from 0.85 to 0.82 position per 1,000 residents upon implementation of the Project.[60] To maintain the current ratio, approximately four new fire safety staff employees would need to be hired. As described above, the MPFPD currently plans to expand Station 2 and Station 6. Therefore, additional personnel could be accommodated within the expanded Station 2 and Station 6, or other existing MPFPD stations. Although the Project could require additional staff members to maintain the service ratios, the Project alone would not trigger the need for new or expanded facilities.

Even if expanded facilities would be needed, the existing stations are located on infill lots in the city and neighboring jurisdictions, which are highly developed. The scale of the expansion necessary is unlikely to result in significant and unavoidable environmental impacts. Given the nature of the projects (fire stations) and their size, environmental documents for fire station construction or expansion are typically processed as categorical exemptions or negative declarations. Some lead agencies have determined that fire station expansions qualify for a categorical exemption under Section 15301 of the

[55] Schapelhouman, Harold. Fire Chief, Menlo Park Fire Protection District. November 16, 2015—email to Kyle Perata, City of Menlo Park.

[56] This draft environmental impact report assumes that no employees currently work at the Project site.

[57] Schapelhouman, Harold. Fire Chief, Menlo Park Fire Protection District. November 16, 2015—email to Kyle Perata, City of Menlo Park.

[58] As stated in Section 3.12, *Population and Housing,* approximately 7.6 percent of all city residents also work in the city. However, for purposes of this analysis, it is assumed that 4.8 percent of the employees generated by the Project would seek and find housing in the city because it is more representative of Facebook's existing employment patterns. Using 7.6 percent, the Project would increase the number of new residents in the city by approximately 722. For purposes of this analysis, the historic Facebook employment patterns (4.8 percent) are used to determine the impacts.

[59] 4,256 = 3,799 people from Project employees + 457 new residents from the Project.

[60] 0.82 = (95 fire safety personnel/new service population [111,850 + 4,256 = 116,106]) × 1,000 residents.

CEQA Guidelines.[61] As such, if expanded facilities would be needed, beyond the existing planned expansions of Station 2 and Station 6, the physical environmental impacts would likely be less than significant.

The Project would be required to comply with all applicable MPFPD codes and regulations and meet MPFPD standards related to fire hydrants (e.g., water fire-flow requirements, spacing of hydrants), the design of driveway turnaround and access points to accommodate fire equipment, and other standards. Specifically, MPFPD Fire Prevention Code Section 903.2 requires automatic fire sprinkler protection for commercial occupancies of more than 5,000 gsf if the building is 40 feet or taller.

The MPFPD Board of Directors recently approved a Nexus Impact Fee Study as part of a Fire Protection Facilities Impact Fee Program. Once adopted by the City, the Project Sponsor would be required to pay applicable facilities fees, as outlined in the Fire Protection Facilities Impact Fee Program for new construction at the Project site. Payment of this fee would further address the potential need for any additional fire service equipment.

Upon Project completion, the MPFPD would continue to serve the Project area and respond to calls for assistance from its existing stations. As described above, Stations 1, 2, 5, and 77 are less than 2 miles from the Project site. In addition, the MPFPD has an automatic aid agreement with the City of Redwood City and the City of Palo Alto to provide backup and respond in the event of a major fire and an automatic aid agreement with the City of Palo Alto. At this time, it is assumed that the additional firefighters that could be needed as a result of the Project, and any additional necessary equipment to serve the Project, could be accommodated by currently planned expansion of Station 2, by the currently planned expansion of Station 6, or within existing Station 77. As such, the Project would not result in substantial adverse physical environmental impacts associated with the provision of new or physically altered fire and emergency service facilities in order to maintain acceptable service ratios, response times, or other performance objectives. Fire service impacts as a result of the Project would be ***less than significant***.

Impact PS-2: Impacts on Police Services. The Project would not result in the need for new or physically altered police service facilities. (LTS)

The Project could affect the MPPD by intensifying site activity, adding new employees and visitors, increasing square footage, and increasing traffic incidents. In addition, the Project could increase the need for police service related to investigations, search warrants, protests, and dignitary/celebrity visits. Potential traffic impacts from the Project could increase incident response times. In total, the Project would increase the number of employees at the Project site to approximately 6,550. As stated above, when calculating the service population, the MPPD considers employees who work in Menlo Park as a one-third of a resident. As such, the MPPD's service population resulting from Project-related employment would increase by approximately 2,183 people, from 42,046 to 44,229. This would result in a nominal decrease in the officer-per-resident ratio, which would reduce from 1.14 officers per 1,000 residents to 1.07 officers per 1,000 residents.[62] In order to maintain the current ratio, approximately three additional officers would need to be hired. However, a service ratio of 1.07 officers per 1,000 residents would continue to exceed the MPPD's service goal of one sworn officer per 1,000 residents; as such, the Project would not degrade ratios beyond established goals. Police surveillance in the Project

[61] *City of Hayward v. Board of Trustees of the California State University*. Court of Appeal of the State of California, First Appellate District, Division Three. Filed on November 30, 2015. Available: <http://www.courts.ca.gov/opinions/documents/A131412A.PDF>. Accessed on April 15, 2016.

[62] 1.07 = (48 officers/new service population [42,046 + 2,183 = ~44,229]) × 1,000 residents.

area would continue with routine patrols and responses to calls for assistance. As stated previously, the Project could increase incident response times; if that occurs, response times may become excessive (i.e., above industry standards), which would have to be addressed. The Project would not require the MPPD to expand its current service boundary to include the Project area because it is already included in Beat 3.

The Project site would most likely be served by private security for basic monitoring of the site and buildings, which would supplement police patrol services already provided by the MPPD. In addition, the perimeter of Buildings 21 and 22 would be secured with an approximately 8-foot-high fence, comparable in design to the perimeter fencing at Building 20, with security stations at each entry to monitor and secure access to the private buildings. As part of the City's review process, the MPPD would review plans and safety features of the Project to ensure that safety standards are properly designed. As part of this process, additional safety and security measures could be added as the Project design is refined, such as controlled access points, intrusion barriers, additional security cameras, and/or area alarms in specific areas of the site and inside the buildings, where appropriate.

The Project is anticipated to put an additional demand on MPPD because of an increased number of employees and residents. The increase in service population would change the existing ratio of 1.14 sworn officers per 1,000 residents to 1.07 sworn officers per 1,000 residents. However, this ratio would continue to exceed the MPPD's service goal of one sworn officer per 1,000 residents. Therefore, no additional MPPD staff members or equipment would be required, and MPPD facilities would not need to be expanded or constructed. As such, impacts on the MPPD would be ***less than significant***.

Impact PS-3: Impacts on School Facilities. The Project would not result in the need for new or physically altered school facilities. (LTS)

As previously stated, four elementary/middle school districts and one high school district serve the city. However, the Las Lomitas School District would not be affected by the indirect population increases associated with the Project and, therefore, is not considered in this analysis. The Project would consist of office uses and would not construct residential units that would generate school-age students in these school districts. However, as stated in Section 3.12, *Population and Housing*, the Project would indirectly induce housing demand by increasing employment within the city. Specifically, it is estimated that 175 new households would be expected to be generated in the city as a result of the Project.

To ensure a conservative analysis, for elementary/middle school students, the MPCSD generation rate for single-family dwelling units is used because it is the highest compared with rates of other districts. Similarly, the Ravenswood CSD generation rate for multi-family dwelling units is used because it is the highest compared with rates of other districts. Using these rates, each new single-family dwelling unit would generate approximately 0.44 student, and each new multi-family unit would generate approximately 0.56 student. For high school students, each new dwelling unit would generate 0.2 student, according to the rate used by the SUHSD. At this time, the types of housing units that the Project employees would occupy are unknown. Therefore, this analysis assumes a breakdown in housing units similar to that of existing housing unit types within the city. According to the City's Housing Element, approximately 63 percent of housing units within the city are single-family units/townhouses and 37 percent are multi-family units.[63] Therefore, for the purposes of this analysis, it is assumed that the 175 new households generated by the Project would occupy 110

[63] City of Menlo Park. 2014. *Housing Element*. Adopted April 1, 2014.

single-family dwelling units and 65 multi-family dwelling units. Therefore, in total, Project could generate approximately 84[64] elementary/middle school students and approximately 35 high school students.[65]

Elementary and Middle Schools. Three elementary/middle school districts would serve the new housing, an indirect result of the Project. Based on enrollment statistics from existing Facebook employees, it is assumed that approximately 82 percent of the projected students would attend MPCSD, 9 percent would attend Ravenswood CSD, and 9 percent would attend Redwood CSD. This equates to approximately 68 projected students attending MPCSD, approximately 8 projected students attending Ravenswood CSD, and approximately 8 projected students attending Redwood CSD.

MPCSD. As shown in Table 3.13-1, there is currently capacity for a total of 303 additional elementary school students and 267 additional middle school students within the MPCSD. The 68 students generated by the Project, if evenly distributed between the brackets (elementary [kindergarten through fifth] and middle [sixth through eighth]), would result in approximately 45 new students at the elementary schools and 23 new students at the middle school.[66] The elementary school students and middle school students generated by the Project would represent approximately 14.9 percent and 8.6 percent of the existing capacity in MPCSD, respectively. The 68 new students would be able to be accommodated in the existing facilities without increasing class sizes. Furthermore, with the expansion of Laurel School, there will be additional capacity for 90 students. If a school reaches capacity within a school district, then students would be sent to the next closest school. Therefore, it is anticipated that the MPCSD would be able to accommodate the increase in students potentially generated by the Project.

Ravenswood CSD. As shown in Table 3.13-2, there is currently capacity for a total of 81 additional students within the Ravenswood CSD. The 8 students generated by the Project would represent approximately 9.9 percent of the existing capacity in the Ravenswood CSD. Therefore, it is anticipated that the Ravenswood CSD would be able to accommodate the increase in students potentially generated by the Project.

Redwood CSD. As shown in Table 3.13-3, there is currently capacity for a total of 913 additional students within the Redwood CSD. The 8 students generated by the Project would represent approximately 0.9 percent of the existing capacity in the Redwood CSD. Therefore, it is anticipated that the Redwood CSD would be able to accommodate the increase in students potentially generated by the Project.

High Schools. Only one high school district, the SUHSD, currently serves the city. A new public magnet high school is proposed in the SUHSD and could accommodate approximately 400 students. Without considering any current capacity in the existing high schools within the SUHSD, the 35 high school students generated by the Project would represent 4.4 percent of the future capacity at the new high school proposed in the SUHSD. Additionally, as explained above, the SUHSD is expanding four of its existing high school campuses. Expansion of these four high schools could increase available capacity within the SUHSD, which would further reduce the portion of the capacity of the SUHSD represented by the Project. Therefore, it is anticipated that the SUHSD would be able to accommodate the increase in students potentially generated by the Project.

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[64] (110 single-family units × 0.44 student/unit = 48 new students) + (65 multi-family units × 0.56 student/unit = 36 new students) = 84 total new elementary/middle school students.

[65] (110 single family units * 0.2 student/unit = 22 new students) + (65 multi-family units × 0.2 student/unit = 13 new students) = 35 total new high school students.

[66] The 68 total students, distributed evenly by grade (nine total grades) = 7.6 students per grade. 7.6 × 6 grades = 45 elementary school students; 7.6 × 3 grades = 23 middle school students.

Overall School Impacts. As discussed above, the Project could result in an increase in students within the city, which could affect the MPCSD, the Ravenswood CSD, the Redwood CSD, and the SUHSD. It should be noted, however, that the actual generation of new students would be a tertiary impact of the Project. The Project would directly increase employment, which is expected to generate housing demand, and thus induce more housing, a secondary impact. Construction of more housing units would generate more students, a tertiary impact.

Non-residential development, including the Project, is subject to SB 50 School Impact Fees (established by the Leroy F. Greene School Facilities Act of 1998). As a result of the wide-ranging changes in the financing of school facilities, including the passage of state school facilities bonds, which are intended to provide a major source of financing for new school facilities, Section 65996 of the State Government Code states that the payment of school impact fees that may be required by any state or local agency, as established by SB 50, is deemed to constitute full and complete mitigation for school impacts from development. In addition, the new residential development that may indirectly result from the increase in employment and generate students would be subject to separate CEQA review as well as residential school impact fees, which are higher than non-residential school impact fees. As a result, the impacts related to schools would be ***less than significant***.

Impact PS-4: Impacts on Parks and Recreational Facilities. The Project would not result in the need for new or physically altered parks and recreational facilities. (LTS)

The Project site would be organized around a publicly accessible open space that would be owned and managed by Facebook. The final design of the open space would be subject to review and approval by the City. The open space would be approximately 2 acres in size and provide a connection through the Project site to the Bay Trail. As a privately owned public space, the open space would not be considered part of the Department's parkland and would not affect the parks service ratio, which is discussed in more detail below. The Project would also include a multi-use bicycle/pedestrian bridge over State Route 84 that would provide access to the Bay Trail and Bedwell Bayfront Park (Bayfront Park) from the Project site and the Belle Haven neighborhood. In addition, a new approximately 1-acre terraced garden space, primarily for employee use, would be provided between Buildings 20 and 21. Furthermore, an outdoor terraced area would be located adjacent to the food court/dining area on the south side of Building 22. The proposed onsite features provided for employee use would reduce the likelihood of employees utilizing City facilities.

As stated in Section 3.12, *Population and Housing*, the Project could generate approximately 457 new residents in the city. These employees and their families could use the City's park facilities during non-work hours. As explained above, the Department currently exceeds its goal of 5 acres per 1,000 residents and has not identified any existing capacity issues. The 457 new residents in the city would reduce the park service ratio from 6.64 to 6.55[67] residents per 1,000 acres of parklands, thereby still exceeding the City's service goal of 5 acres of parkland per 1,000 residents. In addition, given the availability of City-maintained parks, population growth related to the Project is not anticipated to increase the use of recreational resources such that substantial physical deterioration would occur. The Project would be subject to supplemental property taxes to pay for bonds issued for park and recreation.

[67] 6.55 = (221 acres/33,273 + 457 population) × 1,000 residents.

As discussed above, the Department is currently at capacity during peak times (4:00 p.m. to 10:00 p.m. Monday through Friday and Saturday mornings) with respect to sports field rentals, pre-school and developmental gymnastics classes, the Burgess Pool, gymnasium (sports activities), and two of the community centers for various classes. Because of the employee and residential population in the city, which would increase as a result of the Project, the use of these existing facilities may increase somewhat. However, it is not anticipated that the increase in population would exacerbate existing capacity issues because the increased use of recreational facilities is expected to be spread out among several parks and recreational facilities in the area, including the facilities proposed as part of the Project. The Project would not trigger the need for the construction or expansion of parks or other recreational facilities. Therefore, impacts would be ***less than significant***.

Impact PS-5: Impacts on Library Facilities. The Project would not result in the need for new or physically altered library facilities. (LTS)

As discussed above, the City's libraries have a wide range of resources accessible to the community. As stated in Section 3.12, *Population and Housing*, the Project would result in approximately 457 new residents in the city. As discussed above, the goal of the Menlo Park Library is to maintain a ratio of 3.29 books per capita and 1.02 gsf of library space per capita. The 457 new residents would slightly degrade the existing ratios from 4.77 to 4.71[68] books per capita and from 1.14 to 1.12[69] gsf per capita. Nonetheless, this would still be above the current goals and standards.

As discussed above, the Main Menlo Park Library currently experiences a shortage of reading room space, and overcrowding occurs at children's story times because of an increasing number of children.

As calculated in Impact PS-3, the Project would generate approximately 75 elementary school students, which could increase demand at children's story time. However, the Project would not result in a significant new demand that would result in the need for new or physically altered facilities because the increased demand for children's story time is expected to be spread out between both of the City's libraries.

It is expected that the existing libraries in the city would be able to accommodate an increase in employment at the Project site and the associated increase in residents. Therefore, impacts would be ***less than significant***.

Cumulative Impacts

The geographic context for this cumulative public services analysis is the service area of the service in question. For instance, the geographic context for cumulative impacts on police services and park/recreational facilities is the city because these services are provided on a citywide basis, and the service ratios by which demand is estimated are based on citywide figures. However, the fire protection cumulative context area would include the Menlo Park and the cities of Palo Alto, Atherton, East Palo Alto, and parts of unincorporated San Mateo County to correspond with the MPFPD's service area. Likewise, the cumulative analysis for impacts on schools would include the communities served by the four school districts discussed in this analysis.

[68] 4.71 = 158,780 print books/(33,273 + 457 new residents).

[69] 1.12 = 37,800 gsf of library space/(33,273 + 457 new residents).

Impact C-PS-1: Cumulative Fire Service Impacts. The Project, in combination with other foreseeable development in the city, would not result in the need for new or physically altered fire service facilities. (LTS)

Other development projects within the city would include commercial, industrial, office, mixed-use, hotel, educational, and residential developments, as shown in Table 3.0-3, and would increase the demand for fire and emergency services. Population and employment growth would increase service calls and potentially create a need for additional facilities to maintain existing MPFPD service levels. Additionally, new development and intensification of existing land uses could result in taller buildings. These changes would result in the need for larger fire suppression apparatus, new specialized equipment, and added personnel, which would require either the expansion or relocation of existing fire stations.[70]

As noted above, the firefighter-to-resident ratio of the MPFPD is currently 0.85 firefighter per 1,000 residents. The MPFPD's staffing is currently adequate for daily operations, based on the current risk profile, population, and call volumes. The MPFPD considers growth forecasts during its annual budgeting process. The MPFPD currently anticipates a 22.6 percent increase in the service population by 2040, increasing by approximately 24,000 people.[71] Assuming steady growth, this would represent a growth rate of approximately 960 new people per year and approximately 4,800 additional people by 2020. Additional firefighters and facilities would be required to accommodate projected cumulative growth and maintain the same level of service as under existing conditions.

As discussed above in Impact PS-1, additional personnel could be accommodated within the expanded Station 2 or Station 6, or other existing MPFPD stations. The physical environmental impacts resulting from potential future expansions of stations (other than the planned expansions of Station 2 and Station 6) located within the urban setting of the city and neighboring jurisdictions would very likely be less than significant. In addition, the MPFPD Board of Directors recently approved a Nexus Impact Fee Study as part of a Fire Protection Facilities Impact Fee Program. Therefore, the project sponsors for other development projects within the city would be required to pay applicable facilities fees, as outlined in the Fire Protection Facilities Impact Fee Program for new construction. While the effective date for this impact fee is unknown at this time, the payment of this fee would further address the potential need for any additional fire service personnel or equipment. Therefore, cumulative development is not expected to result in a significant cumulative impact on fire protection services. Overall cumulative impacts are considered ***less than significant***.

Impact C-PS-2: Cumulative Police Service Impacts. The Project, in combination with other foreseeable development in the city, would not result in the need for new or physically altered police service facilities. (LTS)

Other development projects within the city would increase the demand for police protection services. As noted, the MPPD's current service ratio is approximately 1.14 sworn officers per 1,000 residents. ABAG's *Projections 2013* anticipates 1,000 additional residents and 2,210 new jobs in the city in 2020 compared to 2015.[72] This would result in an anticipated total service population increase of approximately 1,736

[70] Menlo Park Fire Protection District. 2013. *Fire Protection Facilities Impact Fee Nexus Study – Administrative Draft.* June. Prepared by Seifel Consulting and Urban Economic.

[71] Menlo Park Fire Protection District. 2013. *Fire Protection Facilities Impact Fee Nexus Study – Administrative Draft.* June. Prepared by Seifel Consulting and Urban Economic.

[72] Association of Bay Area Governments. *Projections 2013*. December.

people (assuming the MPPD standard of each worker in the city as one-third of a resident). The Project, in combination with other projected growth in the city, would increase population, employment, and housing in the city.

Population forecasts are reviewed during the annual budgeting process to determine whether additional police services will be required to accommodate growth. In 2020, a resident population of 38,700 persons and a worker population of 11,377[73] persons (based on MPPD calculation of each employee as one-third of a resident[74]) would result in a total MPPD service population of 50,077 persons. Given current MMPD staffing (48 sworn officers), this would result in a ratio of 0.96 officer per 1,000 residents, which is below the current service ratio of 1.14. Additional police officers would be required to accommodate projected cumulative growth and maintain the same level of service as under existing conditions. However, it is not anticipated that a substantial number of additional officers, which would require additional facilities, would be hired because the MPPD would prefer to maintain a ratio of one sworn officer per 1,000 residents. Therefore, cumulative development is not expected to result in a significant cumulative impact on police protection services. Overall cumulative impacts are considered ***less than significant***.

Impact C-PS-3: Cumulative School Service Impacts. The Project, in combination with other foreseeable development in the city, would not result in the need for new or physically altered school facilities. (LTS)

The geographic context for an analysis of cumulative school impacts is the area served by the MPCSD, the Redwood CSD, the Ravenswood CSD, and the SUHSD. Future housing projects in this area would generate additional students who would need to be accommodated within the school districts.

As previously discussed, Section 65996 of the State Government Code explains that payment of school impact fees established by the Leroy F. Greene School Facilities Act of 1998 is deemed to constitute full and complete mitigation for school impacts. The aforementioned school districts have enacted development fees in accordance with the Leroy F. Greene School Facilities Act and levy these fees on development projects within its service area. Development projects would be required to pay the school impact fees, which are based on the amount of proposed residential and commercial space. This process and fee payment would ensure that services to accommodate current and future citywide growth could be reasonably provided within the cumulative context. Therefore, cumulative development is not expected to result in a significant cumulative impact on schools, and overall cumulative impacts are considered ***less than significant***.

Impact C-PS-4: Cumulative Park and Recreational Impacts. The Project, in combination with other foreseeable development in the city, would not result in the need for new or physically altered parks and recreational facilities. (LTS)

The geographic context for an analysis of cumulative impacts on parks and recreation is the city, because the Department is responsible for providing recreational and cultural programs for the residents of the city. The City has adopted a goal of maintaining a ratio of 5 acres of developed parkland per 1,000 residents. This results in a current ratio of 6.64 acres per 1,000 residents, which exceeds the goal. According to ABAG's *Projections 2013*, the population in Menlo Park could increase to 38,700 by 2020.[75] A total population of 38,700 people, utilizing 221 acres of parkland, yields a ratio of 5.71 acres

[73] Based on the 34,130 estimated jobs in Menlo Park in 2020, as discussed in Section 3.12, *Population and Housing*.

[74] Note that based on MPFPD standards, each employee is equivalent to 0.58 resident, while MPPD standards considers each employee equivalent to one-third of a resident.

[75] Association of Bay Area Governments. *Projections 2013*. December.

per 1,000 residents, which still exceeds the goal. Therefore, cumulative development is not expected to result in a significant cumulative impact on parks and recreation, and overall cumulative impacts are considered ***less than significant***.

Impact C-PS-5: Cumulative Library Service Impacts. The Project, in combination with other foreseeable development in the city, would not result in the need for new or physically altered library facilities. (LTS)

The geographic context for an analysis of cumulative impacts on library services is the area served by the Peninsula Library System, a consortium of 32 city, county, and community college libraries in San Mateo County. Other development in this service area would place additional demand on library services. This would be a significant cumulative impact if new libraries are not constructed to accommodate regional growth. According to the general plan, the goal of the City is to maintain a ratio of 3.29 books per capita and 1.02 gsf of library space. According to ABAG's *Projections 2013*, the population in San Mateo County could increase to 325,400 by 2020.[76] Cumulative growth, in combination with ambient growth in the county, would, without construction of new libraries or expansion of existing libraries, result in a reduction in the number of books per capita and could force the existing ratio of 4.77 books per person and 1.14 gsf of library space per person to below the acceptable threshold. This is a potentially significant cumulative impact.

The Project would not directly add resident population to the city, although some employees may choose to reside within the city. As noted earlier, the Project is expected to increase the population in the city indirectly by approximately 457 residents. As stated above, the goal of the Menlo Park Library is to maintain a ratio of 3.29 books per capita and 1.02 gsf of library space. The increase in 457 residents would slightly degrade the existing ratios from 4.77 to 4.70 books per capita and from 1.14 to 1.12 gsf per capita. Although the Main Menlo Park Library currently experiences a shortage of reading room space and overcrowding occurs at children's story times, the Project would not contribute to a significant cumulative demand for these services because only approximately 75 elementary school students would be generated by the Project. The increased demand for children's story time is expected to be spread out between both City libraries, which would most likely accommodate the development projects in the city. Therefore, the Project would not result in a cumulatively considerable contribution to any potential cumulative impact on library services, and the cumulative impact would be ***less than significant***.

[76] Association of Bay Area Governments. *Projections 2013*. December.

3.14 Utilities and Service Systems

This section describes the affected environment and regulatory setting for utilities and service systems. It also describes the impacts on utilities and service systems that would result from implementation of the Facebook Campus Expansion Project (Project) and mitigation measures that would reduce these impacts. Cumulative impacts are discussed at the end of this section.

The analysis is based on information from the Menlo Park Municipal Water District (MPMWD) 2010 Urban Water Management Plan (UWMP), adopted July 2011; the draft MPMWD 2015 UWMP, expected to be adopted in mid-2016; the San Francisco Public Utilities Commission (SFPUC) 2010 UWMP (June 2011); and the SFPUC Water System Improvement Program (WSIP) Program Environmental Impact Report (PEIR), certified October 30, 2008. The analysis also incorporates information from the Water Supply Assessment (WSA) for the Project prepared by Erler & Kalinowski, Inc. (EKI) (Appendix 3.14).[1]

No comments pertaining to utilities were received in response to the Notice of Preparation (NOP) (Appendix 1).

Existing Conditions

Regulatory Setting

Federal

National Pollutant Discharge Elimination System. Refer to Section 3.10, *Hydrology and Water Quality*, for information regarding applicable National Pollutant Discharge Elimination System (NPDES) permits associated with the regulation of stormwater.

Safe Drinking Water Act. The U.S. Environmental Protection Agency (EPA) administers the Safe Drinking Water Act (SDWA), the primary federal law that regulates the quality of drinking water and establishes standards to protect public health and safety. The Department of Health Services (DHS) implements the SDWA and oversees public water system quality statewide. DHS establishes legal drinking water standards for contaminates that could threaten public health.

State

Urban Water Management Planning Act. Section 10610.4 of the California Urban Water Management Planning Act specifies that "Urban Water Suppliers shall be required to develop water management plans to actively pursue the efficient use of available supplies." MPMWD approved the amended 2010 UWMP.[2] According to the WSA, the most recent update to the Water Shortage Contingency Plan was completed in May 2015. The overall reduction goals in the Water Shortage Contingency Plan are established in five drought stages for water demand reductions of up to 50 percent.

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[1] Erler & Kalinowski, Inc. 2016. *Water Supply Assessment Study, Facebook Campus Expansion, Menlo Park, California.* February 3, 2016.

[2] Menlo Park Municipal Water District. 2010. *Urban Water Management Plan*. Available: <http://www.menlopark.org/150/Urban-Water-Management-Plan>. Accessed: November 4, 2015.

Senate Bill 610. Effective January 1, 2002, the State of California, through Senate Bill 610 (SB 610) requires that a city or county, and the associated public water system, prepare a WSA for projects that meet certain criteria:

- A project creating the equivalent demand of 500 residential units,
- A proposed shopping center or business establishment employing more than 1,000 persons or having more than 500,000 gross square feet (gsf) of floor space, or
- A commercial office building employing more than 1,000 persons or having more than 250,000 gsf of floor space.

The Project meets the criteria for requiring a WSA because it would create employment for more than 1,000 persons and include more than 250,000 gsf of floor space. The WSA that is required as part of the California Environmental Quality Act (CEQA) process must include, among other information, an identification of existing water supply assessments, water rights or water service contracts relevant to the identified water supply for the Project, and water received in prior years pursuant to those entitlements, rights, and contracts. A WSA was prepared for the Project by EKI (Appendix 3.14), the results of which are incorporated in this section. The City Council received an overview of the WSA on February 9, 2016. Final action on the WSA will be concurrent with the City Council's action on the overall Project.

Executive Order B-29-15. Effective April 1, 2015, Executive Order B-29-15 proclaimed that the provisions contained in Governor Brown's January 17, 2014, Proclamation; April 25, 2014, Proclamation; and Executive Orders B-26-14 and B-28-14, which direct State officials to take necessary actions to prepare for drought conditions, remain in full force, with some modifications. Governor Brown's January 17, 2014, Proclamation declared a State of Emergency and directed State officials to take all necessary actions to prepare for drought conditions. The April 25, 2014, Proclamation is an executive order that strengthened the State's ability to manage water and habitat effectively in drought conditions and called on Californians to redouble their efforts to conserve water. Executive Order B-26-14 streamlined efforts to provide water to families in dire need. Executive Order B-28-14 extended the waiver of CEQA and Water Code Section 13247 in paragraph 9 of the January 17, 2014, Proclamation. In addition, paragraph 19 of the April 25, 2014, Proclamation has been extended through May 31, 2016.

One of the additional modifications to the executive orders and proclamations noted above concerns the water restrictions imposed by the State Water Resources Control Board (State Water Board) to achieve a statewide 25 percent reduction in potable urban water usage through February 28, 2016. These restrictions will require water suppliers to California's cities and towns to reduce usage compared with the amount used in 2013.

Senate Bill x7-7 2009 (Water Conservation Act of 2009). Effective January 1, 2010, Senate Bill x7-7 (SB x7-7) requires the State to achieve a 20 percent reduction in urban per capita water use by December 31, 2020. In addition, SB x7-7 requires agricultural water management plans and efficient water management practices for agricultural water suppliers and promotes expanded development of sustainable water supplies at the regional level. The portion of SB x7-7 focused on urban water management establishes processes for urban water suppliers to meet the statewide water conservation targets. Further, SB x7-7 requires California Department of Water Resources (DWR) review and reporting on urban water management plans; creates a Commercial, Industrial, and Institutional (CII) Task Force to develop best management practices (BMPs) for water use in this sector; requires DWR to promote implementation of regional water resource management practices through increased incentives; and requires DWR, in consultation with the State Water Board, to develop or update statewide targets for recycled water, brackish groundwater desalination, and urban stormwater runoff.

California Integrated Waste Management Act (Assembly Bill 939). To minimize the amount of solid waste that must be disposed of by transformation and land disposal, the State legislature passed Assembly Bill 939, the California Integrated Waste Management Act of 1989 (AB 939), effective January 1990. According to AB 939, all cities and counties in California were required to divert 25 percent of all solid waste from landfill or transformation facilities by January 1, 1995, and 50 percent by January 1, 2000.

Solid waste plans are prepared by each jurisdiction to explain how each city's AB 939 plan is integrated with its county plan. The plans must promote, in order of priority, source reduction, recycling and composting, and environmentally safe transformation and land disposal. The City/County Association of Governments of San Mateo County (C/CAG) is responsible for review of and comment on a Countywide Integrated Solid Waste Management Plan (CIWMP) through its Solid Waste Advisory Committee.

Public Resources Code (PRC) Sections 41770 and 41822 and Title 14 of the California Code of Regulations (CCR), Section 18788, require each city and county to review and revise, if necessary, the CIWMP at least once every 5 years. The 2009 CIWMP is the most recent iteration of the C/CAG's CIWMP.[3]

State Model Ordinance, California Solid Waste Reuse and Recycling Access Act of 1991 (AB 1327). AB 1327 requires development projects to reserve adequate areas for collecting and loading recyclables. The City of Menlo Park (City), in its building code, similarly has requirements for including garbage and recycling enclosures in site design, including space for recycling containers and access for recycling and garbage collection trucks.

California Assembly Bill 341 (AB 341). AB 341 requires all businesses and public entities that generate 4 cubic yards or more of waste per week to have a recycling program in place. The purpose of the law is to reduce greenhouse gas (GHG) emissions by diverting commercial solid waste to recycling efforts and expand the opportunity for additional recycling services and recycling manufacturing facilities in California.[4]

Mandatory Commercial Organics Recycling (AB 1826). Mandatory Commercial Organics Recycling, AB 1826, became effective on January 1, 2016. It requires businesses and multi-family complexes (with five or more units) that generate specified amounts of organic waste (compost) to arrange for organics collection services. The law phases in the requirements on businesses, with full implementation realized in 2019, as follows:

- First Tier: Commencing in April 2016, the first tier affects businesses that generate 8 or more cubic yards of organic materials per week.
- Second Tier: In January 2017, the affected businesses will be expanded to include those that generate 4 or more cubic yards of organic materials per week.
- Third Tier: In January 2019, the affected businesses will be further expanded to include those that generate 4 or more cubic yards of solid waste per week.

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[3] County of San Mateo, Public Works Department. 2009. *Five-Year Countywide Integrated Waste Management Plan Review Report, San Mateo County.* December. Available: <http://www.co.sanmateo.ca.us/bos.dir/BosAgendas/agendas2010/Agenda20100126/20100126_att1_54.pdf>. Accessed: November 4, 2015.

[4] California Department of Resources Recycling and Recovery. 2015. *Mandatory Commercial Recycling*. Available: <http://www.calrecycle.ca.gov/recycle/commercial/>. Accessed: November 4, 2015.

Building Energy Efficiency Standards (CCR Title 24). Building energy consumption is regulated under CCR Title 24. The efficiency standards contained in this title apply to new construction, both residential and non-residential buildings, and regulate energy consumed for heating, cooling, ventilation, water, and lighting.

Local

Municipal Code, Chapter 12.44. Chapter 12.44[5] of the City Municipal Code defines the water-efficient landscaping standards that must be employed for new landscaping of 500 gsf or more and rehabilitated landscaping of 1,000 gsf or more. All property owners of regulated projects shall complete and submit a landscape project application, comply with the proscriptive compliance requirements, or elect to comply with water budget limitations. In addition, drought emergency measures shall regulate landscapes and irrigation maintenance schedules and require property owners to maintain landscape irrigation facilities to prevent water waste and runoff.

Municipal Code, Chapter 12.48. Chapter 12.48[6] of the City Municipal Code specifies landfill diversion requirements of construction and demolition debris. Commercial construction projects of 5,000 gsf or greater are required to divert at least 60 percent of total generated waste tonnage from landfills through recycling, reuse, salvage, and other diversion programs. Before obtaining a building or demolition permit, project applicants must submit a form and obtain approval from the building division.

City of Menlo Park Climate Action Plan. The City's Climate Action Plan (CAP) (adopted in May 2009)[7] recommends an extensive list of emission reduction strategies related to energy, water, and solid waste. Near-term emission reduction strategies that would also result in decreased use and/or generation of energy, water, and solid waste include, but are not limited to, an energy efficiency and renewable energy financing program, enhancements to recycling services, incentives for building practices that reduce energy consumption beyond current codes, and MPMWD conservation programs. In October 2015, the City released a report that updated the CAP with emissions for years between 2005 and 2013, provided an update on the progress of the projects selected in the previous year's CAP update, and provided a list of CAP projects for fiscal years 2015/2016 through 2019/2020.

The near-term projects include the following:

- Incorporate CAP strategies and GHG emission reductions into City's General Plan update
- Incorporate Zero Net Energy and Leadership in Energy and Environmental Design (LEED) Silver requirements into planning requirements and building codes to increase efficiency in new buildings
- Implement the Energy Star ratings requirement, or other performance tracking methodology, into planning requirements for new buildings

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[5] City of Menlo Park. 2010. *Municipal Code, Title 12: Buildings and Construction, Chapter 12.44: Water-Efficient Landscaping.* Effective: July 1, 2010. Available: <http://www.codepublishing.com/CA/menlopark/>. Accessed: November 4, 2015.

[6] City of Menlo Park. 2010. *Municipal Code, Title 12: Buildings and Construction, Chapter 12.48: Recycling and Salvaging of Construction and Demolition Debris*. Available: <http://www.codepublishing.com/CA/menlopark/>. Accessed: November 4, 2015.

[7] City of Menlo Park. 2009. *Climate Change Action Plan*. Available: http://www.menlopark.org/305/Climate-Action-Plan>. Accessed: January 2016.

- Consider developing an energy-efficient/renewable energy plan for the commercial and residential sectors to re-invigorate energy upgrades for existing buildings
- Consider resiliency strategies for protecting Menlo Park land in the projected sea-level rise (SLR) zone

City of Menlo Park General Plan. The following policies within the Open Space/Conservation Element of the City's General Plan are relevant to the Project:

> *Policy OSC1.11:* Sustainable Landscape Practices. Encourage the enhancement of boulevards, plazas and other urban open spaces in high-density and mixed-use residential development, commercial and industrial areas with landscaping practices that minimize water usage.
>
> *Policy OSC4.2:* Sustainable Building. Promote and/or establish environmentally sustainable building practices or standards in new development that would conserve water and energy, prevent stormwater pollution, reduce landfilled waste, and reduce fossil fuel consumption from transportation and energy activities.
>
> *Policy OSC4.3:* Renewable Energy. Promote the installation of renewable energy technology in residences and businesses through education, social marketing, standards, and/or incentives.
>
> *Policy OSC4.4:* Vehicles Using Alternative Fuel. Explore the potential for installing infrastructure for vehicles that use alternative fuel, such as electric plug-in recharging stations.
>
> *Policy OSC4.5:* Energy Standards in Residential and Commercial Construction. Encourage projects to achieve a high level of energy conservation exceeding standards set forth in the California Energy Code for Residential and Commercial development.
>
> *Policy OSC4.6:* Waste Reduction Target. Strive to meet the California State Integrated Waste Management Board per person target of waste generation per person per day through their source reduction, reuse, and recycling programs.
>
> *Policy OSC4.7:* Waste Management Collaboration. Continue to support and participate in efforts such as the South Bayside Waste Management Authority, which provides waste reduction, recycling, and solid waste programs and solutions.
>
> *Policy OSC4.8:* Waste Diversion. Develop and implement a zero waste policy or implement standards, incentives, or other programs that would lead the community toward a zero waste goal.

The following policy within the Safety Element of the City's General Plan is relevant to the Project:

> *Policy S1.27:* Regional Water Quality Control Board (RWQCB) Requirements. Enforce stormwater pollution prevention practices and appropriate watershed management plans in the RWCQB general National Pollutant Discharge Elimination System requirements, the San Mateo County Water Pollution Prevention program and the City's Stormwater Management Program. Revise, as necessary, City plans so the integrate water quality and watershed protection with water supply, flood control, habitat protection, groundwater recharge, and other sustainable development principles and policies.

ConnectMenlo. The City General Plan (Land Use and Circulation Elements) and M-2 Area Zoning Update, also known as ConnectMenlo, is under way. Although not yet adopted, the following draft policies and goal in ConnectMenlo pertain to the Project and are identified for informational purposes:

> *Policy LU-2.6:* Underground Utilities. Require all electric and communications lines serving new development to be placed underground.
>
> Goal LU-7: Promote the development and maintenance of sustainable public and quasi-public facilities and services to meet the needs of Menlo Park's residents, businesses, workers, and visitors.
>
> *Policy LU-7.1:* Sustainability. Promote sustainable site planning, development, landscaping, and operational practices that conserve resources and minimize waste.

Policy LU-7.5: Reclaimed Water Use. Implement use of adequately treated "reclaimed" (recycled/nonpotable water sources such as, graywater, blackwater, rainwater, stormwater, foundation drainage, etc.) water through dual plumbing systems for outdoor and indoor uses, as feasible.

Policy LU-7.9: Green Building. Support sustainability and green building best practices through the orientation, design, and placement of buildings and facilities to optimize their energy efficiency in preparation of State zero-net energy requirements for residential construction in 2020 and commercial construction in 2030.

Program LU-7.A: Green Building Operation and Maintenance. Employ green building operation and maintenance best practices, including increased energy efficiency, use of renewable energy and reclaimed water, and drought-tolerant landscaping, for all projects.

West Bay Sanitary District Code of General Regulations. Under West Bay Sanitary District's (WBSD's) Code of General Regulations, a Class 3 permit is required for construction of sewer mains, pumping stations, and other wastewater infrastructure. The WBSD manager or his representative shall examine the plans submitted under a Class 3 sewer permit to verify that they are in accordance with good engineering practices and in compliance with the standard specifications and policies of WBSD. Plans that have been so examined and approved will be submitted to the WBSD board for approval, alteration, or rejection. After approval of the plans by the WBSD board, actual construction may be started. All work shall be performed under the inspection of, and in accordance with, the standard specifications of WBSD. All work shall be inspected by WBSD when construction is completed but before use is made of the facilities constructed. Inspection shall be made at such other times as the WBSD manager may require. Subsequent to the district board's acceptance of a sewer system constructed pursuant to a Class 3 permit, but prior to connection of and discharge into the district's wastewater facilities, a Class 2 permit, required for non-residential sewer connections, must be obtained by the applicant. The applicant shall give 24 hours advance notice to the WBSD manager that construction performed under a Class 2 sewer permit is ready for inspection. The applicant shall give 48 hours advance notice with respect to such construction performed under a Class 3 sewer permit.[8]

Environmental Setting

Water Supply, Storage, Treatment, and Distribution

Water Supply. The Project area is served by MPMWD, which supplies water to an area of 4 square miles and a population of approximately 16,100. The remainder of the city is served by the California Water Service Company (Cal Water), O'Connor Tract Cooperative Water Company, and Palo Alto Park Mutual Water Company.[9,10] MPMWD purchases wholesale water from the SFPUC Regional Water System (RWS). The SFPUC RWS comprises two regional water supply and conveyance systems: the Hetch Hetchy system and the Alameda and Peninsula system.

According to the WSA, SFPUC obtains approximately 85 percent of its water from Sierra Nevada snowmelt stored in the Hetch Hetchy reservoir, which is situated on the Tuolumne River in Yosemite National Park. The water from Hetch Hetchy travels more than 160 miles across California by gravity to

[8] West Bay Sanitary District. 2012. *Code of General Regulations of the West Bay Sanitary District*. Revised: September 26, 2012.

[9] City of Menlo Park. n.d. *Menlo Park Municipal Water District*. Available: <http://www.menlopark.org/131/Water-District>. Accessed: January 29, 2016.

[10] Palo Alto Park Mutual Water Company provides water to fewer than 10 residents on Menalto Drive in the city.

reach Menlo Park.[11] The remaining 15 percent of water supply comes from local watersheds through the San Antonio, Calaveras, Crystal Springs, Pilarcitos, and San Andreas Reservoirs. The Hetch Hetchy system delivers 260 million gallons per day (mgd) of water to 1.7 million San Francisco Bay Area (Bay Area) residents, businesses, and community organizations.[12]

The supply quantities for MPMWD during normal rainfall years, a single dry year, and multiple dry years are shown in Table 3.14-1.

Table 3.14-1. MPMWD Water Supply Quantities in Normal, Single, and Multiple Dry Water Years

Water Supply Source	Normal Water Year (mg)	Single Dry Water Year (mg)	Multiple Dry Water Years (mg)		
			Year 1	Year 2	Year 3
MPMWD	1,630	1,281	1,281	1,108	1,108
MPMWD Supply Shortfall - Percent of Average/ Normal Year		4.5%	4.5%	17%	17%

Source: Erler & Kalinowski, Inc. 2016. *Water Supply Assessment Study, Facebook Campus Expansion, Menlo Park, California.* February 3, 2016.
Note:
mg = million gallons (in this case, on an annual basis)

On the San Francisco Peninsula, SFPUC uses Crystal Springs Reservoir, San Andreas Reservoir, and Pilarcitos Reservoir to capture local watershed runoff. In the Alameda Creek watershed, SFPUC uses the recently constructed Calaveras Reservoir and San Antonio Reservoir for water storage. In addition to capturing runoff, these facilities provide storage for Hetch Hetchy diversions and serve as an emergency water supply in the event of an interruption to Hetch Hetchy diversions.

Water Contracts and Agreements. The business relationship between the City and County of San Francisco and wholesale customers is largely defined by the current Water Supply Agreement (Agreement). The City and County of San Francisco and wholesale customers in Alameda County, San Mateo County, and Santa Clara County entered into the Agreement in July 2009. The new Agreement replaced the Settlement Agreement and Master Water Sales Contract from 1984 that expired in June 2009. The Agreement pertains to the rate-making methodology used by the City and County of San Francisco for setting wholesale water rates for wholesale customers and the water supply and water shortages associated with the SFPUC RWS. The Agreement, which has a 25-year term, is supplemented by Individual Water Supply Contracts.[13]

The Agreement provides for a 184 mgd "supply assurance" (expressed on an annual average basis) for SFPUC's wholesale customers, subject to a reduction to the extent and the period made necessary by reason of water shortage due to drought, emergencies, or malfunctioning or rehabilitation of the

[11] Bay Area Water Supply and Conservation Agency. 2016. *Hetch Hetchy Water System*. Available: <http://bawsca.org/water-supply/hetch-hetchy-water-system/>. Accessed: January 29, 2016.

[12] Bay Area Water Supply and Conservation Agency. 2016. *About*. Available: <http://bawsca.org/about/>. Accessed: January 29, 2016.

[13] Menlo Park Municipal Water District. 2011. *Final 2010 Urban Water Management Plan and Update to the Water Shortage Contingency Plan*. June. Available: <http://www.menlopark.org/150/Urban-Water-Management-Plan>. Accessed: January 27, 2016.

regional water system.[14] Each member holds an Individual Water Supply Contract with SFPUC; the Agreement governs these contracts. Under the Agreement and the Individual Water Supply Contract, each agency negotiates an Individual Supply Guarantee (ISG), described further under the *Menlo Park Municipal Water District* section, below. The 184 mgd supply assurance will survive termination or expiration of the Agreement and the Individual Water Supply Contracts.

Water Supply Improvements. To enhance the availability of the SFPUC water supply system and meet identified service goals for water quality, seismic reliability, delivery reliability, and water supply, SFPUC has undertaken the WSIP, approved October 31, 2008. The WSIP includes a total delivery reliability goal of 265 mgd of supply, with no greater than 20 percent rationing in any one year of a drought. In certifying the PEIR for the WSIP, SFPUC adopted a Phased WSIP Variant for water supply. This Phased WSIP Variant establishes a mid-term water supply planning milestone in 2018, at which point SFPUC will reevaluate water demands through 2030. Concurrent with the adoption of the Phased WSIP Variant by SFPUC, the Interim Supply Limitation (ISL) was also imposed by SFPUC, which limits the volume of water that member agencies and the City and County of San Francisco can collectively purchase from RWS to 265 mgd, until at least 2018.[15] According to the WSIP Regional Projects Quarterly Report for the first quarter of 2015–2016, planning, environmental, design, and construction activities are 100.0 percent, 97.0 percent, 98.2 percent, and 89.1 percent complete, respectively.[16]

SFPUC has committed to providing fishery flows below Calaveras Dam and Lower Crystal Springs Dam, as well as bypass flows below Alameda Creek Diversion Dam, by adopting project-specific approvals for the Calaveras Dam Replacement Project and the Lower Crystal Springs Dam Improvement Project, which are part of the WSIP.[17] These fishery flows could create a shortfall with respect to meeting SFPUC demands of 265 mgd and slightly increase SFPUC's dry-year water supply needs. SFPUC has stated that current decreased levels of demand keep this from being an immediate problem. Deliveries were 247.5 mgd in fiscal year (FY) 2006, 257 mgd in FY 2007, 254.1 mgd in FY 2008, 243.4 mgd in FY 2009, and 225.2 mgd in FY 2010.[18] However, in the near future, SFPUC must resolve these issues. SFPUC is working closely with its staff to develop strategies for meeting the service goal for delivery reliability. In Resolution No. 10-0175, adopted by SFPUC on October 15, 2010, staff members were directed to provide information regarding SFPUC's capability with respect to attaining its water supply levels of service and contractual obligations. This directive was in response to concerns expressed by SFPUC and the wholesale customers regarding effects on water supply as a result of instream flow releases associated with the Lower Crystal Springs Dam Improvement Project and the Calaveras Dam Replacement Project.

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[14] Menlo Park Municipal Water District. 2011. *Final 2010 Urban Water Management Plan and Update to the Water Shortage Contingency Plan*. June. Available: <http://www.menlopark.org/150/Urban-Water-Management-Plan>. Accessed: January 27, 2016.

[15] Menlo Park Municipal Water District. 2011. *Final 2010 Urban Water Management Plan and Update to the Water Shortage Contingency Plan*. June. Available: <http://www.menlopark.org/150/Urban-Water-Management-Plan>. Accessed: January 27, 2016.

[16] San Francisco Public Utilities Commission. 2015. *WSIP Regional Projects Quarterly Report, First Quarter/Fiscal Year 2015–2016.* November 2.

[17] Menlo Park Municipal Water District. 2011. *Final 2010 Urban Water Management Plan and Update to the Water Shortage Contingency Plan*. June. Available: <http://www.menlopark.org/150/Urban-Water-Management-Plan>. Accessed: January 27, 2016.

[18] Menlo Park Municipal Water District. 2011. *Final 2010 Urban Water Management Plan and Update to the Water Shortage Contingency Plan*. June. Available: <http://www.menlopark.org/150/Urban-Water-Management-Plan>. Accessed: January 27, 2016.

The Interim Supply Allocation (ISA) refers to each individual wholesale customer's share of the ISL. On December 14, 2010, SFPUC established each agency's ISA through 2018. In general, SFPUC based the allocations on the lesser of the projected FY 2017–2018 purchase projections or the ISG for each agency. The ISAs are effective only until December 31, 2018, and do not affect the supply assurance or the ISGs.

The Agreement includes a Water Shortage Allocation Plan (WSAP) that addresses shortages of up to 20 percent of system-wide use. The Tier One Shortage Plan allocates water from the RWS between the City and County of San Francisco and the wholesale customers during system-wide shortages of 20 percent or less. The WSAP also anticipated a Tier Two Shortage Plan, adopted by the wholesale customers, which would allocate the available water from the RWS among the wholesale customers.

The Tier One Shortage Plan replaced the prior interim WSAP, adopted in 2000, which also allocated water for shortages up to 20 percent. The Tier One Plan also allows for voluntary transfers of shortage allocations between SFPUC and any wholesale customer as well as between wholesale customers themselves. The Tier One Shortage Plan will expire in 2034, at the end of the term of the Agreement, unless extended by SFPUC and the wholesale customers.

The Tier Two Shortage Plan, the second component of the WSAP, allocates the collective wholesale customer share among each of the 26 wholesale customers that make up the Bay Area Water Supply and Conservation Agency (BAWSCA). The Tier Two Shortage Plan will expire in 2018, unless extended by the wholesale customers. This Tier Two allocation is based on a formula that takes multiple factors into account for each wholesale customer, including the ISG, the seasonal use of all available water supplies, and residential per capita use.

Bay Area Water Supply and Conservation Agency. MPMWD is part of BAWSCA, which was created in 2003 through State legislation (Assembly Bill 2058) to represent the interests of 24 cities and water districts as well as two private utilities in Alameda, Santa Clara, and San Mateo Counties that purchase water on a wholesale basis from SFPUC's regional water system.[19] In particular, there are two primary BAWSCA activities that affect MPMWD's water supply and demand projections: the Water Conservation Implementation Plan (WCIP) and the Long-Term Reliable Water Supply Strategy.

In September 2009, BAWSCA finalized the WCIP, which includes 37 potential demand management activities (i.e., 32 existing measures and five new measures that were defined and developed as part of the WCIP).[20] The WCIP is an implementation plan for BAWSCA and its member agencies to use to attain the water use efficiency goals that BAWSCA's member agencies committed to in 2004 as part of the PEIR for SFPUC's WSIP. The WCIP also identifies how BAWSCA member agencies can use water conservation to continue to provide reliable water supplies to their customers through 2018 given SFPUC's 265 mgd ISL. In addition, BAWSCA is developing its Long-Term Reliable Water Supply Strategy to meet the projected water needs of its member agencies and their customers through 2035 and increase water supply reliability under normal and drought conditions.

[19] Bay Area Water Supply and Conservation Agency. 2016. *About*. Available: <http://bawsca.org/about/>. Accessed: January 27, 2016.

[20] Bay Area Water Supply and Conservation Agency. 2009. *Water Conservation Implementation Plan*. September.

Menlo Park Municipal Water District. As part of the Individual Water Supply Contract with SFPUC, MPMWD has an ISG of 4.465 mgd (or approximately 1,630 million gallons [mg] per year).[21] Table 3.14-2 shows MPMWD's current and future water deliveries by customer sector during normal years. Table 3.14-3 provides a summary of the existing and planned water supply sources for MPMWD. As shown, the current and projected MPMWD water demand (Table 3.14-2) is below MPMWD's projected water supply (Table 3.14-3) during normal years.

Table 3.14-2. MPMWD Existing and Projected Annual Water Deliveries by Customer Sector during Normal Years (in mg)[a]

Water Use Sectors	2014[b]	2020	2025	2030	2035	2040
Single Family	354	447	438	430	425	422
Multi-Family	106	119	117	115	114	113
Commercial	183	150	158	166	174	182
Industrial	215	315	289	264	241	221
Public Facility	50	86	86	87	87	88
Landscape	117	128	133	139	145	151
Other	4	3	3	3	3	3
Total Water Use	1,030	1,248	1,224	1,204	1,189	1,179
Non-Revenue Water[c]	—	62	62	61	61	61
Total Water Demand	1,030	1,310	1,286	1,265	1,251	1,240

Source: Erler & Kalinowski, Inc. 2016. *Water Supply Assessment Study, Facebook Campus Expansion, Menlo Park, California.* February 3, 2016.

Notes:

a. mg = million gallons (in this case, million gallons per year)

b. Data for 2014 are the most recent data available.

c. Non-revenue water is the difference between MPMWD customers' metered use and MPMWD's metered supply. Thus, non-revenue water includes apparent losses, such as customer metering inaccuracies, real losses, such as distribution main leakage, and authorized unmetered uses, such as fire hydrant flow testing. The value for non-revenue water is based on MPMWD's draft 2015 UWMP.

Table 3.14-3. MPWMD Existing and Planned Annual Sources of Water during Normal Years (in mg)

Wholesale Sources	Contracted Volume	2015	2020	2025	2030	2035
SFPUC	1,630	1,630	1,630	1,630	1,630	1,630
BAWSCA Long-Term Strategy	—	—	—	—	—	—
Groundwater Supplies	—	—	—	—	—	—
Totals	1,630	1,630	1,630	1,630	1,630	1,630

Source: Menlo Park Municipal Water District. 2011. *Final 2010 Urban Water Management Plan and Update to the Water Shortage Contingency Plan.* June.

Note:

mg = million gallons (in this case, million gallons per year)

[21] Menlo Park Municipal Water District. 2011. *Final 2010 Urban Water Management Plan and Update to the Water Shortage Contingency Plan.* June. Available: <http://www.menlopark.org/150/Urban-Water-Management-Plan>. Accessed: January 27, 2016.

According to the WSA, MPMWD's draft 2015 UWMP estimates that annual deliveries from SFPUC will be reduced to 1,281 mg during single dry years. Table 3.14-4 shows MPMWD's planned water supply and projected water demand during single dry years. As shown, supply shortfalls relative to total demand during single dry years are estimated to range between 4.5 percent in 2020 and 21 percent in 2040.

Table 3.14-4. MPWMD Planned Water Supply and Projected Water Demand (in mg) during Single Dry Years

Water Supply Source	2020	2025	2030	2035	2040
Primary Supply Sources					
SFPUC	*1,281*	*1,281*	*1,281*	*1,281*	*1,281*
Groundwater	*0*	*0*	*0*	*0*	*0*
Total Dry-Year Potable Supply	1,281	1,281	1,281	1,281	1,281
Potable Demand	1,341	1,403	1,468	1,539	1,614
Supply Shortfall	60	122	187	258	333
Supply Shortfall (% demand)	4.5%	8.7%	13%	17%	21%

Source: Menlo Park Municipal Water District. 2015. *Draft 2015 Urban Water Management Plan.*
Note:
mg = million gallons (in this case, million gallons per year)

According to the WSA, MPMWD's draft 2015 UWMP estimates that annual deliveries from SFPUC will be reduced to 1,108 mg during multiple dry years. Table 3.14-5 shows MPMWD's planned water supply and projected water demand during multiple dry years. As shown, supply shortfalls relative to total demand during the second and third year of a drought are estimated to range between 17 percent in 2020 and 31 percent in 2040.

Other Water Supplies. According to the WSA, MPMWD does not currently operate any potable groundwater wells for water supplies but plans to construct three or four emergency wells to ensure water supply reliability for the lower zone of its service area, which includes the Project site. The wells will be designed to operate following a major earthquake or other emergency. MPMWD is currently preparing environmental documents for the first well at the Corporation Yard and continues to review potential sites for the remaining wells.

MPMWD is also assessing the feasibility of delivering recycled water in its upper zone in collaboration with WBSD. In November 2015, WBSD certified the *Mitigated Negative Declaration for the West Bay Sanitary District Recycled Water Project – Sharon Heights*. The subject of this document is a proposed wastewater treatment plant and recycled water treatment facility in the Sharon Heights area to serve the irrigation demands of the Sharon Heights Golf and Country Club and potentially other customers in the vicinity. MPMWD is also considering options related to recycled water service in the lower zone and options related to onsite recycling and reuse. These and other options will be developed in more detail as part of the update to MPMWD's Water System Master Plan, which has an estimated completion date of 2017.

Table 3.14-5. MPWMD Planned Water Supply and Projected Water Demand (in mg) during Multiple Dry Years

	2020			2025			2030			2035			2040		
Water Supply Source	**Year 1**	**Year 2**	**Year 3**	**Year 1**	**Year 2**	**Year 3**	**Year 1**	**Year 2**	**Year 3**	**Year 1**	**Year 2**	**Year 3**	**Year 1**	**Year 2**	**Year 3**
Primary Supply Sources															
SFPUC	*1,281*	*1,108*	*1,108*	*1,281*	*1,108*	*1,108*	*1,281*	*1,108*	*1,108*	*1,281*	*1,108*	*1,108*	*1,281*	*1,108*	*1,108*
Groundwater	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
Total Dry-Year Potable Supply	1,281	1,108	1,108	1,281	1,108	1,108	1,281	1,108	1,108	1,281	1,108	1,108	1,281	1,108	1,108
Potable Demand	1,341	1,341	1,341	1,403	1,403	1,403	1,468	1,468	1,468	1,539	1,539	1,539	1,614	1,614	1,614
Supply Shortfall	60	233	233	122	295	295	187	360	360	258	431	431	333	506	506
Supply Shortfall (% demand)	4.5%	17%	17%	8.7%	21%	21%	13%	24%	24%	17%	28%	28%	21%	31%	31%

Source: Menlo Park Municipal Water District. 2015. *Draft 2015 Urban Water Management Plan.*
Note:
mg = million gallons (in this case, million gallons per year)

Water Treatment. MPMWD purchases 100 percent of its treated water supplies from SFPUC, as agreed upon in the Agreement and ISG. The purchased water is treated at both the Sunol Valley Water Treatment Plant (WTP) and the Harry Tracy WTP. As of 2011, SFPUC has been engaged in a variety of water treatment and distribution system improvement projects as part of its WSIP, which evolved out of its earlier Water System Master Plan (2000). The WSIP PEIR evaluated the impacts associated with implementation of the WSIP, but individual projects would be subject to project-specific environmental review. In 2013, SFPUC completed expansion of the Sunol Valley WTP, which has the sustainable capacity[22] to treat up to 160 mgd.[23] The Harry Tracy WTP treats 120 mgd; there are plans for expansion and upgrades to sustainably treat 160 mgd.[24] As of late 2015, the Harry Tracy WTP was forecast to be completed in early 2016.[25] Therefore, at capacity, SFPUC would be capable of treating up to 320 mgd. In addition, completed in November 2012, SFPUC's Tesla Water Treatment Facility in Tracy, California, is the largest ultraviolet disinfection treatment plant in California, capable of treating 315 mgd.[26] Therefore, by early 2016, SFPUC should be able to treat up to 635 mgd.

Water Storage and Distribution. MPMWD's water distribution system is split into three different service area zones, as described below.

- The lower zone is located north and east of El Camino Real and serves primarily residential and small commercial land uses. The zone includes the Belle Haven, Bay Road, and Willows neighborhoods.
- The higher pressure zone is located in northern Menlo Park between US 101 and Bayfront Expressway; it serves primarily industrial land uses. This zone includes the Bohannon Industrial Park and Tyco Properties. The high pressure zone is hydraulically disconnected from the other zones with inter-tie capabilities.
- The upper zone is located in western Menlo Park; it is geographically and hydraulically disconnected from other zones. It serves primarily the Sharon Heights residential neighborhood, Sharon Heights Golf and Country Club, and the Stanford Linear Accelerator Lab.

Building 21 would be connected to the existing Building 20 through an enclosed bridge. Existing Building 20 is located in the lower zone. Thus, because the two buildings would be connected, the Project would be located in both the lower zone and the higher pressure zone.

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[22] *Sustainable capacity* is the highest flow rate at which a treatment plant can be expected to operate, given normal source water conditions, while meeting regulatory water quality and routine maintenance requirements.

[23] San Francisco Public Utilities Commission. 2013. *Sunol Valley Water Treatment Plan (SVWTP) Expansion and Treated Water Reservoir.* Available: <http://216.119.104.145/bids/projectDetail.aspx?prj_id=244>. Accessed: November 4, 2015.

[24] San Francisco Public Utilities Commission. 2009. *Final Environmental Impact Report for the Sunol Valley Water Treatment Plant Expansion and Treated Water Reservoir* (SCH No. 2007082014). EIR Certification Date: December 3, 2009.

[25] San Francisco Public Utilities Commission. 2015. *Harry Tracy Water Treatment Plant Long-Term Improvements (WSIP).* Available: <http://sfwater.org/bids/projectDetail.aspx?prj_id=145>. Accessed: January 30, 2016.

[26] San Francisco Public Utilities Commission. 2011. *Tesla Treatment Facility Fact Sheet.* July. Available: <http://www.sfwater.org/bids/projectDetail.aspx?prj_id=215>. Accessed: January 30, 2016.

Existing Water Demand on Project Site

The average annual water use at the Project site between 2010 and 2015 was approximately 77 mg. The adjusted baseline water use at the Project site was calculated by subtracting the estimated water use associated with Building 23 from the total historical water use at the Project site for the purposes of the WSA.[27] After accounting for the water use associated with Building 23, the total existing annual water use at the Project site is 58 mg.

Wastewater Collection and Treatment

WBSD collects wastewater from customers within the city (including the Project site), Atherton, and Portola Valley, and areas of East Palo Alto, Woodside, and unincorporated San Mateo and Santa Clara Counties. WBSD transports wastewater via main line trunk sewers to the Menlo Park Pumping Station (MPPS), located at Bayfront Expressway and Marsh Road, north of the Project site. From there, wastewater is transported to the Silicon Valley Clean Water (SVCW) (formerly known as the South Bayside System Authority) Regional Treatment Plant, located at the eastern end of the Redwood Shores peninsula in Redwood City, approximately 6 miles northwest of the city. WBSD operates a sanitary sewer conveyance system.

The sanitary sewage collection system at the site consists primarily of four lift stations and an associated sump, along with associated gravity and force mains. The wastewater collected at the Project site would drain to an existing 30-inch WBSD sanitary sewer line that runs through the western portion of the Project site. The wastewater would be pumped to the MPPS and ultimately to the SVCW Regional Treatment Plant. The SVCW Regional Treatment Plant is permitted by the RWQCB to discharge treated wastewater into San Francisco Bay (Bay). The SVCW Regional Treatment Plant is jointly owned and operated by WBSD and the Cities of Redwood City, Belmont, and San Carlos as a joint powers authority (JPA). Under SVCW's NPDES permit, the regional treatment plant has a permitted dry-weather capacity of 27 mgd and peak wet-weather-capacity of 71 mgd. In 2008, SVCW began implementation of its Conveyance System Master Plan, which is a 10-year capital improvement program (CIP) and intended to address capacity needs as they arise.[28]

As stated above, current water use (baseline conditions) at the Project site is approximately 58 mg. Although a portion of the existing water demand is very likely used for landscaping and discharged into the stormwater system, it is conservatively assumed that all water currently used at the Project site enters the wastewater system.

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[27] Renovation and occupancy of Building 23 is expected to be completed in the summer of 2016. Although Building 23 is located on the Project site, its renovation and occupancy are not included as part of the Project because it has received a separate permit from the City of Menlo Park. As discussed in Chapter 3, *Environmental Impact Analysis*, the Project site was historically used for industrial activities (e.g., manufacturing, distribution, and warehousing, with ancillary office uses). Therefore, existing water usage at the site is more closely related to the existing land uses rather than the site population, with primary water usage based on landscaping, bathroom, and kitchen use. All buildings at the TE Campus are associated with a single water meter. To allocate all of the existing site water to Building 23 would significantly overstate the projected water usage at that location because of the history of water-intensive uses at the TE Campus.

[28] Child, Dan. Silicon Valley Clean Water. November 18, 2014—email communication.

SVCW puts its entire wastewater stream through primary, secondary, and post-secondary treatment to comply with RWQCB requirements for discharges to the Bay. SVCW treats some of its effluent to meet recycled water standards for unrestricted beneficial reuse per CCR Title 22. Certain sections of SVCW's service area, excluding MPMWD's service area, accept highly treated wastewater for reuse.[29] Table 3.14-6 provides information regarding existing and planned wastewater flows.

During wet-weather events, when wastewater flows exceed SVCW's capacity, flows are temporarily diverted to a 10 mg equalization basin near the connection of the WBSD sewer collection system to SVCW's system at the end of Marsh Road, near Bayfront Park.[30] This temporary holding pond is owned and maintained by WBSD and can receive excess flows from WBSD or other member agencies of the JPA. As of 2013, WBSD's entitled allocation of the SVCW plant's dry-weather flow capacity is approximately 7.975 mgd. WBSD's current average dry-weather flow is 3.60 mgd, and the daily peak wet-weather flow is 14.4 mgd.[31] As such, there is available capacity in WBSD's entitled allocation of wastewater to the SVCW to accommodate growth within WBSD's service area.

Table 3.14-6. SVCW Past, Existing, and Projected Wastewater Collection (mgd)[a]

Type of Wastewater	2010	2015	2020	2025	2030
SVCW Wastewater Collected and Treated in Service Area	15.09	15.79	16.50	17.20	17.91

Source: Menlo Park Municipal Water District. 2011. *Final 2010 Urban Water Management Plan and Update to the Water Shortage Contingency Plan.* June. Amended November 2014.

Note:

a. Values were originally in acre-feet (AFY) and converted using a factor of 1 AFY = 0.00089274 million gallon per day (mgd).

Solid Waste Collection and Disposal

The Shoreway Environmental Center, located at 333 Shoreway Road in San Carlos, serves as a regional solid waste, recycling, and organics facility for the receipt, handling, and transfer of solid waste, recyclables, and organics collected from the South Bayside Waste Management Authority (RethinkWaste) service area. RethinkWaste, a JPA with 12 member agencies, owns the facility. The members of RethinkWaste include the Cities of Belmont, Burlingame, East Palo Alto, Foster City, Menlo Park, Redwood City, San Carlos, and San Mateo; the Towns of Atherton and Hillsborough; the County of San Mateo; and WBSD. Residential and commercial solid waste as well as recyclable and organic materials are collected by the franchise hauler, Recology San Mateo County, and taken to the Shoreway Environmental Center for processing and shipment. The facility is operated by South Bay Recycling, a subsidiary of Recology, under a 10-year contract with RethinkWaste, as of January 1, 2011.[32]

[29] Menlo Park Municipal Water District. 2011. *Final 2010 Urban Water Management Plan and Update to the Water Shortage Contingency Plan*. June.

[30] Kitajima, Bill. West Bay Sanitary District. May 6, 2013—email communication.

[31] Kitajima, Bill. West Bay Sanitary District. May 6, 2013—email communication.

[32] RethinkWaste, South Bayside Waste Management Authority. 2013. *About Shoreway.* Available: <http://www.rethinkwaste.org/shoreway-facility/about-shoreway>. Accessed: January 29, 2016.

The Shoreway Environmental Center opened in September 2011 with a three-phase improvement project that included traffic improvements, a new state-of-the-art materials recovery facility, an expanded transfer station, a new Environmental Education Center, and a "green building" for administrative offices. Site operations are regulated by a number of local and state agencies, with regular facility inspections. The facility is separately permitted by the California Department of Resources Recycling and Recovery (CalRecycle) to receive 3,000 tons of solid waste and recyclables per day.[33] As of January 1, 2011, Recology provides recycling, composting (also known as organics), and garbage collection services for 93,000 RethinkWaste residences and 10,000 businesses.[34]

Ox Mountain Landfill in Half Moon Bay would serve the Project site. Ox Mountain Landfill, which is anticipated to close in 2034, is permitted to accept 3,598 tons per day and has a remaining capacity of approximately 27 million cubic yards.[35,36]

In 2014 (the most recent data available), the city shipped approximately 29,134 tons of waste to landfills and disposal facilities.[37] Effective July 1, 2012, AB 341 requires that all businesses that generate 4 or more cubic yards of garbage per week to recycle. Data provided by the Project Sponsor show that Facebook employees generate approximately 4.28 pounds of waste per person per day, with an average waste diversion rate of approximately 93 percent.

This Draft EIR assumes that no employees currently work at the Project site; therefore, no solid waste is currently generated at the Project site.

Storm Drainage System

The City's Public Works Department constructs, operates, and maintains the storm drainage system for the city, including the Project site. As discussed in Section 3.10, *Hydrology and Water Quality*, the Project site was divided into 18 sub-watersheds, which contribute to the existing drainage system (see Figure 3.10-1). Sub-watershed areas vary in size from less than 1 acre to 10 acres. These sub-watersheds are located in urbanized districts with approximately 85 percent impervious cover. Generally, the slopes of watersheds are mild (0.4 percent), with the maximum elevation of the proposed surface grading being 12.75 feet near the ridge, as shown in Figure 3.10-1.

The existing drainage system for the Project site receives overland flows from the site. It includes pipes, drainage inlets, and other storm drain facilities, as shown in Figure 3.10-2. Stormwater collected in the eastern portion of the Project site would drain to existing private storm drains on the adjacent Building 20 site. Stormwater collected in the center of the Project site would drain from a proposed 24-inch private storm drain to an existing 27-inch City-owned storm drain that runs along Bayfront Expressway/State Route (SR) 84. The 27-inch City storm drain flows to a 33-inch WBSD storm drain,

[33] California Department of Resources Recycling and Recovery. 2016. *Facility/Site Summary Details: Shoreway Environmental Center* (41-AA-0016). Available: <http://www.calrecycle.ca.gov/SWFacilities/Directory/41-AA-0016/Detail/>. Accessed: January 31, 2016.

[34] RethinkWaste, South Bayside Waste Management Authority. 2013. *About Us, History.* Available: <http://www.rethinkwaste.org/about/about-us>. Accessed: January 29, 2016.

[35] Devincenzi, Monica. Municipal Relationship Manager, Republic Services. March 30, 2016—email communication.

[36] California Department of Resources Recycling and Recovery. 2016. *Facility/Site Summary Details: Corinda Los Trancos Landfill (Ox Mtn)* (41-AA-0002). Available: <http://www.calrecycle.ca.gov/SWFacilities/Directory/41-AA-0002/Detail/>. Accessed: March 28, 2016.

[37] California Department of Resources Recycling and Recovery. 2014. *Jurisdictional Diversion/Disposal Rate Detail.* Jurisdiction: Menlo Park; Reporting Year: 2014. Available: <http://www.calrecycle.ca.gov/LGCentral/reports/diversionprogram/JurisdictionDiversionDetail.aspx?JurisdictionID=299&Year=2014>. Accessed: January 29, 2016.

which collects stormwater from an existing 25- by 16-inch City storm drain in the western portion of the Project site. The onsite storm drain is connected to the public storm drain in Chilco Street; its flows are pumped to the Chrysler Drive Pump Station.

Natural Gas and Electricity

With a relatively mild Mediterranean climate and strict energy-efficiency and conservation requirements, California has lower energy consumption rates than other parts of the country. According to the Department of Energy (DOE), California's per capita energy consumption ranked 48th in the nation as of 2013.[38] California has among the lowest annual electrical consumption rates per person of any state, and its residential uses consume 31 percent less energy compared with the national average.[39]

The city is located in a coastal climate zone (Climate Zone 3 in the Title 24 Climate Zone designation mapping), and with the moderating influence of the Bay, it requires less energy for heating and cooling than other parts of the State. Pacific Gas and Electric (PG&E) delivered 4,443 million kilowatt hours (kWh) to customers in San Mateo County in 2014. Approximately 66 percent of this power, or approximately 2,948 million kWh, was sold to non-residential accounts.[40] Average annual electrical consumption at the Project site between 2013 and 2014 was approximately 35.4 million kWh.[41] The adjusted baseline electricity use at the Project site was calculated by subtracting the estimated electricity use associated with Building 23 from the total historical electricity use at the Project site.[42] After accounting for the electricity use associated with Building 23, total existing annual electricity used at the Project site was 32.5 million kWh, based on the average of data from 2013 to 2014.[43]

In 2014, PG&E delivered 193 million therms of natural gas to San Mateo County, with about 45 percent, or approximately 87 million therms of natural gas, sold to non-residential customers.[44] The existing development at the Project site is served by natural gas pipelines. Total average annual natural gas used at the Project site between 2013 and 2014 was approximately 830,750 therms. The adjusted baseline natural gas use at the Project site was calculated by subtracting the estimated natural gas use associated

[38] U.S. Department of Energy, U.S. Energy Information Administration. 2012. *State Profile and Energy Estimates – California.* Available: <http://www.eia.gov/state/?sid=CA>. Accessed: January 27, 2016.

[39] U.S. Energy Information Administration. 2015. *Household Energy Use in California*. Available: <http://www.eia.gov/consumption/residential/reports/2009/state_briefs/pdf/CA.pdf>. Accessed: January 30, 2016.

[40] California Energy Commission. 2014. *Electricity Consumption by County*. Available: <http://www.ecdms.energy.ca.gov/elecbycounty.aspx>. Accessed: January 27, 2016.

[41] PAE Engineers. 2015. *Facebook TE Campus: Energy & Water Analysis.* September 24, 2015.

[42] Renovation and occupancy of Building 23 is expected to be completed in the summer of 2016. Although Building 23 is located on the Project site, its renovation and occupancy are not included as part of the Project because it has received a separate permit from the City of Menlo Park. As discussed in Chapter 3, *Environmental Impact Analysis*, the Project site was historically used for industrial activities (e.g., manufacturing, distribution, and warehousing, with ancillary office uses). Therefore, existing electricity usage at the site is more closely related to the existing land uses rather than the site population, with primary electricity usage based on lighting, ventilation, and appliance use. To allocate all of the existing site electricity usage to Building 23 would significantly overstate the projected electricity at that location because of the history of electricity-intensive uses at the TE Campus.

[43] PAE Engineers. 2015. *Facebook TE Campus: Energy and Water Analysis.* September 24, 2015.

[44] California Energy Commission. 2014. *Electricity Consumption by County*. Available: <http://www.ecdms.energy.ca.gov/gasbycounty.aspx>. Accessed: February 3, 2016.

with Building 23 from the total historical natural gas use at the Project site.[45] After accounting for the natural gas use associated with Building 23, the total existing annual natural gas use at the Project site was 800,549 therms, based on the average of data from 2013 to 2014.[46]

PG&E provides natural gas and electric service within 70,000 square miles of northern and central California, including the city and Project site. PG&E's service area extends from Eureka to Bakersfield (north to south) and from the Sierra Nevada to the Pacific Ocean (east to west). PG&E purchases both gas and electrical power from a variety of sources, including other utility companies. PG&E obtains its energy supplies from power plants and natural gas fields in northern California. It also purchases energy from outside the service area and delivers it through high-voltage transmission lines. PG&E operates a grid distribution system that channels all power produced at the various generation sources into one large energy pool for distribution throughout the service territory.

In early 2016, all the cities in San Mateo County agreed to form a JPA, Peninsula Clean Energy (PCE). PCE would purchase clean electricity in bulk.[47] The purpose of Peninsula Clean Energy is to reduce the amount of GHG emissions released to the atmosphere and, thus, reduce the county's carbon footprint by giving customers the option to purchase clean energy.

Environmental Impacts

This section describes the impact analysis for the Project related to utilities and service systems. It discusses the methods that were used to determine the impacts of the Project and lists the thresholds used to conclude whether an impact would be significant. Impacts are determined to be no impact (NI), less than significant (LTS), less than significant with mitigation (LTS/M), or significant and unavoidable (SU). Measures to mitigate (i.e., avoid, minimize, rectify, reduce, eliminate, or compensate for) significant impacts accompany each impact discussion.

Thresholds of Significance

In accordance with Appendix G of the State CEQA Guidelines, the Project would be considered to have a significant effect if it would result in any of the conditions listed below.

- Exceed wastewater treatment requirements of the applicable RWQCB.
- Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects.
- Require or result in the construction of new stormwater drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects.

[45] As stated above, renovation and occupancy of Building 23 are not included as part of the Project. Therefore, existing natural gas usage at the site is more closely related to the existing land uses rather than the site population, with primary natural gas usage based on landscaping, bathroom, and kitchen use. All buildings at the TE Campus are associated with a single natural gas meter. To allocate all of the existing site natural gas usage to Building 23 would significantly overstate the projected natural usage at that location because of the history of natural gas–intensive uses at the TE Campus.

[46] PAE Engineers. 2015. *Facebook TE Campus: Energy and Water Analysis.* September 24, 2015.

[47] Silverfarb, Bill. 2016. *The Daily Journal*. Cities Moving to Clean Energy: Twenty Municipalities Sign On to New County Program, PG&E Launches Solar Program. February 15.

- Have insufficient water supplies available to serve the Project from existing entitlements and resources or require new or expanded entitlements.
- Result in a determination by the wastewater treatment provider that serves or may serve the Project that it does not have adequate capacity to serve the Project's projected demand in addition to the provider's existing commitments.
- Be served by a landfill with insufficient permitted capacity to accommodate the Project's solid waste disposal needs.
- Violate federal, State, and local statutes and regulations related to solid waste.

By way of background, Appendix F of the State CEQA Guidelines and PRC Section 21100(b)(3) state that a project would have a significant effect if it would result in "wasteful, inefficient, or unnecessary energy use." Neither of those provisions offers a precise threshold of significance for determining whether a project would result in wasteful, inefficient, or unnecessary energy use. This lack of a threshold of significance has made it difficult for lead agencies to conduct the analysis contemplated in Appendix F and Section 21100(b)(3). A recent court decision, *California Clean Energy Committee v. City of Woodland* (2014), 225 Cal. App. 4th 173, held that an EIR had not discussed energy use in sufficient detail. However, that case also did not establish a threshold for determining what constitutes wasteful, inefficient or unnecessary energy. Considering the implications of the *City of Woodland* decision, this EIR applies a "common sense" threshold, whereby a project's energy usage would be considered wasteful, inefficient, and unnecessary if the project were to violate CCR Title 24,[48] be inconsistent with the energy-related measures in the City's CAP, or otherwise consume a substantially greater amount of energy, in either the construction or operational phase, than similar projects of a similar size that did not incorporate the Project's design features and mitigation. This analysis will employ such metrics to judge significance.

Methods for Analysis

Refer to Section 3.0, *Environmental Impact Analysis*, for further details regarding baseline conditions.

Water Supply. The analysis in this section focuses on the nature and magnitude of the change in water use compared with existing and projected water use in the MPMWD service area. To determine potential impacts, future water consumption was estimated from demand projection calculations and quantitative evaluation of data for existing land uses, approved projects, and proposed development, including that proposed for the Project site. The primary resources used for this analysis include the WSA for the Project (January 2016), MPMWD's 2010 UWMP (adopted June 2011), MPMWD's draft 2015 UWMP, the SFPUC 2010 UWMP (adopted June 2011), and the SFPUC WSIP (established in 2002). The Project's indoor water-use factors were developed from data and methodology included in the Pacific Institute's *Waste Not, Want Not: The Potential for Urban Water Conservation in California* (2003). To account for implementation of more stringent water efficiency standards that went into effect subsequent to the Pacific Institute study and the anticipated water-efficient design of the Project, the best potential conservation-saving factors were applied to the employee water-use factors.[49] The Project's outdoor water-use factors were estimated using the landscape irrigation demand model described in the State's

[48] No other federal or State regulatory energy-efficiency standards apply to the Project.

[49] The Pacific Institute study presented factors for high, low, and best potential water conservation scenarios for each type of land use. The best potential conservation saving factors represent the most accurate estimate, based on the source of the data, age of the data, and/or sample size, according to the Pacific Institute study.

Model Water-Efficient Landscape Ordinance, which the City adopted and implemented as part of its Landscaping Ordinance on February 25, 2016. Compliance with the City's Water-Efficient Landscape Ordinance is analyzed.

Wastewater. The Project Sponsor desires to utilize an onsite recycled water system that is proposed as part of the Project; however, the Draft EIR conservatively assumes that 100 percent of water consumed indoors at the Project site will become wastewater and, therefore, will be conveyed to the SVCW Regional Treatment Plant. The wastewater demands of the Project were compared to the available capacity of the WBSD sanitary sewer system and the SVCW Regional Treatment Plant to assess the potential for significant environmental impacts.

Solid Waste. Solid waste generation information for the Project is based on standard solid waste generation rates from CalRecycle. The Project's solid waste generation is compared to available capacity at solid waste facilities that serve the Project area (i.e., Shoreway Environmental Center and Ox Mountain Landfill).

Stormwater. The analysis of potential impacts on the City's storm drainage system is based on the Project hydrologic and hydraulic study report prepared by WRECO in August 2015.[50] Refer to Section 3.10, *Hydrology and Water Quality*, for further information regarding the Project's impact on stormwater runoff.

Energy Services. The assessment of energy services is based on information provided by the Project Sponsor for existing usage and CalEEMod modeling for estimated Project usage. For a conservative analysis, energy demand includes the operation of a recycled water facility at the Project site.

Impacts and Mitigation Measures

Impact UT-1: Water Supply. The Project would have sufficient water supplies available to serve the Project from existing entitlements and resources, and no new or expanded entitlements would be needed. In addition, the Project's contribution to cumulative impacts would be less than considerable. (LTS)

The Project includes the construction of two new office buildings (Buildings 21 and 22) and a hotel. Building 21 would accommodate approximately 3,400 employees, and Building 22 would accommodate approximately 3,000 employees. Therefore, in total, the proposed office buildings would accommodate approximately 6,400 workers. The hotel would employ approximately 150 workers. Therefore, a total of 6,550 employees would be generated by the Project.

Table 3.14-7 provides the existing and proposed annual water demand for the Project. The Project's total annual demand for indoor and outdoor water use combined is conservatively estimated to be 88 mg, including 81 mg for indoor use and 7 mg for outdoor use. The total existing annual water use at the Project site is 58 mg, excluding the water use associated with Building 23 (which is not part of the Project). Therefore, the total new (net) annual demand on MPMWD's supply due to the Project would be 30 mg.

[50] WRECO. 2016. *Hydrologic and Hydraulic Study Report for Facebook Menlo Park West Campus, Menlo Park, California.* March 2016.

Table 3.14-7. Existing and Proposed Water Demand

	Annual Demand (mg)
Proposed Total Indoor Water Use	81
Proposed Landscape Water Use	7
Total Proposed Water Use	*88*
Existing Water Use (excluding Building 23)	(58)
Total Net New Demand	***30***

Source: Erler & Kalinowski, Inc. 2016. *Water Supply Assessment Study, Facebook Campus Expansion, Menlo Park, California.* February 3, 2016.

The estimate of the Project's indoor water demand includes the following water conservation measures, which would be implemented by the Project: [51]

- Installation of ultra low–flush toilets and urinals, plus low-flow faucet aerators and showerheads;
- Improvements to mechanical cooling systems (e.g., installing conductivity controllers, adding chemical treatments to improve the concentration ratio, improving the energy efficiency of other mechanical components); and
- Other technologies, as appropriate for kitchens, laundries, and industrial processes, such as water-efficient dishwashers and washing machines and industrial water reuse.

The indoor water demand presents a conservative estimate because water efficiency for new commercial construction has improved since the data used in the Pacific Institute study were collected prior to 2001. The outdoor water demand also presents a conservative estimate because outdoor water use is assumed to be equal to the maximum applied water allowance, which is the upper limit of annual applied water for the established landscaped area.

The Project's overall water demand presents a conservative analysis because the Project Sponsor is proposing an onsite wastewater system as part of the Project that, if approved, could process up to approximately 23 mg of water annually (not including weekends). The recycled water system is not considered in the estimate of the Project's water demand in the WSA. If approved by the State Water Board, the San Mateo County Environmental Health Division, and the City Building Official, as well as implemented by the Project Sponsor, the reused water would be treated to the highest standard of Title 22 for tertiary disinfected recycled water. All plumbing fixtures (e.g., toilets, urinals, lavatories, kitchen sinks, drinking fountains) from Buildings 21 and 22 would feed into the proposed wastewater system. This system would process the water, which would then be used for onsite toilets, urinals, and potentially irrigation (including irrigation for the Chilco Street improvements, which are analyzed throughout this document as cumulative development [see Chapter 3, *Environmental Impact Analysis*]). Raw wastewater from each building would be captured by gravity conveyance pipes, then conveyed through a grinder pump (Muffin Monster) to a lift station outside of the building footprint. Raw

[51] These measures, which were accounted for in the Pacific Institute study, would be implemented by the Project. The Project would be required to comply with the requirements of the Green Buildings Standards Code, which includes higher efficiency standards for plumbing fixtures (i.e., toilets and urinals) and fittings (i.e., faucets and showerheads) compared to the measures discussed in the Pacific Institute study. Therefore, the analysis conservatively estimates water usage for the Project.

wastewater from kitchen facilities would be routed through a grease trap before entering the lift station to remove excess fats, oils, and grease. Wastewater from Buildings 21 and 22 would be screened, pretreated, and equalized in large primary tanks and pumped to the drain and fill-constructed wetlands for treatment prior to polishing, disinfection, and reuse. It is anticipated that approximately 34 percent of the daily flow of reused water would be for toilets and urinals, and 66 percent of the daily flow would be for irrigation.

The WSA concluded that, during normal years, MPMWD has sufficient water supplies to meet its planned demands, plus the demands of the Project, based on MPMWD's draft 2015 UWMP. Table 3.14-8 compares supply and demand, including the demand from the Project and other development in MPMWD's service area. As shown in the table, the total potable supply in 2020 for a single dry year would be 1,281 mg. However, the potable demand during this same period, including the Project, is expected to be 1,341 mg. Therefore, the annual water demand in 2020 for a single dry year is projected to exceed the total annual supply by approximately 60 mg, which represents a total water supply shortfall of 4.5 percent. Therefore, the Project would create an incremental shortfall of approximately 2 percent in 2020 for a single dry year compared with the without-Project conditions.

As shown in Table 3.14-8, the total potable supply in 2020 during multiple dry years would be 1,108 mg. However, the potable demand during this same period, with the Project, is expected to be 1,341 mg. Therefore, the annual water demand in 2020 for multiple dry years is projected to exceed the total annual supply by approximately 233 mg, which represents a total water supply shortfall of 17 percent. Therefore, the Project would create an incremental shortfall of approximately 2 percent in 2020 for multiple dry years compared with the without-Project conditions.

The total potable supply in 2040 for a single dry year would be 1,281 mg. However, as shown in Table 3.14-8, the potable demand during this same period, with the Project, is expected to be 1,614 mg. Therefore, the annual water demand in 2040 for a single dry year is projected to exceed the total annual supply by approximately 333 mg, which represents a total water supply shortfall of 21 percent. Therefore, the Project would create an incremental shortfall of approximately 2 percent in 2040 for a single dry year compared with the without-Project conditions.

Table 3.14-8. Incremental Impact of the Project on MPMWD Water Supply and Demand in Normal and Dry Years

Year				Without Project		With Project		
			[A]	[B]	[C]	[D]	[E]	[F]
					C = (A - B)/B		E = (A - D)/D	F = E - C
			Total Annual Potable Supply[a] (mg)	Annual Potable Demand[b] (mg)	Annual Supply Shortfall (% of Demand)	Annual Potable Demand[b] (mg)	Annual Supply Shortfall (% of Demand)	Annual Incremental Shortage[c]
2020	Normal		1,630	1,311	No Shortfall	1,341	No Shortfall	0%
	Single Dry Year		1,281	1,311	2.3%	1,341	4.5%	2%
	Multiple Dry Years	Year 1	1,281	1,311	2.3%	1,341	4.5%	2%
		Year 2	1,108	1,311	15%	1,341	17%	2%
		Year 3	1,108	1,311	15%	1,341	17%	2%
2025	Normal		1,630	1,373	No Shortfall	1,403	No Shortfall	0%
	Single Dry Year		1,281	1,373	6.7%	1,403	8.7%	2%
	Multiple Dry Years	Year 1	1,281	1,373	6.7%	1,403	8.7%	2%
		Year 2	1,108	1,373	19%	1,403	21%	2%
		Year 3	1,108	1,373	19%	1,403	21%	2%
2030	Normal		1,630	1,438	No Shortfall	1,468	No Shortfall	0%
	Single Dry Year		1,281	1,438	11%	1,468	13%	2%
	Multiple Dry Years	Year 1	1,281	1,438	11%	1,468	13%	2%
		Year 2	1,108	1,438	23%	1,468	24%	2%
		Year 3	1,108	1,438	23%	1,468	24%	2%
2035	Normal		1,630	1,509	No Shortfall	1,539	No Shortfall	0%
	Single Dry Year		1,281	1,509	15%	1,539	17%	2%
	Multiple Dry Years	Year 1	1,281	1,509	15%	1,539	17%	2%
		Year 2	1,108	1,509	27%	1,539	28%	1%
		Year 3	1,108	1,509	27%	1,539	28%	1%

Year				Without Project		With Project		
			[A]	[B]	[C]	[D]	[E]	[F]
					C = (A - B)/B		E = (A - D)/D	F = E - C
			Total Annual Potable Supply[a] (mg)	Annual Potable Demand[b] (mg)	Annual Supply Shortfall (% of Demand)	Annual Potable Demand[b] (mg)	Annual Supply Shortfall (% of Demand)	Annual Incremental Shortage[c]
2040	Normal		1,630	1,584	No Shortfall	1,614	No Shortfall	0%
2040	Single Dry Year		1,281	1,584	19%	1,614	21%	2%
2040	Multiple Dry Years	Year 1	1,281	1,584	19%	1,614	21%	2%
2040	Multiple Dry Years	Year 2	1,108	1,584	30%	1,614	31%	1%
2040	Multiple Dry Years	Year 3	1,108	1,584	30%	1,614	31%	1%

Sources: Erler & Kalinowski, Inc. 2016. *Water Supply Assessment Study, Facebook Campus Expansion, Menlo Park, California.* February 3, 2016; City of Menlo Park. 2015. *Urban Water Management Plan.* In development.

Notes:

mg = million gallons (in this case, million gallons per year)

a. Projected available water supplies during normal, single, and multiple dry years are from the MPMWD draft 2015 UWMP and documented in Tables 10, 11, and 12 of the WSA.

b. Values for projected water demand with and without Project are calculated in Table 8 of the WSA.

c. Values are subject to rounding.

As shown in the table, the total potable supply in 2040 during multiple dry years (the worst-case drought scenario) would be 1,108 mg. However, the potable demand during this same period, with the Project, is expected to be 1,614 mg. Therefore, the annual water demand in 2040 for multiple dry years is projected to exceed the total annual supply by approximately 506 mg, which represents a total water supply shortfall of 31 percent. Therefore, the Project would create an incremental shortfall of approximately 1 percent in 2040 for multiple dry years compared with the without-Project conditions.

As stated above, in response to anticipated dry-year shortfalls, MPMWD developed a Water Shortage Contingency Plan that systematically identifies ways in which MPMWD can reduce water demands up to 50 percent (which is greater than the 19 percent shortfall during a single dry year and the 30 percent shortfall during multiple dry years without the Project, as shown in Table 3.14-8). It is anticipated that, even without the Project, the City would need to rely on implementation of its Water Shortage Contingency Plan during dry years to reduce demands. Given the small incremental impact of the Project on the shortage projections, it is not anticipated that MPMWD would have to change operations or implementation of its Water Shortage Contingency Plan in response to a drought, even after the Project is completed. In addition, to the extent that the City develops recycled water supplies or individual projects within the city implement onsite water recycling (e.g., the onsite wastewater system included as part of the Project, discussed above), the total future potable water demand within the MPWMD service area would very likely be smaller, and the resultant water supply shortage would very likely be smaller. MPMWD is developing plans for potential recycled water and other supplemental supplies in its 2017 *Water System Master Plan* to minimize future dry-year impacts.

Given the analysis above, operation of the Project would have a ***less-than-significant*** impact on existing water supplies and would not require the expansion of existing entitlements. Table 3.14-8, above, compares supply and demand, including the demand from the Project and other development in MPMWD's service area, between 2020 and 2040. Thus, this analysis includes both the Project-level analysis and the cumulative analysis. In addition, under reasonably foreseeable conditions, cumulative water demands, with the Project, would not exceed available water supplies. This cumulative impact is discussed further below.

Impact UT-2: Water Treatment Facilities. The Project would not require or result in the construction of new water treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects. (LTS)

As described in the *Environmental Setting*, above, MPMWD purchases 100 percent of its treated water supplies from SFPUC. The purchased water is treated at the Sunol Valley WTP and the Harry Tracy WTP. In 2013, SFPUC completed expansion of the Sunol Valley WTP, which has the sustainable capacity to treat up to 160 mgd. The Harry Tracy WTP treats 120 mgd, and there are plans for expansion and upgrades to sustainably treat 160 mgd. As of late 2015, the Harry Tracy WTP is forecast to be completed in early 2016. Therefore, at capacity, SFPUC would be capable of treating up to 320 mgd. In addition, completed in November 2012, SFPUC's Tesla Water Treatment Facility in Tracy, California, is the largest ultraviolet disinfection treatment plant in California, capable of treating 315 mgd. Therefore, by early 2016, SFPUC should be able to treat up to 635 mgd.

The Project would acquire its water supply from MPMWD. As described in Impact UT-1, the total new (net) annual demand on MPMWD's supply due to the Project is conservatively estimated to be 30 mg. According to the WSA, both current and projected purchase quantities (including with the Project) are within MPMWD's ISG of 4.465 mgd (or approximately 1,630 mg per year). Specifically, the Project's annual demand of 30 mg would represent approximately 2 percent of MPMWD's ISG. Operation of the

Project would not require MPMWD to purchase additional water supplies from SFPUC and, therefore, would not require SFPUC to deliver additional water supplies over its normal-year system-wide target of 265 mgd. As of 2011, the SFPUC's RWS has sufficient capacity in its water treatment facilities to meet its daily system-wide demands. Furthermore, by the time the Project is operational, the water treatment facility improvement projects described previously would all be complete, and SFPUC would be capable of treating up to 635 mgd. Therefore, implementation of the Project would not require the expansion of existing water treatment facilities or the construction of new facilities. The Project would have a ***less-than-significant*** impact with regard to existing water treatment facilities.

Impact UT-3: Wastewater Generation. The Project would not exceed wastewater treatment requirements of the San Francisco Bay RWQCB, require or result in the construction of new wastewater treatment facilities or the expansion of new facilities, or result in a determination by SVCW that it has inadequate capacity to serve the Project's expected demand and existing entitlements. (LTS)

As shown in Table 3.14-7, above, the Project's annual total demand for indoor water use is estimated to be 81 mg (or approximately 0.3 mgd), without accounting for the potential onsite wastewater system that would be implemented by the Project Sponsor (if approved by the City and other required agencies).[52] As stated above, the wastewater collected at the Project site would drain to an existing 30-inch WBSD sanitary sewer line that runs through the western portion of the Project site. It is anticipated that WBSD currently has the capacity to accommodate the increase in wastewater generation that would result from the Project.

The estimate of the Project's wastewater generation presents a conservative analysis because it assumes that 100 percent of indoor water demand at the Project site would become wastewater and would be conveyed to the SVCW Regional Treatment Plant. As discussed under Impact UT-1, above, the Project Sponsor is proposing a potential onsite wastewater system that could process up to approximately 23 mg of water annually, which would reduce the amount of wastewater conveyed to the SVCW Regional Treatment Plant. The onsite wastewater system would be implemented by the Project Sponsor, if approved by the City and other required agencies. Further analysis may be required by WBSD and SVCW to assess sewer capacity and wastewater loading for the solids concentration generated by the onsite wastewater system. However, it is unlikely that further analysis would determine that new or expanded wastewater treatment facilities would be needed. It is anticipated that the potential onsite wastewater system, if the system is approved by the City and other required agencies, would reduce the total nitrogen load and the hydraulic load to WBSD's sanitary sewer conveyance system and, eventually, the SVCW Regional Treatment Plant. Without the treatment provided by the potential onsite wastewater system, approximately 95 pounds per day of nitrogen would be discharged to WBSD's sanitary sewer conveyance system and the SVCW Regional Treatment Plant. With treatment and reuse of the wastewater, approximately 5 pounds per day of nitrogen would be discharged. All plumbing fixtures (e.g., toilets, urinals, lavatories, kitchen sinks, drinking fountains) at Buildings 21 and 22 would feed into the proposed wastewater system, which would process the water that would then be used for onsite toilets, urinals, and irrigation (including irrigation for the Chilco Street improvements, which are analyzed throughout this document as cumulative development). It is anticipated that approximately 34 percent of the daily flow of reused water would be used for toilets and urinals, and 66 percent of the daily flow would be used for irrigation.

[52] Assumes 260 working days per year (81 mg/260 days = 0.3 mgd).

As described above, WBSD's average daily flow during dry weather is approximately 3.60 mgd, compared with WBSD's dry-weather allocation of approximately 7.975 mgd. The wastewater discharge from the Project site would constitute less than approximately 7 percent of WBSD's remaining available capacity entitlements from SVCW.[53] Therefore, WBSD's available capacity entitlements from SVCW would be enough to accommodate the projected wastewater flow that would result from implementation of the Project. Because the SVCW Regional Treatment Plant would have adequate capacity to process the wastewater generated from the Project, implementation of the Project would not exceed the wastewater treatment requirements of the RWQCB, and the impact would be ***less than significant***.

Impact UT-4: Solid Waste Generation. The Project would comply with federal, State, and local statutes and regulations related to solid waste and would be served by a landfill with sufficient permitted capacity to accommodate the Project's solid waste disposal needs. (LTS)

Construction

Construction of the Project would result in a total of approximately 25,550 cubic yards (cy) (or approximately 16,050 tons) of recycled material.[54] For both Phase 1 and Phase 2 of Project construction, crushed concrete would be used onsite as road base or engineered fill. If hauled offsite, it would be used at a nearby construction project. Of the 16,050 tons of recycled material that would be generated during construction of the Project, approximately 12,545 tons would be used onsite or at a nearby construction project and, thus, would not need to be processed at Shoreway Environmental Center. The remainder of the recycled material that would be generated during construction of the Project (approximately 3,505 tons) would be processed at Shoreway Environmental Center. This analysis assumes that the material would be recycled at Shoreway Environmental Center over a period of 45 days.[55] Therefore, the construction waste generated by the Project that would need to be recycled would constitute approximately 3 percent of Shoreway Environmental Center's daily permitted capacity of 3,000 tons per day.

Construction of the Project would result in a total of approximately 1,020 cy (or 459 tons)[56] of material that would be disposed of at Ox Mountain Landfill. Similar to the analysis above for construction material, this analysis assumes that the material would be disposed at Ox Mountain Landfill over a period of 45 days. Therefore, the construction waste generated by the Project that would need to be disposed of would constitute 0.3 percent of Ox Mountain Landfill's permitted capacity of 3,598 tons per day.

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[53] The 7.975 mgd dry-weather allocation – 3.60 mgd average daily flow = 4.375 mgd of remaining capacity. (0.3 mgd generated by Project/4.375 mgd) × 100 = 6.9 percent

[54] Assumes a conversion rate of 0.20 ton = 1 cy for alternate daily cover (which is any material that does not fit into any other category and is recyclable) and metal, 0.45 ton = 1 cy for construction and demolition material, and 0.99 ton = 1 cy for concrete.

[55] It is assumed that most construction activity that would produce material that would be recycled would be generated during the demolition portion of Phase 2, because neither Phase 1 nor the hotel that would be constructed as part of Phase 2 would require demolition of any buildings. Phase 1 and the hotel would require demolition and removal of paved parking lots. However, as noted above, crushed concrete would be used onsite or at a nearby construction project and would not need to be recycled. Demolition during Phase 2 would occur over 91 days. Therefore, this analysis assumes that demolition material would be recycled over approximately half of the demolition period, or approximately 45 days.

[56] Assumes a conversion rate of 0.45 ton = 1 cy, which is the conversion rate for construction and demolition material.

Operation

For operational purposes, this section of the Draft EIR assumes that no employees currently work at the Project site; therefore, it is assumed that no solid waste is currently generated at the Project site. A total of 6,550 employees would be generated by the Project, thereby increasing the generation of solid waste. According to the city's current disposal rates, as reported to CalRecycle, employees in the city in 2015 generated approximately 4.8 pounds per employee per day.[57] Using this rate, operation of the Project would generate approximately 31,440 pounds of solid waste per day, 16 tons per day, or approximately 4,087 tons per year.[58] However, for informational purposes only, data provided by the Project Sponsor show that Facebook employees produce approximately 4.28 pounds of waste per person per day (lower than the city's current disposal rate), with an average waste diversion rate of approximately 93 percent. As described in the *Environmental Setting*, above, waste generated at the Project site would be collected by Recology San Mateo and hauled to Shoreway Environmental Center. Shoreway Environmental Center is permitted to receive 3,000 tons of refuse per day. Once collected and sorted at Shoreway Environmental Center, solid waste would be transported to the Ox Mountain Landfill. The 16 tons per day solid waste generated during operation of the Project would constitute 0.4 percent of Ox Mountain Landfill's permitted capacity of 3,598 tons per day.

Given the analysis above, Shoreway Environmental Center and Ox Mountain Landfill have sufficient permitted capacity to serve the Project, resulting in a ***less-than-significant*** impact.

Impact UT-5: Stormwater Generation. The Project would not require or result in the construction of new stormwater drainage facilities or expansion of existing facilities. (LTS)

The existing drainage system for the Project area receives overland flows from the site. It includes pipes, drainage inlets, and other storm drain facilities, as shown in Figure 3.10-1. Stormwater from the Project site would be pumped to the Chrysler Drive Pump Station. As shown in Table 3.10-4 in Section 3.10, *Hydrology and Water Quality*, approximately 86 percent of the site is currently impervious. As a result of the Project, approximately 41.4 acres of the 58.3-acre Project site would be impervious area. The Project would include stormwater treatment areas, such as bio-retention areas, and buildings on the Project site would contain low-impact development measures[59] to allow for infiltration and minimize stormwater contamination. In addition, both proposed Buildings 21 and 22 would include green roofs and terraces. These features would result in a net decrease in the amount of runoff and associated pollution leaving the Project site. Specifically, as shown in Table 3.10-6 in Section 3.10, *Hydrology and Water Quality*, there would be a 15 percent reduction in impervious surfaces compared with existing conditions, and the Project would reduce total runoff rates. In addition, the Project Sponsor would upsize existing onsite pipes and ensure that the onsite system would be adequate with respect to conveying stormwater in the event of a 100-year storm.[60] The location of new stormwater pipes is shown in Figure 3.10-2 in Section 3.10, *Hydrology and Water Quality*. The proposed stormwater facilities are part of the Project and analyzed throughout this EIR. The addition of the stormwater facilities would not require new or expanded stormwater drainage facilities. Because of the decrease in stormwater runoff, the Project site

[57] California Department of Resources Recycling and Recovery. 2015. *Jurisdiction Diversion/Disposal Rate Detail*. Menlo Park. Available: <http://www.calrecycle.ca.gov/LGCentral/reports/diversionprogram/JurisdictionDiversionPost2006.aspx>. Accessed: January 31, 2016.

[58] Assumes 260 working days per year.

[59] WRECO. 2016. *Hydrologic and Hydraulic Study Report for Facebook Menlo Park West Campus, Menlo Park, California.* March 2016.

[60] WRECO. 2016. *Hydrologic and Hydraulic Study Report for Facebook Menlo Park West Campus, Menlo Park, California.* March 2016.

would not exceed the capacity of existing or planned stormwater drainage systems, and the impact would be ***less than significant***. Refer to Section 3.10, *Hydrology and Water Quality*, for more information regarding stormwater runoff.

Impact UT-6: Energy Demand. The Project would not result in wasteful, inefficient, or unnecessary energy use and the Project would not exceed existing gas and electric supplies. (LTS)

It is anticipated that PG&E would provide gas and electrical power for the proposed facilities, although the Project Sponsor also has the right to purchase power from other providers (e.g., Peninsula Clean Energy, once it becomes available). Gas and electric service would be provided to meet the needs of the Project site, as required by California Public Utilities Commission (CPUC), which obligates PG&E to provide service to its existing and potential customers. The Project Sponsor intends to design Building 21 and 22 to LEED Gold 2009 standards. The Project would include strategies that would optimize energy performance and environmental and health benefits for the buildings and their inhabitants. The sustainability measures include, but are not limited to, water-efficient plumbing fixtures to reduce water consumption by 40 percent compared with the LEED baseline, a building form and space layout that promotes daylight use, and onsite renewable energy generation (e.g., photovoltaic panels). Nonetheless, the Project would use energy for both construction and operation. Energy sources include fuels for trucks and construction equipment, and electricity and natural gas for operation of the Project.

Estimated fuel and other energy usage for the Project have been quantified on an annual basis using the Climate Registry's default emission factors for general reporting protocols. The Project would consume approximately 16.6 million annual kWh, approximately 361,010 annual therms, and more than 321,000 million British thermal units (BTUs) of fuel annually during normal operations. The Project would also consume more than 759,000 gallons of fuel over the entire construction period and more than 300,000 kWh of electricity annually during construction. This information is presented in Appendix 3.4 of this document.

As discussed above, the Project would consume approximately 16.8 million kWh of electricity per year, which would represent a decrease in electricity demand of 15.7 million kWh per year compared with existing electricity demand on the Project site (i.e., 32.5 million kWh per year). In addition, the Project would consume approximately 361,010 therms of natural gas per year, which would represent a decrease in natural gas demand of 439,539 therms per year compared with existing natural gas demand on the Project site (i.e., 800,549 therms per year). Furthermore, the proposed multi-use bicycle/pedestrian bridge over Bayfront Expressway/SR 84, as well as the proposed trip cap and enhanced Transportation Demand Management program, would serve to provide alternatives to single-occupancy automobile travel to and from the Project site and between the Project site and the existing Facebook Campus. Because of the various energy-saving measures described above and the resulting decrease in electricity and natural gas demand, the City finds no evidence that the Project's energy use would be wasteful, inefficient, or unnecessary.

Because development at the Project site would meet Part 6 of CCR Title 24 conservation standards and be served by PG&E and potentially Peninsula Clean Energy, the Project site would not directly require the construction of new energy generation or supply facilities. Furthermore, the Project site is currently zoned M-2 (General Industrial) and M-2-X Combining District (General Industrial, Conditional Development). The City of Menlo Park General Plan designates the Project site as Limited Industry. Development of the Project site would comply with the City's programmed land use designation; however, the Project Sponsor proposes to rezone the entire site to M-2(X) to exceed the maximum 35-foot height limit and amend the

zoning ordinance text to accommodate the proposed hotel. In designating a particular land use, the City anticipates a corresponding demand on energy services. However, because the Project would comply with the existing land use designation and would consume less energy than the existing TE Campus, the associated energy demand would be within the City's forecasts as well.

Overall, the Project would not result in inefficient, wasteful, or unnecessary consumption of energy, and development of the Project site would not result in adverse environmental impacts related to energy demand. The impact would be ***less than significant***.

Cumulative Impacts

The geographic context for a discussion of cumulative impacts on utilities is the service area of the utility provider. The geographic context for cumulative impacts on water supply, which are analyzed under Impact UT-1, above, is MPMWD's service area. The geographic context for cumulative impacts on wastewater treatment is the WBSD and SVCW service areas. The geographic context for cumulative impacts on solid waste is the Shoreway Environmental Center and Ox Mountain Landfill service areas. With regard to storm drainage, the geographic context would be the city, which contains the City's storm drain system. Additionally, the geographic context for cumulative impacts on electricity and natural gas is PG&E's service area in northern California as well as the service area of Peninsula Clean Energy.

Impact C-UT-1: Cumulative Water Treatment. The Project, in combination with other development within the city, would not require or result in the construction of new water treatment facilities or the expansion of existing facilities. (LTS)

Other development projects within MPMWD's service area include SRI International (1), 1283 Willow Road (3), Menlo Gateway (4), Facebook Building 23 (5), Commonwealth Corporate Center (7), German American School (10), New Magnate High School (11), ConnectMenlo (26), 605 Willow Road (28), 3639 Haven Avenue (29), 777 Hamilton Avenue (30), 3645 Haven Avenue (31), 1221 Willow Road (32), and Facebook Building 20.[61] This growth would increase demand with respect to water supply and treatment. MPMWD's draft 2015 UWMP provides water use projections through 2040 for its service area.

The total projected water demand within MPMWD's service area consists of water demands associated with the City's General Plan for buildout, water demands from other approved projects, and the Project. Projected annual water demands associated with the City's General Plan for buildout are approximately 1,310 mg in 2020 and 1,240 mg in 2040. The anticipated decline in water demands between 2020 and 2040, in spite of growth in total population and jobs, is largely due to decreasing projected water use in the industrial sector and increased water efficiency in the residential and non-residential sectors as a result of plumbing code updates and planned MPMWD conservation efforts. There are two projects (New Magnate High School and ConnectMenlo) that are pending City approval and not accounted for in the water demand projections of the City's General Plan for buildout; the total annual demand of these projects is approximately 344 mg. It is estimated that the total annual water demand would be approximately 1,584 mg in 2040 within MPMWD's service area (i.e., 1,240 mg for buildout of the City's General Plan plus 344 mg for other planned projects), excluding the Project. If other development exceeds MPMWD's water treatment capacity, this could be a significant cumulative impact.

[61] According to the WSA, Facebook Building 20 was completed in early 2015 but is included in the approved projects list within the MPMWD because 2015 City water meter data were not available at the time of the WSA's preparation.

As described under Impact UT-2, the Project would not result in the need for the expansion of existing water treatment facilities. As shown in Table 3.14-2, the city's total water demand in 2040 would be approximately 1,240 mg (3.4 mgd), at which point it is assumed that the other development projects considered in this analysis would be constructed and contributing to overall water demand at that time. Completion of the Tesla Water Treatment Facility and expansion of the Sunol Valley WTP and Harry Tracy WTP would allow SFPUC to deliver up to 635 mgd. The Project, in combination with other development within the city, would increase water demand, but the increased demand would not require or result in the construction of new water treatment facilities or the expansion of existing facilities. This cumulative impact is ***less than significant.***

Impact C-UT-2: Cumulative Wastewater Generation. The Project, in combination with other development within the WBSD service area, would not exceed wastewater treatment requirements, require or result in the construction of new wastewater treatment facilities or the expansion of existing facilities, or exceed expected demand and existing entitlements. (LTS)

As described above, WBSD used about 45 percent of its dry-weather capacity entitlement from SVCW, with a remaining available allocation of approximately 4.375 mgd of average daily dry-weather wastewater flows as of 2013. It is estimated that 100 percent of indoor water demand at the Project would become wastewater conveyed to the SVCW Regional Treatment Plant. As shown in Table 3.14-7, the Project's total demand for indoor water use is conservatively estimated to be 81 mg (or 0.3 mgd), without accounting for the proposed onsite wastewater system. As discussed above, further analysis may be required by WBSD and SVCW to assess sewer capacity and wastewater loading for the solids concentration generated by the onsite wastewater system. However, it is unlikely that further analysis would determine that new or expanded wastewater treatment facilities would be needed because it is anticipated that the potential onsite wastewater system would lower the total nitrogen load to the SVCW Regional Treatment Plant as well as the hydraulic load in the sanitary sewage collection system leading to the SVCW Regional Treatment Plant. Wastewater discharge from the Project site would constitute less than approximately 7 percent of WBSD's remaining available capacity entitlements from SVCW. The WBSD's current average dry-weather flow is 3.60 mgd.

To comply with SB x7-7, the city must reach a 10 percent reduction in water use by 2015 and a 20 percent reduction by 2020. It is estimated that the total annual water demand would be approximately 1,584 mg in 2040 within MPMWD's service area (i.e., 1,240 mg for buildout of the City's General Plan plus 344 mg for other planned projects), excluding the Project. This represents an increase of 273 mg (0.75 mgd) compared with 2020 conditions. For the purposes of this analysis, a 1:1 ratio of water use to wastewater generation is assumed, and other development would represent 17 percent of WBSD's remaining available allocation from SVCW. Therefore, WBSD's current wastewater entitlement from SVCW would be enough to accommodate wastewater generated by other development. Because cumulative wastewater flows would be within the WBSD's existing wastewater entitlement, other development would not cause the SVCW Regional Treatment Plant to process more than its RWQCB permitted treatment capacity, and cumulative impacts related to wastewater generation would be considered ***less than significant.***

Impact C-UT-3: Cumulative Solid Waste Generation. The Project, combined with other development within the RethinkWaste's service area, would not exceed service area solid waste disposal capacity and would be expected to comply with federal, State, and local statutes and regulations related to solid waste. (LTS)

Data presented in the most recent Five-Year Countywide Integrated Waste Management Plan for San Mateo County shows that solid waste disposal for Menlo Park decreased from 58,927 tons in 1998 to 32,653 tons in 2008, representing a 45 percent decrease.[62] As stated above, Ox Mountain Landfill, which is anticipated to close in 2034, is permitted to accept 3,598 tons per day; it has a remaining capacity of approximately 27 million cubic yards. This estimate is based on current disposal and diversion rates and assumptions about future development within the landfill service area. Expanded recycling services began in January 2011. It is expected that the expanded recycling services increased the diversion of bottles, cans, paper, and plastic by approximately 15 percent. In addition, Chapter 12.48 of the City's Municipal Code requires that commercial development projects of 5,000 gsf or greater divert at least 60 percent of a given project's anticipated debris. This ordinance would apply to other development projects that would result in development of 5,000 gsf or more. In light of these considerations, there would be sufficient landfill capacity to accommodate solid waste until Ox Mountain Landfill's approximated closing date of 2034. In addition, the City would continue to require the Project and other foreseeable development to minimize solid waste disposal to Ox Mountain Landfill through recycling and other diversion practices and enforce compliance with the AB 1327, AB 341, and AB 1826.

Operation of the Project would generate approximately 31,440 pounds of solid waste per day, 16 tons per day, or approximately 4,087 tons per year. However, as previously stated for informational purposes only, data provided by the Project Sponsor show that Facebook employees produce approximately 4.28 pounds of waste per person per day (lower than the city's current disposal rate), with an average waste diversion rate of approximately 93 percent. The Project would make an incrementally small contribution to the overall amount of solid waste generated by the other development projects.

Impact C-UT-4: Cumulative Stormwater Generation. The Project, in combination with other development in the city, would not require the construction or expansion of stormwater facilities. (LTS)

The balance of other development in the city would consist primarily of infill and redevelopment, which would not increase the amount of impervious surfaces in the city substantially. Existing regulations require new projects to address the need for stormwater treatment. For example, as stated in Section 3.10, *Hydrology and Water Quality*, Provision C.3 of the San Francisco Bay MS4 Permit is for new development and redevelopment projects. It requires authorities to include appropriate source control, site design, and stormwater treatment measures in new development and redevelopment projects to address both soluble and insoluble stormwater runoff pollutant discharges and prevent increases in runoff flows from new development and redevelopment projects. Therefore, cumulative impacts on the City's stormwater drainage facilities would be considered ***less than significant.***

[62] The County of San Mateo. 2009. *Five-Year Countywide Integrated Waste Management Plan for San Mateo County.* December. Available: <http://www.co.sanmateo.ca.us/bos.dir/BosAgendas/agendas2010/Agenda20100126/20100126_att1_54.pdf>. Accessed: January 31, 2016.

Impact C-UT-5: Cumulative Energy Demand. The Project, in combination with other development in the city, would not result in wasteful, inefficient, or unnecessary energy use, and the Project, in combination with other development served by PG&E, would not exceed existing gas and electric supply capacity. (LTS)

All new development would be required to comply with Part 6 of CCR Title 24 energy conservation standards for new construction, which require specific energy-conserving design features, the use of non-depletable energy resources, or a demonstration that buildings would comply with a designated energy budget. Thus, relative to commercial or residential development, a cumulatively wasteful or inefficient use of electricity or natural gas would not occur. Regarding transportation energy, transportation vehicles, including both passenger and freight vehicles, are now heavily regulated in terms of fuel efficiency with aggressive State and federal regulatory requirements (e.g., the Pavley/Advanced Clean Car standards in California, the federal Corporate Average Fuel Economy standards, and similar efforts concerning heavier vehicles) that require progressive improvements in vehicle efficiency over time. As such, cumulative transportation energy use is not expected to be wasteful or inefficient.

Existing and planned gas and electric service would be provided to meet the needs of other development customers, as required by the CPUC, which obligates PG&E to provide service to its existing and potential customers. Because the Project and future development would comply with Part 6 of CCR Title 24 conservation standards and be served by PG&E and potentially Peninsula Clean Energy, new development would not directly require the construction of new energy generation or supply facilities that would be directly attributable to growth in the city. There would be no substantial adverse environmental impacts related to energy demand. Therefore, cumulative impacts related to energy would be considered ***less than significant.***

Chapter 4
Other CEQA Considerations

4.1 Significant and Unavoidable Environmental Impacts

Section 21100(b)(2)(A) of the California Environmental Quality Act (CEQA) requires that a Draft Environmental Impact Report (Draft EIR) identify any significant environmental effects that cannot be avoided should a project be implemented. Many impacts identified for a project would either be less than significant or mitigated to a less-than-significant level. However, some significant impacts cannot be mitigated to less-than-significant levels; these impacts are listed below.

Significant and Unavoidable Project-Level Impacts

- **Peak-Hour Motor Vehicle Traffic at Study Intersections.** Increases in traffic associated with the Project would result in increased delays during the a.m. and p.m. peak hours, causing significant and unavoidable impacts at study intersections. (Impact TRA-1)
- **Peak-Hour Motor Vehicle Traffic on Routes of Regional Significance.** Increases in peak-hour traffic associated with the Project would result in significant and unavoidable impacts on regionally significant segments of Bayfront Expressway/State Route 84 (Bayfront Expressway) and US 101. (Impact TRA-2)
- **Daily Motor Vehicle Traffic on Roadway Segments.** Increases in daily traffic associated with the Project would increase daily traffic volumes on study segments, resulting in significant and unavoidable impacts on roadway segments. (Impact TRA-3)
- **Increased Delay to Transit Vehicles.** Increases in peak-hour traffic associated with the Project would increase delay to AC Transit Dumbarton buses operating on Bayfront Expressway, resulting in a significant and unavoidable impact. (Impact TRA-8)
- **Conflicts with Applicable Plans and Policies**. The Project would conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing emissions of GHGs, especially EO S-3-05. (Impact GHG-2)

Significant and Unavoidable Cumulative Impacts

- **Cumulative Peak-Hour Traffic at Study Intersections.** Increases in traffic associated with the Project would contribute to increased delay during the a.m. and p.m. peak hours under 2040 conditions, contributing to significant and unavoidable cumulative impacts at study intersections. (Impact TRA-10)
- **Cumulative Peak-Hour Traffic on Routes of Regional Significance.** Increases in peak-hour traffic associated with the Project under 2040 conditions would contribute to significant and unavoidable cumulative impacts on regionally significant segments of Bayfront Expressway and US 101. (Impact TRA-11)
- **Cumulative Daily Traffic on Roadway Segments.** Increases in daily traffic associated with the Project would contribute to increased daily traffic volumes on study segments under 2040 conditions, contributing to significant and unavoidable cumulative impacts on roadway segments. (Impact TRA-12)

4.2 Significant Irreversible Environmental Changes

Section 15126.2(c) of the State CEQA Guidelines requires that a Draft EIR evaluate significant irreversible environmental changes that would be caused by a proposed project should it be implemented and that it identify irreversible environmental changes as those involving a large commitment of nonrenewable resources or irreversible damage resulting from environmental accidents.

The Project would involve approximately 962,400 gross square feet (gsf) of space within two new office buildings (Buildings 21 and 22) and a 200-room hotel with approximately 174,800 gsf. This development would require the use of materials such as steel and copper, as well as fossil fuels, during construction. The source metals used, unless they come from recycled materials, would represent an irreversible use of resources. Fossil fuels used during construction would represent an irreversible use of oil and natural gas.

As discussed in Section 3.14, *Utilities and Service Systems*, the Project would consume an estimated 759,000 gallons of fuel over the entire construction period and more than 300,000 kilowatt hours (kWh) of electricity annually during construction.

During operations, the Project's energy demand is estimated as follows:

- **Electricity**: The Project would consume approximately 16.6 million kWh of electricity per year, which would represent a decrease in electricity demand of 15.9 million kWh per year compared with existing electricity demand on the Project site (i.e., 32.5 million kWh per year).
- **Natural Gas**: The Project would consume approximately 361,010 therms of natural gas per year, which would represent a decrease in natural gas demand of 439,539 therms per year compared with existing natural gas demand on the Project site (i.e., 800,549 therms per year).
- **Other Fuel:** The Project would also consume more than 321,000 million British thermal units (BTUs) of fuel annually during normal operations. This Draft EIR assumes that no employees currently work at the Project site; therefore, no fuel is currently consumed at the Project site.

To the extent that electricity for the Project comes from renewable sources (e.g., hydropower, sun, wind, geothermal), it would not represent an irreversible use of resources. To the extent that electricity for the Project comes from non-renewable sources (e.g., natural gas, coal, nuclear), it would represent an irreversible use of those resources.

Permanent visual alterations would result from the Project with the construction of two office buildings and one hotel, each approximately 75 feet high. The proposed buildings would replace 10 existing buildings on the Project site, which range in height from one level to three partial levels. As discussed in Chapter 2, *Project Description*, three of the 10 existing buildings (Buildings 307–309) would be demolished regardless of Project implementation. Demolition of these buildings would occur prior to Project implementation under a separate ministerial permit. Development of the office buildings and hotel would result in a net increase of approximately 121,300 gsf at the Project site and increase overall building heights. The proposed multi-use bicycle/pedestrian bridge over Bayfront Expressway/State Route 84 would also be a new source of height, mass, and bulk. Under the existing site plans, all trees would be removed, and no heritage trees would remain. The Project Sponsor is proposing to replace the heritage trees that would be removed following Project implementation, in compliance with the proposed heritage tree replacement ratio. As documented in Section 3.2, *Aesthetics*, these physical changes would alter views of the Project site from various locations, but they would not substantially affect scenic vistas, nor would they substantially degrade the existing visual character or quality of the site and its surroundings.

Accidents, such as a release of hazardous materials, may trigger irreversible environmental damage. Hazardous materials that could be used at the Project site include cleaning products for facility maintenance, liquids with polychlorinated biphenyls, mixed oil, and organic solids. Exposure of site occupants to hazardous materials could occur under the following scenarios: improper handling or use of hazardous materials or hazardous wastes during occupancy of the Project site, a transportation accident, environmentally unsound disposal methods, and/or emergencies such as fires or explosions. However, numerous laws and regulations have been developed at the federal, state, and local levels to reduce public health and safety risks to reasonably prudent levels. These regulations are identified in Section 3.11, *Hazards and Hazardous Materials*. Significant irreversible changes from accidental releases are not anticipated.

4.3 Growth-Inducing Impacts

Section 15126.2(d) of the State CEQA Guidelines states that an EIR should discuss "…the ways in which the project could foster economic or population growth, or the construction of additional housing, either directly or indirectly, in the surrounding environment." Growth can be induced in a number of ways, including through the elimination of obstacles to growth; through the stimulation of economic activity within the region, including the generation of significant employment opportunities; or through precedent-setting action. CEQA requires a discussion of how a project could increase population, employment, or housing in the areas surrounding a project as well as an analysis of the infrastructure and planning changes that would be necessary to implement the project.

The EIR discusses the manner in which the Project could affect growth in the city and the larger Bay Area. In accordance with the State CEQA Guidelines, Section 15126.2, this discussion of growth inducement is not intended to characterize the Project as necessarily beneficial, detrimental, or of little significance to the environment. This growth-inducement discussion is provided for informational purposes so that the public and local decision-makers have an appreciation of the potential long-term growth implications of the Project. Although CEQA requires disclosure of growth-inducement effects, an EIR is not required to anticipate and mitigate the effects of a particular project on growth in other areas. Growth inducement has the potential to result in an adverse impact if the growth is not consistent with or accommodated by the land use plans and growth management plans and policies for the affected area. Because the general plan of a community defines the location, type, and intensity of growth, it is the primary means of regulating development and growth in that community.

In discussing growth inducement, it is useful to distinguish between direct and indirect growth. Direct growth occurs on a project site as a result of new facilities (buildings) being constructed or an increase in developed space. As discussed in Chapter 2, *Project Description*, direct growth associated with the Project would amount to 1,137,200 gsf of development, which includes approximately 962,400 gsf of office uses and approximately 174,800 gsf of hotel uses.

Indirect growth occurs beyond a project site but is stimulated by a project's direct growth. Indirect growth is tied to increased direct and indirect investment and spending associated with the new direct growth. For example, if a project were implemented, future workers would spend money in the local area, and the expenditure of that money would result in additional jobs. The indirect jobs generated by a project (referred to as the "multiplier effect") tend to be relatively close to places of employment but may occur at more distant locales as well. When CEQA refers to induced growth, CEQA means all growth—direct, indirect, and otherwise defined.

A total of 6,550 employees would be generated by the Project; this, in turn, would generate substantial demands for new housing in the city and region. As discussed in Section 3.12, *Population and Housing*, between 2015 and 2020, the indirect housing demand generated by the Project would be 3.1 percent of the projected household growth in the Bay Area, 8.3 percent of household growth in San Mateo County, and 46 percent of housing growth in the city. Overall, on a regional basis, the Project's demand for housing would not be a significant share of the total housing growth projected by the Association of Bay Area Governments (ABAG). As such, the development associated with the Project would be generally consistent with what is projected in the City of Menlo Park's (City's) adopted general plan and what is included in the regional ABAG projections. Thus, the adopted general plan considered the direct job growth and the indirect induced housing demand that would result from implementation of the Project.

As discussed in Section 3.12, *Population and Housing*, the increase in employment at the Project site would result in an increase in housing demand and an influx of new residents within the city and other jurisdictions in the region as well as outside the Bay Area region in outlying areas.[1] Assuming the county's average of approximately 1.80 employees per worker household, the Project would generate a total housing demand of 3,638 units to support employment from the Project.[2] Given existing Facebook employment, it is estimated that 4.8 percent of the employees generated by the Project would seek and find housing in the city. Thus, approximately 314 of the projected number of employees at the Project site would be expected to live in the city.[3] Given an average of 1.8 workers per household, the Project could generate a housing demand of 175 units in the city.[4] In addition, the Project could, using these assumptions, create a demand for approximately 3,463 units outside the city.[5]

Approximately 7.6 percent of all city residents work in the city. As such, to provide a conservative analysis, a discussion that assumes that 7.6 percent of employees generated by the Project would seek and find housing in the city is provided for informational purposes only. Using this rate, approximately 498 of the projected number of employees at the Project site would be expected to live in the city.[6] The Project would generate demand for 277 housing units in the city, assuming that each new employee who would live in the city would form a household.[7] In addition, the Project could, using these assumptions, create demand for approximately 3,361 units outside the city.[8]

As discussed in Section 3.1, *Land Use and Planning*, the city's jobs/housing ratio is projected to worsen over the next 5 years. The Project's development of office and hotel uses, rather than housing, in the context of the city's already high jobs/housing ratio, does not further the balanced growth objectives

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[1] Some of the employees in cities within Silicon Valley, such as Menlo Park, are long-distance commuters from areas outside the Bay Area, such as San Joaquin County, who take advantage of relatively lower housing prices in outlying areas and the relatively higher salaries and/or available jobs in Silicon Valley.

[2] A total of 3,638 new housing units required to support the Project = 6,550 employees/1.80 worker per housing ratio.

[3] The 6,550 Project employees x 4.8 percent of Project employees who would live in the city = 314 Project employees who would live in the city.

[4] The 314 Project employees in the city/1.8 workers per worker household = 175 units in the city's sphere of influence.

[5] The 3,638 units to support employment from the Project minus 175 units demanded in the city's sphere of influence due to the Project = 3,463 units demanded outside of the city due to the Project.

[6] The 6,550 Project employees x 7.6 percent of Project employees who would live in the city = 498 Project employees who would live in the city.

[7] The 498 Project employees in the city/1.8 workers per worker household = ~277 units in the city's sphere of influence.

[8] The 3,638 units to support employment from the Project minus 277 units demanded in the city's sphere of influence because of the Project = 3,361 units demanded outside of the city because of the Project.

of Plan Bay Area. Plan Bay Area represents a transportation and land use/housing strategy for how the Bay Area will address its transportation mobility and accessibility needs, land development, and greenhouse gas emissions reduction requirements through 2040. This manifests in upward pressure on housing demand because of low supply, which, in turn, results in workers seeking housing farther and farther away from the Project site. However, as discussed below, it is not possible to predict with certainty whether the percentage of employees both living and working in the city will be maintained into the future, nor it is possible to predict accurately exactly where employees from outside the city might live.

Employees of the Project could be housed throughout the region. As stated above, it is anticipated that 4.8 percent of the employees generated by the Project would live in the city. The remaining employees would very likely find housing throughout the region, with the majority living in San Mateo, Santa Clara, and San Francisco Counties and with a small percentage living outside the region in outlying areas. Alternatively, more local housing could be provided by cities within San Mateo County, thereby lessening the commute for those traveling to the Project site by providing local housing options. However, the future location of housing demand cannot be predicted with certainty because it is influenced by complex factors, including housing supply, demographics of new employees, traffic and transit conditions, salaries of new employees, and preferences of new employees.

Because of the lack of adequate housing throughout the Bay Area, residential demand could occur as far away as Monterey or San Joaquin Counties. Regardless of where it is located, future housing development would result in environmental impacts. Secondary environmental impacts in the potentially affected areas would depend on the location of the new development as well as the intensity of the development. CEQA does not require that a detailed analysis be conducted for these secondary impacts, but because of the magnitude of the housing demand created by the Project, this discussion considers, very broadly, the types of impacts that could occur for infill/redevelopment, suburban, and rural residential development.

Table 4-1 outlines the most likely ways for each type of development to affect resources.

Table 4-1. Most Likely Resources Affected by Induced Growth in Urban, Suburban, and Rural Areas

CEQA Topic	Urban	Suburban	Rural
Land Use		●	●
Aesthetics			
▪ Block scenic vista or damage scenic resource, introduce new sources of light and glare		●	●
▪ Degrade visual character	●	●	●
Transportation	●	●	●
Air Quality			
▪ Violate air quality standards, increase criteria pollutants	●	●	●
▪ Expose sensitive receptors to substantial pollutants	●		
Greenhouse Gas Emissions		●	●
Noise	●	●	●
Cultural Resources			
▪ Demolition of historic resources	●		
▪ Adverse change to archaeological resources or unique geologic feature		●	●

CEQA Topic	Urban	Suburban	Rural
Biological Resources		●	●
Geology and Soils	●	●	●
Hydrology and Water Quality		●	●
Hazards and Hazardous Materials	●	●	●
Population and Housing	●	●	●
Public Services		●	●
Recreation	●	●	●
Utilities		●	●
Mineral Resources		●	●
Agriculture and Forest Resources			●

Notes:
● = more likely to result in impacts
No ● = less likely to result in impacts

It should not be concluded from the information in the table above that significant impacts would occur within each checked resource area or that no impacts would occur in resource areas that are not checked; the table is provided only to note that the areas of more likely impact tend to vary under different development settings. Resource topics are broken down by subtopic, as needed, to clarify differences between urban, suburban, and rural development. Note that any discretionary development that is subject to CEQA review, including projects that are exempt from CEQA, requires lead agencies to identify feasible mitigation measures prior to approval.

4.4 Cumulative Impacts

The State CEQA Guidelines (Section 15355) define cumulative impacts as "…two or more individual effects which, when considered together, are considerable or which compound or increase other environmental impacts." The combination of the Project with other foreseeable projects in the vicinity or region that would be affected by the Project defines the cumulative scenario. Cumulative impacts and the Project's contribution to the cumulative impacts are addressed in Sections 3.1 through 3.14 of the Draft EIR. These sections identify feasible mitigation measures to reduce the Project's cumulatively considerable contributions to significant cumulative impacts to less than cumulatively considerable. These sections also identify those cumulative impacts for which the Project's contribution would remain cumulatively considerable, even with implementation of feasible mitigation measures. Please refer to those sections of the Draft EIR for a discussion of cumulative impacts.

Chapter 5
Alternatives Analysis

5.1 Introduction

The California Environmental Quality Act (CEQA) (Public Resources Code [PRC], Section 21000 et seq.) and the State CEQA Guidelines (California Code of Regulations, Title 14, Section 15000 et seq.) require that an environmental impact report (EIR) "describe a range of reasonable alternatives to the project, or to the location of the project, which would feasibly attain most of the basic objectives of the project but would avoid or substantially lessen any of the significant effects of the project, and evaluate the comparative merits of the alternatives" (State CEQA Guidelines Section 15126.6(a)). If mitigation measures or a feasible project alternative that would meet most of the basic project objectives would substantially lessen the significant environmental effects of a proposed project, then the lead agency should not approve the proposed project unless it determines that specific technological, economic, social, or other considerations make the mitigation measures and the project alternative infeasible (PRC Section 21002, State CEQA Guidelines Section 15091(a)(3)). The EIR must also identify alternatives that were considered by the lead agency but were rejected as infeasible during the scoping process and should briefly explain the reasons underlying the lead agency's determination (State CEQA Guidelines Section 15126.6(c)).

One of the alternatives that must be analyzed is the "No Project" Alternative. The No Project analysis must discuss the existing conditions at the time the notice of preparation (NOP) is published as well as what would be reasonably expected to occur in the foreseeable future if the project were not approved and development continued to occur in accordance with existing plans and consistent with available infrastructure and community services (State CEQA Guidelines Section 15126.6(e)(2)). Therefore, pursuant to the State CEQA Guidelines, this section discusses and analyzes a No Project Alternative.

In addition to the No Project Alternative, this section provides an additional alternative (Reduced Intensity Alternative) to the Project and analyzes the impacts of each. This section later provides a description of the alternatives and compares the significant impacts of the alternatives to the significant environmental impacts of the Project as proposed.

5.2 Description of Alternatives Considered

As discussed in Chapter 2, *Project Description*, the Project Sponsor has identified the following Project objectives that are relevant to the physical impacts considered in this document.

- Responsibly expand the Facebook Campus within Menlo Park to create a diverse and economically resilient workspace for Facebook and its affiliated companies, such as Instagram, Oculus, and Internet.org, and allow for a long-term presence in Menlo Park.
- Provide high-quality, highly sustainable office space at a permitted development density of 0.45 floor area ratio (FAR) that incorporates a robust Transportation Demand Management (TDM) program.
- Develop a highly connected Campus that provides flexible workspace.

- Minimize traffic and greenhouse gas (GHG) emissions by providing multiple transportation options for employees.
- Use highly sustainable design techniques to promote energy and water efficiency.
- Connect the Campus to the community by including a publicly accessible open space.
- Create a bicycle-/pedestrian-friendly environment that enhances connectivity between the Belle Haven neighborhood and Bayfront Park and the Bay Trail.
- Rehabilitate an existing industrial site, and remediate hazardous materials where appropriate.
- Provide new green spaces and additional habitat and landscaped areas with native drought-tolerant plant species.
- Create an accessible Campus that enhances connectivity, and promotes a sense of transition between the Belle Haven neighborhood and the Bay.
- Generate new revenue for the City and other public entities, including potential transient occupancy tax revenue from a potential new limited service hotel.

As stated above, the alternatives to a proposed project are meant to feasibly attain most of the basic project objectives while avoiding or substantially lessening its significant impacts. Significant and unavoidable Project-specific and cumulative impacts from the Project are listed below.

Project-Level Impacts

- **Peak Hour Motor Vehicle Traffic at Study Intersections.** Increases in traffic associated with the Project would result in increased delays during the a.m. and p.m. peak hours causing significant and unavoidable impacts at study intersections. (Impact TRA-1)
- **Peak Hour Motor Vehicle Traffic on Routes of Regional Significance.** Increases in peak hour traffic associated with the Project would result in significant and unavoidable impacts to regionally significant segments of State Route 84 / Bayfront Expressway and US 101. (Impact TRA-2)
- **Daily Motor Vehicle Traffic on Roadway Segments.** Increases in daily traffic associated with the Project increase daily traffic volumes on study segments, resulting in significant and unavoidable impacts on roadway segments. (Impact TRA-3)
- **Increased Delay to Transit Vehicles.** Increases in peak hour traffic associated with the Project would increase delay to AC Transit Dumbarton buses operating on Bayfront Expressway, resulting in a significant and unavoidable impact. (Impact TRA-8)
- **Conflicts with Applicable Plans and Policies.** The Project would conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of GHGs, especially EO S-3-05. (Impact GHG-2)

Cumulative Impacts

- **Cumulative Peak Hour Traffic at Study Intersections.** Increases in traffic associated with the Project would contribute to increased delay during the a.m. and p.m. peak hours under Year 2040 conditions contributing to significant and unavoidable cumulative impacts at study intersections. (Impact TRA-10)

- **Cumulative Peak Hour Traffic on Routes of Regional Significance.** Increases in peak hour traffic associated with the Project under Year 2040 conditions would contribute to significant and unavoidable cumulative impacts to regionally significant segments of State Route 84/Bayfront Expressway, and US 101. (Impact TRA-11)
- **Cumulative Daily Traffic on Roadway Segments.** Increases in daily traffic associated with the Project would contribute to increased daily traffic volumes on study segments under Year 2040 conditions, contributing to significant and unavoidable cumulative impacts on roadway segments. (Impact TRA-12)

Based on the goal of reducing these significant and unavoidable impacts, two Project alternatives have been developed for evaluation in this Draft EIR: the No Project Alternative and Reduced Intensity Alternative. Table 5-1 provides a summary of key features of the Project and each alternative. Further details regarding potential impacts resulting from each alternative are provided below.

Table 5-1. Comparative Description of the Project Alternatives

	Project	No Project Alternative	Reduced Intensity Alternative
Total Square Footage Onsite[a]	1,137,200	511,700	848,480
Number of Buildings Onsite[a]	4	7	4
Number of Parking Spaces	3,533	1,690	2,475
Daily Vehicle Trip Cap[b]	26,457	10,128	22,127
Net New Employees	6,550	0	4,630

Notes:

a. Gross square feet (gsf); excludes existing Building 23.

b. The trip cap includes Building 20, Building 23, and the Project site. The trip cap for existing Buildings 10–19 is also being modified but is not shown in this table.

It has been determined that, in order to minimize significant and unavoidable impacts relative to transportation, air quality, and GHG emissions, an approximately 30 percent reduction in daily trips and employees would be necessary. In addition, to limit the number of employees, parking would also be reduced by approximately 30 percent. The 30 percent reduction was chosen because it allows for an increase in occupancy and development over existing conditions at the Project site, while decreasing the overall number of employees and vehicle trips associated with the Project. It also allows for the attainment of the majority of the Project objectives. For these reasons, the Reduced Intensity Alternative reducing employees by 30 percent was chosen as the most feasible alternative.

No Project Alternative

No additional construction would occur at the Project site with implementation of the No Project Alternative. Under a separate project, Buildings 307–309 would be demolished, but the No Project Alternative would retain Buildings 301–306. Not including Building 23, the Project site would encompass approximately 511,700 gsf of building area. In order to meet the definition of a “no project” alternative under CEQA, the No Project Alternative would not be permitted discretionary approvals, entitlements, or other environmental reviews. Therefore, Buildings 301–306 could not be occupied and would remain vacant. No additional employees would be added to the Project site. The same amount of

parking spaces would be provided at the Project site as under existing conditions (1,690 spaces), which could be used by the occupants of Building 23. The multi-use bicycle/pedestrian bridge over SR 84 would not be constructed, and the publicly accessible open space would not be installed. Access to the Project site would remain the same, and no new site access points would be constructed.

Reduced Intensity Alternative

The Reduced Intensity Alternative would include a 30 percent reduction in the amount of office floor area and number of office employees compared to the Project. This would equate to approximately 673,680 gsf of office building area. Including the hotel, the Reduced Intensity Alternative would result in approximately 848,480 gsf (not including Building 23). The Reduced Intensity Alternative would accommodate approximately 4,630 employees, with 4,480 Facebook employees and 150 hotel employees. As with the Project, the Reduced Intensity Alternative would include office uses and a hotel. The Reduced Intensity Alternative would result in an equivalent decrease in daily trips, which would equate to a trip cap of approximately 12,000 daily trips as a result of the Reduced Intensity Alternative. Including Buildings 20 and 23, the total site-wide trip cap would be approximately 22,127 daily trips.

This Draft EIR assumes that the site plan for the Reduced Intensity Alternative would be similar to that of the Project, with a reduced building footprint. Because the building footprints would be smaller, all footprint-based impacts would be the same as or less than those of the Project. The maximum building height would be the same as under the Project at 75 feet. Accordingly, the Reduced Intensity Alternative would still require rezoning of the Project site to a M-2(X) (Conditional Development Overlay) zoning district with a corresponding conditional development permit in order to increase the permitted building heights and define the development standards for the Project.

This EIR assumes that similar landscaping and circulation features would be installed, as proposed under the Project, including a publicly accessible open space and a terraced garden for employee use and a bicycle/pedestrian overcrossing and path that would connect the Belle Haven neighborhood with the Campus and the Bay Trail and Bayfront Park. Buildings 21 and 22 would include green roofs and terraces. The Reduced Intensity Alternative would also include a potential onsite wastewater system, which would process approximately 23 million gallons of water annually, and stormwater treatment areas. Furthermore, the TDM program, implemented to ensure that the daily vehicle trip cap would be met, would be similar but scaled for a smaller number of employees. As with the Project, the Reduced Intensity Alternative would be accessible from three access points: the current access point at Chilco Street and Constitution Drive, a new intersection at the northwest corner of the site, and a new signalized intersection at Bayfront Expressway (SR 84) at the approximate midpoint of the site. Vehicular, bicycle, and pedestrian routes throughout the site, as well as emergency vehicle access routes, would remain the same under the Reduced Intensity Alternative as under the Project. However, because the Reduced Intensity Alternative would result in less building area and fewer employees, the amount of parking would be reduced. This alternative would provide 2,475 parking stalls, compared to 3,533 stalls under the Project. It is assumed that the reduction in parking spaces would result in increased landscape areas.

5.3 Attainment of Project Objectives

An evaluation of how each alternative meets or does not meet the basic Project objectives is provided below. Pursuant to State CEQA Guidelines Section 15126.6(a), this analysis compares the alternatives to the objectives of the Project. As described in detail above, there are two alternatives for the Project: the

No Project Alternative and the Reduced Intensity Alternative. The following analysis describes the extent to which these alternatives meet or do not meet the Project Sponsor's objectives as described in Chapter 2, *Project Description*, and discussed above.

No Project Alternative

The No Project Alternative would not meet any of the primary objectives of expanding the Facebook Campus as a diverse and economically resilient workspace for Facebook and its affiliated companies and as a bicycle- and pedestrian-friendly, sustainable, flexible workspace that is highly interconnected and connected to the Belle Haven neighborhood and the Bay; that generates new revenue for the City and other public entities; and that rehabilitates an industrial site. Instead, the Project site would remain unoccupied and would not provide resources to the Facebook Campus (except for some parking for Building 23). The No Project Alternative would not demolish the existing buildings at the Project site and would not construct the proposed buildings, the publicly accessible open space, and bicycle and pedestrian paths. No connection between the Belle Haven neighborhood and the Bay Trail and Bayfront Park would be built. Additionally, the No Project Alternative would not create jobs; instead of approximately 6,550 jobs under the Project, the No Project Alternative would provide no new jobs at the Project site (not including Building 23). The tax revenues for the City would stay the same rather than increase with implementation of the Project. As such, the No Project Alternative would not meet the Project objectives.

Reduced Intensity Alternative

The Reduced Intensity Alternative would not fully achieve many of the Project Sponsor's objectives because the reductions in office space would not allow Facebook to operate at its desired level. However, the alternative would meet some of the objectives to a reduced degree. A reduction in net daily vehicle trips of 27 percent would still allow the Facebook Campus to be occupied at a level greater than existing conditions but less than what is proposed under the Project. In addition, the Reduced Intensity Alternative would develop the Facebook Campus with a building program similar to the building program under the Project. Under the Reduced Intensity Alternative, the allowable net increase in daily vehicle trips would be 27 percent less than that proposed under the Project. With the reduced trips, the Reduced Intensity Alternative would translate to approximately 4,630 employees instead of 6,550 in total, which would not meet the Project Sponsor's needs for growth.

The Facebook Campus would be developed at a lower development density than the Project's development density of 0.45 FAR. The Reduced Intensity Alternative would provide a less economically resilient workspace for Facebook and its affiliated companies, such as Instagram, Oculus, and Internet.org, compared with the Project. The Reduced Intensity Alternative would generate less new tax revenue for the City and other public entities. Because it is assumed that the building program would not be substantially different under the Reduced Intensity Alternative, the Facebook Campus would be highly connected and would provide flexible workspace, as under the Project. The Reduced Intensity Alternative would connect the Campus to the community by including publicly accessible open space. The Facebook Campus would also provide new green spaces and additional habitat and landscaped areas with native drought-tolerant plant species, similar to the Project. Similar to the Project, the Reduced Intensity Alternative would also create a bicycle-/pedestrian-friendly environment.

Because the Reduced Intensity Alternative would be in the same location as the Project, the Reduced Intensity Alternative would similarly develop a highly interconnected Campus. The Project site would also be connected to the community through a publicly accessible open space and a bicycle/pedestrian

bridge and path that would join the Facebook Campus to the Belle Haven neighborhood as well as Bayfront Park and the Bay Trail. The Reduced Intensity Alternative would also rehabilitate an existing industrial site and remediate hazardous materials where appropriate.

Similar to the Project, the Reduced Intensity Alternative would incorporate features that would promote sustainability. The Reduced Intensity Alternative would minimize traffic and GHG emissions by providing multiple transportation options for employees, as would the Project. This alternative would also implement a TDM program to minimize vehicle use. As with the Project, the Reduced Intensity Alternative would use highly sustainable design techniques to promote energy and water efficiency.

5.4 Alternatives Considered but Rejected

State CEQA Guidelines Section 15126.6(f)(2) states that a Draft EIR must consider offsite alternatives if such alternatives are deemed to be feasible by the lead agency. As stated in State CEQA Guidelines, Section 15126.6(f)(1), factors that may be considered when a lead agency is assessing the feasibility of an alternative include:

> site suitability, economic viability, availability of infrastructure, general plan consistency, other plans or regulatory limitations, jurisdictional boundaries (projects with a regionally significant impact should consider the regional context), and whether the proponent can reasonably acquire, control, or otherwise have access to the alternative site (or the site is already owned by the proponent).

Alternative Locations

Alternative locations for the Project were considered infeasible because the Project Sponsor owns this site; an alternate location for the office uses would require additional land acquisition, which is not included in the Project Sponsor plans or objectives. In addition, the Project site is adjacent to the current Facebook headquarters and the Project would be an expansion of that Campus. An offsite alternative would not meet the Project Sponsor's objectives and long-term growth needs. The Project Sponsor desires to remain in the same geographic area as the existing Campus to maintain its current employee base and to develop a highly connected Campus. This cannot be attained at an alternative site.

Although the Project could potentially be constructed on other similar-sized parcels near the San Francisco Bay (Bay) (for example, Redwood City, East Palo Alto, or Mountain View), there are currently no alternative sites in these areas that could accommodate the development intensity proposed given existing land use designations and zoning and scarcity of available land in the area. Further, building at an offsite location would not accomplish the objectives of developing a highly connected Campus, creating an environment that enhances connectivity between the Belle Haven neighborhood and Bayfront Park and the Bay Trail, and that provides a sense of transition between the Belle Haven neighborhood and the Bay. In addition, the significant and unavoidable impacts of the Project would most likely occur regardless of location, meaning that an offsite alternative would not further reduce these impacts and may increase impacts because it would require travel between disconnected campus locations.

Therefore, because of the aforementioned issues relative to site suitability, economic viability, and acquisition and control, an alternative site for the Project has been rejected as infeasible. This Draft EIR does not analyze an offsite location alternative.

Alternative Development Scenario

Alternatives that would consist of a permanent use other than office and hotel uses were not considered, except for onsite housing, discussed later, because they would not be consistent with applicable City zoning and General Plan land use designations and policies. In addition, uses other than office uses would not be consistent with the rest of the Facebook Campus or the Project Sponsor's objectives.

Development consistent with existing zoning ordinance requirements, which allow a maximum height of 35 feet, was considered. Under this alternative, the Project site could be developed with office buildings totaling approximately 1.396 million gsf under existing FAR limitations. This would accommodate a similar number of employees at the Project site. However, without an increase in height, the buildings would cover a larger portion of the Project site. Increasing the footprint would decrease the pedestrian-friendly campus atmosphere, reduce the landscaping, and result in a dramatic increase in impervious coverage, thereby increasing environmental impacts relative to hydrology. An increase in impervious coverage would most likely result in less groundwater recharge, with associated potential impacts on groundwater volume and water quality as a result of potentially increased stormwater runoff and associated pollutants. This would reduce the ability of the Project Sponsor to achieve its sustainability and building design goals. This alternative has been rejected because the impacts resulting from the increase in population would remain without the commensurate improvements in work-environmental connectivity, both in outdoor and indoor spaces, sustainability in design, site landscaping, and hydrology improvements.

Greater Reductions in Intensity Alternative

Reductions greater than 30 percent in the development intensity were evaluated as an alternative, but determined to be infeasible. Further reductions would not allow for redevelopment of the Project site to the maximum extent permitted under the zoning ordinance. The purpose of the Project is to expand the existing Campus in order to create an economically resilient workspace for Facebook and its affiliated companies. Reductions in office space would not allow Facebook to operate at the desired level and would most likely result in the need for additional space at a different location. A further reduction in development intensity would further reduce new revenue for the City and other public entities, including potential transient occupancy tax revenue from a potential new limited service hotel. Therefore, this alternative was considered but rejected from further analysis in this document.

Onsite Housing Alternative

An alternative has been considered that would include housing at the Project site. The inclusion of residential uses at the Project site could reduce traffic impacts associated with the Project by increasing the supply of local housing available to future employees if accompanied by a reduction in the daily and peak-period vehicle trip caps. The reduction in traffic would, in turn, reduce traffic, air quality, and GHG impacts. However, the Project site is not zoned for residential or mixed uses with residential units; a zoning ordinance amendment would be required in addition to the currently needed discretionary approvals. In addition, in 2007, Tyco Electronics and the Department of Toxic Substances Control (DTSC) entered into a Land Use Covenant (LUC) to protect present and future site users and the environment from hazardous materials that remain in soil and groundwater on the Raychem site (which includes the Project site). The LUC restricts use of the Raychem site to commercial and industrial land uses. Therefore, residential uses are not permitted at the Project site.

5.5 Impact Assessment

This section evaluates whether the alternatives would reduce the significant impacts of the Project to less-than-significant levels and/or would generate impacts other than those identified for the Project. Summarized lists of recommended mitigation measures for each alternative are provided in the analysis below; however, these mitigation measures are fully described in each resource section within Chapter 3, *Environmental Impact Analysis*, of this document. In addition, a summary comparative analysis of the Project and its alternatives is provided in Table 5-3, at the end of this section.

No Project Alternative

Land Use

In order to develop the Project to the desired height, the Project would require a rezoning to the M-2(X) zoning district with a corresponding conditional development permit. The No Project Alternative would not change the zoning or require a conditional development permit as no new buildings would be constructed. Similar to the Project, the No Project Alternative would result in no impact on an adopted habitat conservation plan, natural community conservation plan, or other approved local, regional, or state habitat conservation plans; it would not conflict with the existing land use designation, nor would it divide a community. Similar to the Project, the No Project Alternative would be generally consistent with policies in the Regional Transportation Plan for the Bay Area and the City/County Association of Governments Congestion Management Program. Unlike the Project, because the No Project Alternative would not increase operational traffic, it would not result in the policy conflicts with respect to the General Plan Circulation and Transportation policies that could potentially occur with the Project. However, the No Project Alternative could result in other policy conflicts that would not occur with the Project. The General Plan and the Association of Bay Area Governments (ABAG) Bay Trail Plan and Design Guidelines promote the enhancement of bicycle and pedestrian linkages. The No Project Alternative would not construct the bicycle/pedestrian bridge over SR 84, and would not connect the Project site and the Belle Haven neighborhood to the Bay Trail. Nonetheless, as described in Section 3.2, *Land Use*, the ultimate findings of the General Plan consistency do not require that a project be entirely consistent with each individual General Plan policies. As such, because existing conditions would not change with the No Project Alternative, this alternative would result in a less-than-significant impact. (LTS)

Aesthetics

The Project site is not located adjacent to a state scenic highway. Therefore, as with the Project, the No Project Alternative would have no impacts on scenic resources along a state scenic highway. The No Project Alternative would not alter existing conditions and, therefore, would not change the existing visual character. Under the No Project Alternative, existing buildings and landscaping would remain as-is. Currently the Project site consists of outdated buildings and surface parking lots that do not complement the natural quality of the salt ponds and marshes to the north, Building 20 to the east, the Belle Haven neighborhood to the south, and the office parks to the west. In comparison, the Project would increase unity with its surroundings by constructing buildings that would reflect a similar architectural design and by including enhanced landscaping. These improvements on visual quality would not occur with the No Project Alternative.

Since no new structures would be built under the No Project Alternative, no new source of light and glare would be created, compared to the potentially significant, but mitigable, light and glare impacts that would result from the Project. Similarly, under the No Project Alternative, shadows would not

change from current conditions since no new buildings would be constructed. In comparison, under the Project, shadow impacts on the Project site would be restricted to the interior of the site and a small portion of Bayfront Expressway and the Bay Trail because of the multi-use bicycle/pedestrian bridge and would be less than significant. No impact on aesthetics would result with the No Project Alternative. (NI)

Transportation/Traffic

The No Project Alternative would retain approved conditions at the Project site. The only vehicle trips to and from the Project site would be associated with Building 23. Therefore, the No Project Alternative would be consistent with historic trip generation for the Project site. The No Project Alternative would result in no additional vehicle trips and no transportation-related impacts beyond those that were identified in the approvals for the prior projects. (NI)

Air Quality

The No Project Alternative would not construct new uses at the Project site and no uses would occupy the Project site. Therefore, the amount of emissions of criteria pollutants currently generated at the TE Connectivity Campus would not occur under the No Project Alternative. No new construction or operational emissions would be emitted; therefore the BAAQMD's significance thresholds would not be exceeded, and health risks associated with toxic air contaminants would not increase. Since no new development would be constructed or operate under the No Project Alternative, no growth would occur, and there would be no conflict with any applicable air quality plan. As a result, no impacts to air quality would result with the No Project Alternative. (NI)

Greenhouse Gas Emissions

The No Project Alternative would not involve construction activities and would not result in new direct GHG emissions from construction equipment. Additionally, no direct GHG emissions from area and mobile sources or indirect emissions from electricity generation, solid waste generation, or water consumption would be emitted, because there would be no new land uses operating at the Project site. Since this alternative would not construct new buildings, and no uses would operate at the Project site, there would be no increase in GHG emissions, resulting in no impact. (NI)

Noise

Since no construction would occur under the No Project Alternative, no construction noise would be generated. Operational noise at the Project site would remain the same because vehicle trips to the Project site as a whole (including Building 23) would not increase. In addition, the No Project Alternative would not include HVAC systems, emergency generators, or a recycled water system, all of which would generate noise under the Project. Therefore, the No Project Alternative would avoid the construction and operational noise and vibration impacts that would occur under the Project, resulting in no impacts. (NI)

Cultural Resources

The existing structures at the Project site are not historically significant. Although Buildings 307–309 would be demolished, this would occur as part of a separate project. The No Project Alternative would not demolish any of the existing buildings at the Project site. Because these existing structures are not

historically significant, neither the Project nor the No Project Alternative would result in impacts on historic buildings. Because no ground-disturbing construction would occur at the Project site, the No Project Alternative would not result in impacts on archeological and paleontological resources or human remains. (NI)

Biological Resources

The No Project Alternative would not include the demolition of any additional existing buildings, the construction of new buildings, or the removal of vegetation. As such, hoary bats would not be affected. Special-status bird and mammal species that inhabit nearby saltwater and brackish water marshes would not be affected because no new trees would be added to the landscape and the bicycle/pedestrian bridge would not be built. In comparison, under the Project, avian predators could use the new trees and mammalian predators could use the new bridge to access the species in the marsh. Migratory birds would not be affected under the No Project Alternative because no trees would be removed and there would be no disruption of nesting habitat. Under the No Project Alternative, no heritage trees would be removed. Therefore, no Project or cumulative impacts would occur under the No Project Alternative and there would be no conflicts with local policies adopted to protect biological resources. No impacts on biological resources would result from the No Project Alternative. (NI)

Geology and Soils

No known faults cross the Project site, and the site is not within a mapped Alquist-Priolo Earthquake Fault Zone. There would be no impact from the No Project Alternative related to fault rupture. The Project site is primarily flat and not adjacent to any hillsides where seismically induced landslides or other downslope movement of rock or soil material that could pose a hazard. The No Project Alternative would not include any septic tanks or leach field systems. As no construction would occur at the Project site under the No Project Alternative, there would be no topographic changes that could alter the erosion potential. In addition, construction activities, such as excavation, would not introduce instability and cause slopes to collapse.

The No Project Alternative would not construct new buildings or increase the amount of employees at the Project site over existing conditions. Therefore, the No Project Alternative would not expose additional people to ground shaking, liquefaction, or expansive soils. The No Project Alternative would result in no potential for fault rupture, landslide hazards, soil erosion or other soil hazards, nor would the No Project Alternative expose additional people to ground shaking, liquefaction, or expansive soils, whereas these impacts would be less than significant under the Project. Consequently, the No Project Alternative would result in no impact, unlike the less-than-significant impact of the Project. (NI)

Hydrology and Water Quality

As with the Project, the site is not subject to flooding from tsunami, seiche, or dam failure and is not within the 100-year floodplain; accordingly, there would be no impact. The No Project Alternative would not develop the Project site and would not add employees over existing conditions. Because no additional employees would be added with the No Project Alternative, additional people would not be exposed to potential sea level rise. The No Project Alternative would not modify the existing surface conditions at the Project site, which would remain primarily covered with impervious surfaces. The No Project Alternative would result in no impact with respect to groundwater recharge potential. The No Project Alternative would not include construction activities that could alter drainage patterns on the site or result in temporary erosion and siltation. However, the No Project Alternative would not include

the new drainage system that the Project would introduce to the site. Because drainage patterns at the Project site are an existing condition, there would be no impact. The No Project Alternative would not include stormwater quality features planned under the Project, such as bioretention areas, to temporarily store stormwater runoff and settle out pollutants. Therefore, the No Project Alternative would have a greater impact on stormwater runoff and potential pollutants than the Project. Nonetheless, because the wastewater discharge and impervious surface area constitute existing conditions, the No Project Alternative would result in no impact. (NI)

Hazards and Hazardous Materials

Unlike the Project, the No Project Alternative would not demolish any structures or disturb the soil. Therefore, it would result in no impact relative to the potential release of hazardous materials. Under the No Project Alternative, because there would be no construction, construction workers would not be exposed to potential risks from contaminated soil or groundwater. Unlike the Project, operation at the site would not include routine hazardous materials use and related maintenance activities because the existing buildings would remain vacant. As with the Project, the No Project Alternative would not expose employees or structures to wildland fires, airport hazards, or onsite hazardous materials, pursuant to Government Code Section 65062.5. Accordingly, there would be no impact. The No Project Alternative would not add traffic to the area and, therefore, would not impair emergency access and emergency plans. The potential for stormwater to infiltrate to groundwater where it could affect flow characteristics would remain. This could, in turn, interfere with the groundwater remediation system. Contaminated groundwater could flow into the BMPs, from which treated stormwater would flow to the storm drain system, resulting in possible inadvertent off-site contamination of stormwater. This is a greater impact than that of the Project. Nonetheless, because this is an existing condition, the No Project Alternative would result in no impact. (NI)

Population and Housing

The No Project Alternative would result in no increase in housing or employment levels at the Project site over existing conditions. Accordingly, the No Project Alternative would not result in a demand for new housing units within the City or proximate local jurisdictions. The No Project Alternative would avoid any population growth, resulting in no impact. (NI)

Public Services

Under the No Project Alternative, there would be no increase in the number of employees onsite compared with existing conditions that could result in increased demand for police, fire protection, emergency services, and recreational facilities. As discussed above, the No Project Alternative would not increase the population and housing demand within the City. Accordingly, the No Project Alternative would not increase the demand for schools or library services. The No Project Alternative would have no impact on public services. (NI)

Utilities and Service Systems

The No Project Alternative would not change the existing use at the Project site. Utilities at the Project site would continue to serve the existing buildings. As no additional employees would be added to the Project site, and the Project site is currently vacant, the No Project Alternative would not demand any additional utilities compared to existing conditions. Compared to the Project, the No Project Alternative would avoid the Project's less-than-significant impacts on water supply, water treatment, wastewater treatment, solid waste disposal, and stormwater drainage facilities. (NI)

Reduced Intensity Alternative

As described above, the Reduced Intensity Alternative would include a 30 percent reduction in the amount of office floor area and number of office employees. This would equate to approximately 673,680 gsf of office building area and approximately 4,630 employees (4,480 Facebook employees and 150 hotel employees). As with the Project, the Reduced Intensity Alternative would include offices and a hotel. Maximum building height would be 75 feet, the same as the Project. The site plan of the Reduced Intensity Alternative would be similar to the Project, with similar building footprints. Because the building footprints would be very similar, all footprint-based impacts would be the same as or less than the impacts of the Project, as explained below.

Land Use

As with the Project, the Reduced Intensity Alternative would not result in impacts related to division of an established community or impacts on an adopted habitat conservation plan or natural community conservation plan.

Conflicts with Adopted Land Use Plans and Policies. Similar to the Project, the Reduced Intensity Alternative would require a conditional development permit and rezoning to establish a new height limit. The maximum proposed building height under this alternative, 75 feet, would be the same as under the Project. The proposed new conditional development permit and rezoning to M-2(X) would allow the Reduced Intensity Alternative to be consistent with the Zoning Ordinance, resulting in less-than-significant impacts. This zoning, as currently defined, does not permit hotels. The proposed amendment to the Zoning Ordinance by the Project Sponsor to accommodate the proposed hotel would allow the Reduced Intensity Alternative, similar to the Project, to be consistent with the Zoning Ordinance, resulting in less-than-significant impacts. In addition, as with the Project, the Reduced Intensity Alternative would be generally consistent with the General Plan. The Reduced Intensity Alternative would enhance the Project site by installing extensive landscaping, a publicly accessible open space, and a terraced garden for employee use (consistent with General Plan policies that involve use of landscaping or designation of land for public use to achieve green urban spaces); a bicycle/pedestrian path (consistent with policies that involve designation of bicycle and/or pedestrian paths in areas of heavy non-vehicular use), and implementing a daily trip cap and a TDM program (consistent with policies designed to reduce traffic or GHG emissions or improve community amenities).

The Reduced Intensity Alternative would also be consistent with regional plans. Plan Bay Area calls for development to be placed near active transit corridors. Consistent with Plan Bay Area, in the absence of nearby transit corridors, the Reduced Intensity Alternative, similar to the Project, includes a TDM program to encourage use of alternate forms of transportation. The bicycle/pedestrian path would be compatible with ABAG Bay Trail Plan and Design Guidelines because it would enhance access from a neighborhood—the Belle Haven neighborhood—to the Bay Trail. Because the Reduced Intensity Alternative would result in fewer vehicle trips than the Project, this alternative would be generally consistent with the C/CAG Congestion Management Plan. (LTS)

Cumulative Impacts. Consistency with land use plans and policies is inherently a project-specific issue, and each jurisdiction would decide on Project consistency on the project level. As such, there would be a less-than-significant cumulative impact as a result of cumulative development in the ABAG region under the Reduced Intensity Alternative. (LTS)

Aesthetics

As with the Project, the Reduced Intensity Alternative would not damage scenic resources within a State Scenic Highway corridor.

Impacts on Scenic Vistas. As with the Project, the Reduced Intensity Alternative would result in additional height, bulk, and massing from the proposed buildings and the multi-use bicycle/pedestrian bridge, which would add a new visual element to the setting. However, as the Reduced Intensity Alternative would add approximately 30 percent less office building area than the Project, the bulk and massing of the alternative would be slightly less. The increased development of the Reduced Intensity Alternative would represent a small portion of the overall vista, as viewed from the BCDC Public Shoreline Trail, Bay Trail, and Bayfront Park. Furthermore, the increased development would not substantially obstruct views of the Santa Cruz Mountain Range. Therefore, the change in scenic views would not result in a significant impact because sensitive viewer locations primarily face away from the site and, therefore, would not be affected. Because the Reduced Intensity Alternative would have less building massing than the Project, and therefore less of an impact, the Reduced Intensity Alternative would also have a less-than-significant impact on scenic vistas. (LTS)

Degradation of Visual Character or Quality. The Reduced Intensity Alternative would slightly increase the total building area beyond existing conditions, resulting in a total building area of 848,480 gsf compared with 1,137,200 gsf under the Project. The maximum building height would be the same under this alternative as under the Project. Therefore, under the Reduced Intensity Alternative, the buildings would be more visible to surrounding uses than under existing conditions, similar to the Project. However, the proposed development would increase unity with its surroundings by constructing buildings that would reflect a similar architectural design. Further, similar to the Project, the Reduced Intensity Alternative would promote the transition of the area to office campuses by creating contiguous landscaped areas and providing bicycle and pedestrian connections. The Reduced Intensity Alternative would introduce a publicly accessible open space that would connect the adjacent Belle Haven neighborhood, the Campus, and the bicycle/pedestrian bridge, which would have connections to the Bay Trail and Bayfront Park. The alternative would also introduce buildings with a similar architectural design. Although the Reduced Intensity Alternative would increase onsite building height and massing compared with existing conditions, similar to the Project, this alternative would not significantly alter or degrade the visual character or quality of the site and its surroundings or the public view corridors in the area, resulting in a less-than-significant impact. (LTS)

New Sources of Light and Glare. As with the Project, the Reduced Intensity Alternative would add exterior lighting to an area that is not currently a significant source of nighttime lighting. Lighting used during construction would include occasional extended work hours with generator light towers. In addition, proposed development at the Project site would result in nighttime light from vehicles, interior circulation areas, parking lots, buildings, rooftop decks, and security features. Lighting could be a nuisance or distraction to motorists on Bayfront Expressway and Chilco Street and could affect residents in the Belle Haven neighborhood. Although lighting under the Reduced Intensity Alternative would be designed to standards, the increase in onsite activity and building heights would result in a potentially significant increase in lighting in the area. Implementation of Mitigation Measure AES-3.1, as required for the Project, specifies measures to ensure that lighting meets minimum safety and security standards, reducing the impacts to less than significant.

As with the Project, the Reduced Intensity Alternative would introduce new sources of glare to the Project site. With implementation of the Project, highly reflective surfaces at the Project site could pose the most significant impacts along major road corridors, such as Bayfront Expressway and Chilco Street.

Because building material specifics of the Reduced Intensity Alternative are currently unknown, it is conservatively assumed that the Project would result in potentially significant glare impacts. Mitigation Measure AES-3.2, which is required for the Project, would treat reflective surfaces, resulting in less-than-significant impacts. (LTS/M)

New Sources of Shadow. As with the Project, the Reduced Intensity Alternative would increase the maximum building height at the site to 75 feet. No offsite public parks, open space areas, or private residences would be affected by shadows that would be cast by the proposed office buildings. The only shadows that would be cast offsite by the Project would be toward a small portion of the Bayfront Expressway and the Bay Trail around the winter solstice. Impacts on Bayfront Expressway would be less than significant because the shadows would be noticeable by motorists for only a few seconds. During all other seasons, shadows from the proposed buildings would be restricted to the Project site. Like the Project, the impact from the Reduced Intensity Alternative is less than significant. (LTS)

Cumulative Impacts. The Reduced Intensity Alternative would not contribute to any cumulative impacts associated with visual resources. Although the Reduced Intensity Alternative and the nearby large-scale Menlo Gateway Project would add height, bulk, and massing in the Project vicinity, this change would not result in a significant impact on a scenic vista or the visual character of the vicinity. While there is potential for the Reduced Intensity Alternative and other planned and foreseeable projects to be large enough to contribute to a cumulative lighting impact, this alternative and the other projects would all involve redevelopment of urban sites that already generate light and glare, and the land uses proposed are not anticipated to be light intensive. Further, development of the projects is not anticipated to significantly increase nighttime lighting and glare conditions in the area. As discussed above, shadows from the Reduced Intensity Alternative would extend over a small geographic area. Although shadows from cumulative projects would not overlap with shadows from the Reduced Intensity Alternative, there would be a small overall increase in shadow as a result of the alternative. (LTS)

Transportation/Traffic

The Reduced Intensity Alternative would include a 27 percent reduction in the unmitigated Project daily vehicle trip cap, as proposed by the Project Sponsor and based on a commensurate reduction in the number of employees. During the a.m. and p.m. peak hours, net vehicle trip generation would vary.

If the Reduced Intensity Alternative were to include a peak period trip cap modeled after the Project (without Mitigation Measure TRA-1.2, which reduces the peak-hour share of allowable vehicle trips under the Project), then the Reduced Intensity Alternative would result in a net increase of 1,275 a.m. and 959 p.m. peak-hour vehicle trips. However, significant and unavoidable peak hour traffic impacts would still be anticipated without Mitigation Measure TRA-1.2.

If the Reduced Intensity Alternative were to include Mitigation Measure TRA-1.2, which reduces the allowable share of daily vehicle trips to Buildings 10-19 and the Project site (including Building 20) that may occur during a single peak hour, then the Reduced Intensity Alternative would generate substantially fewer vehicle trips. With Mitigation Measure TRA-1.2, the Reduced Intensity Alternative would result in a net increase of 20 vehicle trips during the a.m. peak hour, and a net reduction of 295 vehicle trips during the p.m. peak hour, compared to the No Project Alternative.

Because the analysis of Project impacts was based on inclusion of Mitigation Measure TRA-1.2, the comparison of the Project with the Reduced Intensity Alternative is based on inclusion of Mitigation Measure TRA-1.2. Therefore:

- During the a.m. and p.m. peak hours, the Reduced Intensity Alternative with Mitigation Measure TRA-1.2 would result in increased traffic peak-hour entrances at the site entrances from Chilco Street and Bayfront Expressway, but impacts would be less than significant with the mitigations identified for the Project at those locations. At off-site intersections, the alternative would result in traffic conditions consistent with the No Project Alternative. Peak hour traffic impacts to study intersections would, therefore, be reduced to less-than-significant levels with the Reduced Development Alternative, incorporating Mitigation Measure TRA-1.2 and the same site-specific access mitigations as identified for the Project. (LTS)
- During the a.m. and p.m. peak hours, the Reduced Intensity Alternative with Mitigation Measure TRA-1.2 would reduce peak hour impacts to regional routes of significance to less than significant. (LTS)
- During the a.m. and p.m. peak hours, the Reduced Intensity Alternative with Mitigation Measure TRA-1.2 would not result in significant cumulative impacts under Year 2040 conditions. (LTS)
- The Reduced Intensity Alternative with Mitigation Measure TRA-1.2 would not be anticipated to result in increased delay to AC Transit Dumbarton transit service, since the alternative would not result in an increase in net off-site traffic volumes on Bayfront Expressway compared to the No Project Alternative, therefore resulting in a less-than-significant impact on transit delay. (LTS)
- Daily traffic volumes under the Reduced Intensity Alternative would still result in significant and unavoidable impacts to roadway segments. However, the net increase in daily vehicle trips would be reduced by 27 percent in comparison with the Project. (SU)
- Daily traffic volumes under the Reduced Intensity Alternative would still result in significant and unavoidable cumulative impacts to roadway segments under Year 2040 conditions. However, the net increase in daily vehicle trips would be reduced by 27 percent in comparison with the Project. (SU)

Table 5-2 provides a comparison of vehicle trip generation under the Project and Reduced Intensity Alternative (both with and without Mitigation Measure TRA-1.2), and with the No Project Alternative.

Table 5-2. Vehicle Trip Comparison of the Project Alternatives

Alternatives	A.M. Peak Hour	P.M. Peak Hour	Daily
Total Vehicle Trips Generated by Each Alternative at Buildings 10–19, 20, 21, 22, 23, and Hotel			
Project	4,920	4,920	41,457
Project (with Mitigation TRA-1.2[a])	3,555	3,555	41,457
No Project Alternative	3,117	3,432	25,128
Reduced Development Alternative	4,391	4,391	37,127
Reduced Development Alternative (with Mitigation TRA-1.2[a])	3,137	3,137	37,127
Net Vehicle Trip Generation over No Project Alternative without Trip Cap Mitigation TRA-1.2[a]			
Project	**1,803**	**1,488**	**16,329**
Reduced Development Alternative	**1,274**	**959**	**11,999**
Net Vehicle Trip Generation over No Project Alternative with Trip Cap Mitigation TRA-1.2[a]			
Project + Mitigation TRA-1.2[a]	**438**	**123**	**16,329**
Reduced Development Alternative + Mitigation TRA-1.2[a]	**20**	**-295**	**11,999**

Source: TJKM, 2016.

[a.] Mitigation TRA-1.2 requires a reduction in peak-hour vehicle trips at Buildings 10–23.

Air Quality

Conflict with Air Quality Plan. The proposed development under both the Project and the Reduced Intensity Alternative would not conflict with the existing land use designation, would be consistent with the City's General Plan, and would not result in an increase in City population that exceeds ABAG projections. Similar to the Project, the Reduced Intensity Alternative would be consistent with the BAAQMD's 2010 Climate Action Plan (CAP) strategies. Therefore, impacts are considered less than significant. (LTS)

Construction Criteria Air Pollutant Emissions. The Reduced Intensity Alternative would result in a 30 percent reduction in office floor area and number of employees, which would likely result in a shorter construction period. However, in order to maintain a shorter construction period, it is likely that the daily construction activities under the Reduced Intensity Alternative would be similar to the Project. Therefore, daily construction emissions generated by the alternative would likely be similar to the Project. The daily construction emissions from operation of onsite construction equipment and on-road vehicles under the Project would be below the BAAQMD's significance thresholds for reactive organic gas (ROG), nitrogen oxides (NO_X), carbon monoxide (CO), and particulate matter (PM10 or PM2.5); therefore, the Reduced Intensity Alternative would not exceed any of the BAAQMD thresholds. Regardless, as required by the BAAQMD, Mitigation Measure AQ-2.1, as proposed for the Project, would be implemented to reduced PM10 and PM2.5 fugitive dust emissions. With the implementation of these mitigation measures, this impact would be less than significant. (LTS/M)

Operational Criteria Air Pollutant Emissions. Both Project and Reduced Intensity Alternative operation have the potential to create air quality impacts, primarily associated with direct emissions from mobile sources. Motor vehicle traffic would include daily employee trips, visitor trips, shuttle and vanpool trips, and contractor, vendor, and delivery trucks. Because the Reduced Intensity Alternative would result in fewer vehicle trips due to the reduction in office floor area and employees, the operational air quality impacts would be reduced. Given that the Reduced Intensity Alternative would

result in approximately 30 percent fewer employees than the Project, it is highly likely that such a reduction in the number of employees and corresponding vehicle miles traveled would result in NO_X emissions that would not exceed the BAAQMD threshold. This impact would be less-than-significant and Mitigation Measure AQ-2.2, as required for the Project, would not need to be implemented. (LTS)

Exposure of Existing Sensitive Receptors to Substantial Pollutant Concentrations During Construction. Diesel-fueled engines, which generate diesel particulate matter (DPM), would be used during construction of the Reduced Intensity Alternative, similar to the Project. Multiple sensitive receptors are located within 1,000 feet of the Project site, including single-family residences, a playground, and a school (see Table 3.4-4 in Section 3.4, *Air Quality*). Project construction would not result in any significant increases in the non-cancer hazard index, cancer risk, or annual PM2.5 concentrations at residential, recreational, or school receptors within 1,000 feet of the Project site. The Reduced Intensity Alternative would result in a reduction in office floor area compared with the Project; however, as discussed above, daily construction activity would very likely be comparable to that of the Project. Consequently, the Reduced Intensity Alternative's PM2.5 concentration, hazard index, and cancer risks would be similar to those of the Project but below the applicable thresholds with implementation of Mitigation Measure AQ-2.1, which would be required by the BAAQMD. This impact would be less than significant. (LTS)

Exposure of Existing Sensitive Receptors to Substantial Pollutant Concentrations from Project Operation. Traffic generated by the Project would have the potential to create CO hotspots at nearby roadways and intersections. However, since the Reduced Intensity Alternative would generate less traffic than the Project, the CO emissions would not be as significant. Regardless, for both the Project and the Reduced Intensity Alternative, CO concentrations are not expected to contribute to any new localized violations of the 1-hour or 8-hour ambient air quality standards, resulting in less-than-significant impacts. (LTS)

Create Objectionable Odors. Potential odor sources during construction include diesel exhaust from heavy-duty equipment. Construction-related operations near existing receptors would be temporary in nature, and construction activities would not be likely to result in nuisance odors that would violate BAAQMD Regulation 7 (Odorous Substances). Potential odor sources from operation of the Reduced Intensity Alternative would include diesel exhaust from landscaping equipment and emergency generators during routine maintenance. The odor impacts during operation would be limited and infrequent. The potential recycled water facility would not create odors. Because there would be no change in land use under the Reduced Intensity Alternative compared to the Project, the same less-than-significant impacts would occur. (LTS)

Cumulative Impacts. For the reasons described above, the Reduced Intensity Alternative, in combination with other development in the city, would not conflict with or obstruct implementation of the applicable air quality plan and would not result in a cumulatively significant impact. Additionally, the Reduced Intensity Alternative, in combination with other development within the city, would be consistent with the Ozone Attainment Plan and the Clean Air Plan. This would be a less-than-significant cumulative impact. (LTS)

As discussed above, the Reduced Intensity Alternative would not exceed the project- and cumulative-level BAAQMD thresholds for any pollutants during construction. Operational emissions of NO_X would exceed the BAAQMD threshold but would be offset, however, through mitigation; these emissions would not be cumulatively considerable. Further, cumulative PM2.5 concentrations, hazard index, and cancer risks associated with Project construction would not exceed the applicable BAAQMD cumulative

thresholds. As discussed above, the Reduced Intensity Alternative would result in construction emissions and impacts that would be comparable to those of the Project. Thus, PM2.5 concentrations, hazard index, and cancer risks would be comparable under this alternative and, thus, below the applicable thresholds. Consequently, the cumulative impact of health risks on sensitive receptors would be less than significant. (LTS)

Greenhouse Gas Emissions

GHG Emissions during Project Construction. Construction of the Reduced Intensity Alternative would generate emissions of carbon dioxide (CO_2), methane (CH_4), and nitrogen oxides (NOx) from mobile and stationary construction equipment exhaust, and employee and haul truck vehicle exhaust. Although the construction period could be shorter for this alternative due to less building area, the intensity of construction activities at a given time would be similar to the Project. BAAQMD's CEQA Guidelines do not recommend a GHG emission threshold for construction-related emissions; therefore, construction of the Reduced Intensity Alternative would not exceed thresholds. However, the Guidelines recommend implementation of BMPs to help control and reduce GHG emissions. Therefore, the construction of the Reduced Intensity Alternative is considered less than significant with implementation of Mitigation Measure GHG-1.1. (LTS/M)

GHG Emissions during Project Operation. Operation of the Reduced Intensity Alternative would generate fewer direct and indirect GHG emissions than the Project due to a decrease in building area and employees. Therefore, this alternative would result in fewer vehicle trips, and less electricity generation and consumption, waste and wastewater generation, and water use. However, the Reduced Intensity Alternative would still generate an increase in direct and indirect GHG emissions compared with existing conditions; however, there would be a 30 percent reduction in the number of employees, which would have an appreciable effect on GHG emissions. Regardless, the Reduced Intensity Alternative, similar to the Project, would be well below the BAAQMD efficiency threshold for GHGs. Thus, the Reduced Intensity Alternative would result in less-than-significant impacts. (LTS)

Conflicts with Applicable GHG Emission Plans, Policies, and Regulations. Because the Reduced Intensity Alternative would not exceed the BAAQMD efficiency threshold, this alternative would not pose any explicit conflict with the AB 32 Scoping Plan to reduce GHG emissions to 1990 levels by 2020 or the City's Climate Action Plan. The Reduced Intensity Alternative, similar to the Project, would also be below the 2030 "Substantial Progress" efficiency metric and would implement several GHG reduction measures. However, the Reduced Intensity Alternative could be inconsistent with the long-term goals specified in EO S-3-05 because the degree of future action at the state and federal level cannot be known at this time. Therefore, it is conservatively assumed that the Reduced Intensity Alternative's impact relative to conflicts with applicable plans and policies would be significant and unavoidable only with respect to the long-term goal specified in EO S-3-05. (SU)

Noise

As with the Project, the Reduced Intensity Alternative would have no impacts related to adjacency to airports.

Exposure to Excessive Noise Levels. The Reduced Intensity Alternative would expose persons to or generate noise levels in excess of standards established in the General Plan, noise ordinance, or applicable standards.

Construction. As with the Project, construction of the Reduced Intensity Alternative would require the use of heavy equipment that would temporarily increase noise levels at properties near the work sites. Although the Reduced Intensity Alternative would result in less building area and, therefore, potentially shorter construction periods, noise levels at a given time during construction would be similar to the levels expected under the Project. Construction work hours for the Reduced Intensity Alternative would likely be comparable to those of the Project, extending from 7:00 a.m. to 7:00 p.m. Monday through Friday. The Reduced Intensity Alternative, one hour of construction activity in the morning and one hour in the evening would not be covered by the exemption in the Noise Ordinance, and construction activities during these times would need to comply with the 60 dBA standard. As discussed for the Project construction impact assessment, construction noise is expected to exceed the 60 dBA L_{eq} limit (during the two hours per day that this standard applies) at residential properties within 1,200 feet. Further, during the exempted hours for construction activity, the loudest equipment piece (a pile driver) could generate noise levels of up to 94 dBA L_{eq} at a distance of 50 feet, which is in excess of the Menlo Park 85 dBA limit for powered equipment at 50 feet during the hours between 8:00 a.m. and 6:00 p.m. Therefore, as noise from the construction of the Reduced Intensity Alternative could exceed the 85 dBA limit at 50 feet between the hours of 8:00 a.m. and 6:00 p.m., and could be in excess of the 60 dBA L_{eq} threshold that would apply outside of these exempted hours, this impact would be potentially significant. Implementation of Mitigation Measure NOI-1.1, as required for the Project, would reduce construction noise impacts of the Reduced Intensity Alternative to less than significant. (LTS/M)

Impacts on Offsite Uses. The Reduced Intensity Alternative would have the potential to increase noise on roadway segments in the vicinity of the Project site, although to a lesser extent than the Project due to the reduction in vehicle trips. However, only the segment of Chilco Street between Hamilton Avenue and Terminal Avenue (and only one receptor along this segment) could result in potentially significant traffic noise impacts under the Reduced Intensity Alternative. Traffic noise impacts at the one street-adjacent to outdoor use areas along this segment would be less than significant when accounting for distance to the receptor from the centerline of the roadway and for an existing privacy fence that functions as a noise barrier. As with the Project, this alternative would result in less-than-significant noise impacts on offsite sensitive receptors. (LTS)

Impacts on Onsite Uses. The Reduced Intensity Alternative would have the potential to increase noise levels along the roadway segment adjacent to the proposed onsite hotel, specifically Chilco Street between Constitution Drive and Bayfront Expressway. With implementation, noise levels at the future hotel site (including potential noise from Bayfront Expressway) would be conditionally compatible with the proposed onsite hotel. Because the Reduced Intensity Alternative would involve fewer employees, it would involve a correspondingly lower level of noise increase. As with the Project, noise levels would be within the conditionally acceptable noise range for hotel use with implementation of the Reduced Intensity Alternative, and this impact would be less than significant.

The potential exists for onsite outdoor use areas that face Bayfront Expressway (to which the Reduced Intensity Alternative would add some daily traffic) to be exposed to noise levels that would be in excess of the noise compatibility standard. Because the Reduced Intensity Alternative would involve fewer employees than the Project, it would involve a correspondingly lower level of noise increase. Conservatively assuming that all of the additional Project traffic would be traveling on Bayfront Expressway was determined to result in a maximum noise increase attributable to the Project of approximately 1 dB at the onsite outdoor use areas; the Reduced Intensity Alternative would contribute even less than this amount. Therefore, noise levels would still be below the normally acceptable standards for commercial and office outdoor use areas with implementation of the Reduced Intensity Alternative. This impact would be less than significant. (LTS)

General Onsite Activity. The Reduced Intensity Alternative would result in an increase in noise levels associated with employee and hotel guest activity compared to existing conditions. However, this increase would be less than the noise levels associated with the Project due to the decrease in employees and vehicle trips. The shortest distance between the outdoor areas of the Project site and the nearest sensitive land use is more than 250 feet. Human activity on the site would not exceed 60 dBA at the nearest noise-sensitive land use and would not exceed the Noise Ordinance limit for residential land uses or the City General Plan compatibility standard. As with the Project, the Reduced Intensity Alternative would result in a less-than-significant impact related on human activity onsite. (LTS)

Heating, Ventilation, and Air-Conditioning Systems. As with the Project, the new buildings associated with the Reduced Intensity Alternative would require heating, ventilation, and air-conditioning (HVAC) systems. The new HVAC systems may expose persons to noise in excess of the applicable nighttime noise standard. Impacts related to the use of HVAC systems would be potentially significant. However, Mitigation Measure NOI-1.2 would incorporate design measures that would limit noise to the applicable standard at the property line of applicable noise-sensitive receptors. (LTS/M)

Parking. The Reduced Intensity Alternative would include new parking surfaces and podium parking. Because the Reduced Intensity Alternative would involve fewer employees than the Project, it would involve a correspondingly lower level of noise increase. The noise impact related to parking structures is less than significant under the Project and similarly less than significant under the Reduced Intensity Alternative. (LTS)

Truck Pick-Ups and Deliveries. As with the Project, the Reduced Intensity Alternative would include a total of four loading docks. Because the Reduced Intensity Alternative would involve fewer employees and, therefore, correspondingly fewer deliveries, it would involve a correspondingly lower level of noise increase. Trucks are exempted from the City's short-term noise level limit of 60 dBA at residential land uses, provided the trucks do not idle for more than 10 minutes. State law currently prohibits heavy-duty diesel delivery trucks from idling more than 5 minutes. Additionally, given the short duration and relative infrequency of truck trips to the Project site, truck deliveries would not be a source of excessive ambient noise. As with the Project, under the Reduced Intensity Alternative, impacts related to truck deliveries would be less than significant. (LTS)

Emergency Generators. With the Reduced Intensity Alternative, stand-by emergency power generators would be installed to serve the buildings associated with the Project. Emergency generators create temporary and periodic noise from testing. The Reduced Intensity Alternative would generate the same noise level as the Project. The generators are not anticipated to be in use frequently because they are intended to be a backup or emergency power source; however, because they would be tested monthly, noise levels from generator testing could exceed the City's Noise Ordinance if a noise attenuation enclosure were not installed to surround the emergency generators. Accordingly, this impact is considered significant for both the Project and the Reduced Intensity Alternative. Mitigation Measure NOI-3.1 would require installation of sound enclosures around emergency generators. (LTS/M)

Recycled Water System. The Reduced Intensity Alternative could include a recycled water system, similar to the Project. The system would include constructed wetlands, a mechanical equipment room, primary tanks, and a headworks building. All pumps, the lift station, and other noise-generating equipment associated with the recycled water facility would be housed inside buildings. However, it is conservatively assumed that like the Project, the primary tanks and headworks buildings under the Reduced Intensity Alternative would be located in relatively close proximity to residences located to the south of the Project site. Although it is possible that noise levels would be reduced to less-than-

significant levels, based on the design of the building enclosures, the designs have not been finalized at this time. As such, the potential exists for noise from operation of these facilities to exceed the City's daytime and nighttime noise standards, resulting in significant impacts. However, implementation of Mitigation Measure NOI-1.5, as required for the Project, would reduce this impact to less than significant levels by ensuring that building structures that house mechanical equipment are designed to limit noise. (LTS/M)

Expose Persons to or Generate Excessive Ground-borne Vibration or Ground-borne Noise Levels. The operation of heavy construction equipment can generate localized ground-borne vibration and noise at buildings adjacent to the construction site. The Reduced Intensity Alternative would use pile driving exclusively to construct building foundations. In the worst-case scenario, ground-borne vibration levels would be below the damage threshold for the most fragile buildings and below the perceptibility threshold. Therefore, vibration disturbance during construction of the Reduced Intensity Alternative is not expected to damage buildings or be perceptible to people. Similar to the Project, this impact is considered to be less than significant. (LTS)

Substantial Permanent Increase in Ambient Noise Levels. As with the Project, the Reduced Intensity Alternative could result in a permanent increase in ambient noise levels in the Project vicinity. Because the Reduced Intensity Alternative would involve fewer employees, it would involve a correspondingly lower level of noise increase. However, traffic would increase compared to existing conditions, and associated noise levels along some road segments would increase as well. Noise from Project HVAC systems and onsite emergency generators may also result in a permanent increase in noise levels. Implementation of Mitigation Measure NOI-1.2, as required for the Project, would reduce impacts related to HVAC noise levels to less than significant at nearby receptors. Additionally, Mitigation Measures NOI-1.3 and NOI-1.4 would reduce impacts related to emergency generator noise to less than significant. Project-related traffic would not result in significant increases in ambient noise levels, and traffic added by the Reduced Intensity Alternative would be less than traffic added by the Project; the corresponding noise increases would therefore also be less. Because implementation of Mitigation Measures NOI-1.2, NOI-1.3, NOI-1.4, and NOI-1.5 would reduce impacts related to stationary-source noise levels to less than significant, and the Reduced Intensity Alternative would not result in direct traffic noise impacts on nearby receptors, the Reduced Intensity Alternative would not result in a substantial permanent increase in ambient noise levels; this impact would be less than significant with mitigation. (LTS/M)

Substantial Temporary or Periodic Increase in Ambient Noise Levels. The Reduced Intensity Alternative could result in temporary or periodic increases in ambient noises. Construction for the Project and for the Reduced Intensity Alternative could also result in noise levels that would exceed the 60 dBA L_{eq} threshold that applies when construction noise is not exempted from the general noise limitations (specifically, 7:00 a.m. to 8:00 a.m. and from 6:00 p.m. to 7:00 p.m.). Mitigation Measure NOI-1.1, as required for the Project, would require noise control measures to be implemented during construction to reduce noise to less-than-significant levels. Emergency power generators that would be located in several buildings could result in noise that would exceed Menlo Park noise levels for sensitive receptors. Implementation of Mitigation Measures NOI-1.3 and NOI-1.4 would reduce impacts to less-than-significant levels for both the Project and for the Reduced Intensity Alternative. (LTS/M)

Cumulative Impacts. The Reduced Intensity Alternative would result in the same or slightly fewer cumulative noise impacts as the Project. Cumulative exposure to excessive noise would result in less than cumulatively considerable impacts with implementation of Mitigation Measure NOI-1.1. Impacts related to cumulative exposure to ground-borne vibration, cumulative permanent increase in noise

levels, and cumulative temporary increase in noise levels would be less than cumulatively considerable for the Project. Accordingly, the Reduced Intensity Alternative would also result in less than cumulatively considerable impacts. (LTS/M)

Cultural Resources

Impacts on Historic Resources. The Reduced Intensity Alternative would demolish the existing Buildings 301–306 at the Project site. However, as with the Project, the Reduced Intensity Alternative would not cause a substantial adverse change in the significance of a historic resource because none of the existing structures are considered historic resources. Therefore, like the Project, the Reduced Intensity Alternative would result in a less-than-significant impact on historic resources. (LTS)

Impacts on Archaeological Resources. Although no archaeological resources were identified in or adjacent to the Project site, three prehistoric sites have been recorded within 0.5 mile of the Project site. Accordingly, due to ground-disturbing activities during construction, the Reduced Intensity Alternative has the potential to encounter previously undiscovered archaeological resources during construction. However, as with the Project, implementation of Mitigation Measure CUL-2.1 would reduce the impact to less than significant. (LTS/M)

Impacts on Paleontological Resources. The Reduced Intensity Alternative has the potential to directly or indirectly destroy a unique paleontological resource or site or unique geologic feature. Impacts on paleontological resources would depend on the depth, extent, and type of soil-disturbing activities that may occur as a result of construction, as well as the paleontological sensitivity of the materials underlying the Project site. Construction activities under the Reduced Intensity Alternative would be similar to the Project. As such, this alternative could expose undisturbed deposits that may contain fossils, resulting in a potentially significant impact. However, Mitigation Measure CUL-3.1, as required for the Project, would reduce this impact to less than significant. (LTS/M)

Impacts on Human Remains. Although the Northwest Information Center background records search did not identify any human remains in or adjacent to the Project site, three prehistoric sites have been identified within 0.5 mile of the Project site. Therefore, the potential may exist for previously undiscovered human remains to be encountered during construction of the Reduced Intensity Alternative. However, Mitigation Measure CUL-4.1 would reduce the impact to less than significant. (LTS/M)

Cumulative Impacts. Because the existing buildings at the Project site are not considered historic resources, the Reduced Intensity Alternative would not contribute to any potential cumulative impact on historical resources. Given that known prehistoric resources have been identified within 0.5 mile of the Project site, there is the possibility that previously undiscovered archaeological resources, paleontological resources, and human remains could be encountered during construction. For this reason, the cumulative effects of all development on these resources are considered potentially significant. However, compliance with Mitigation Measures CUL-2.1, CUL-3.1, and CUL-4.1, as required for the Project, would reduce the Reduced Intensity Alternative's contribution to the cumulative impact to less than cumulatively considerable, similar to the impacts for the Project. (LTS)

Biological Resources

The Reduced Intensity Alternative would not result in a loss of riparian habitat, sensitive natural communities, or wetlands and would not conflict with any adopted habitat conservation plans.

Direct Impacts on Special-Status Species. Hoary bats are the only mammal species that could occur in the vicinity of the Project site. Because the Reduced Intensity Alternative would have a similar building footprint as the Project, the same number of trees would likely be removed. However, the Reduced Intensity Alternative would plant trees to offset the removal of heritage trees. In addition, the Reduced Intensity Alternative would demolish Buildings 301–306. Although the likelihood of occurrence is quite low, the removal of trees and the removal, or modification, of buildings containing active bat roosts, particularly during the nesting season (typically April through August), could result in a loss of individual bats, bat colonies, or their habitat. However, implementation of Mitigation Measure BIO-1.1, which would be implemented under the Project, would identify and protect roosting and breeding bats on the Project site, reducing the potentially significant impact to less than significant. The same impacts would occur with implementation of the Reduced Intensity Alternative as under the Project. (LTS/M)

Indirect Impacts on Special-Status Species. The three proposed buildings, new trees, the publicly accessible open space, and the bicycle/pedestrian bridge over Bayfront Expressway could serve as new or additional perching or nesting opportunities. These new features at the Project site could increase predation by raptors or other predatory birds on special-status species in the nearby salt marshes. However, implementation of Mitigation Measure BIO-2.1, as required for the Project, would install bird perching deterrents on all new buildings and other elevated structures, including the bicycle/pedestrian bridge, protecting special-status species from increased predation on the Project site. As with the Project, the Reduced Intensity Alternative would result in less-than-significant impacts on special-status species with implementation of this mitigation measure. (LTS/M)

Impacts on Native Wildlife Nursery Sites. Existing shrubs and trees on the Project site could provide nesting habitat for a variety of native migratory birds. With implementation of the Reduced Intensity Alternative, Buildings 301–306 would be demolished, existing landscaping removed, and the site would be developed with new buildings and landscaping. If nesting migratory birds are present (i.e., nests containing eggs or youths), tree and shrub removal associated with the redevelopment of the Project site could result in the loss of those birds caused by the direct mortality of adult or young birds, nest destruction, or disturbance of nesting native migratory bird species. However, implementation of Mitigation Measure BIO-3.1, which would be implemented for the Project, would require preconstruction surveys for nesting migratory birds. Implementation of Mitigation Measure BIO-3.2 would require that bird-safe design standards be incorporated into Project buildings and lighting design. As with the Project, the Reduced Intensity Alternative would result in less-than-significant impacts with implementation of this mitigation measure. (LTS/M)

Conflicts with any Local Policies or Ordinances that Protect Biological Resources. It is assumed that the Reduced Intensity Alternative would remove all of the existing trees at the Project site, several of which qualify as heritage trees under the City's Heritage Tree Ordinance. Removal of these trees would require adherence to the City's Municipal Code and the Heritage Tree Ordinance. Therefore, the Reduced Intensity Alternative would not conflict with any local policies protecting biological resources and would result in the same less-than-significant impacts as the Project. (LTS)

Cumulative Impacts. As discussed in Section 3.14, *Biological Resources*, cumulative impacts with respect to biological resources would be less than significant with the implementation of Mitigation Measures BIO-1.1, BIO-2.1, BIO-3.1, and BIO-3.2. Because this alternative would involve the same amount of tree removal, building demolition, and a similar building footprint impacts as the Project, the same less than cumulatively considerable impacts would occur. (LTS)

Geology and Soils

As with the Project, the Reduced Intensity Alternative would not result in impacts related to loss of topsoil, impacts on septic systems, fault rupture, landslide, or lateral spreading.

Strong Seismic Ground Shaking and Seismic-Related Ground Failure. The Reduced Intensity Alternative would construct two office buildings and a hotel totaling approximately 848,480 gsf. This new development would expose approximately 4,630 new workers to ground shaking. The risks to public safety from seismic hazards can be mitigated to the extent required by law with implementation of the proper design and construction methods, which would be within the responsibility of the City and the Project Sponsor to monitor and enforce through its building permit process. In addition, the City, along with other Bay Area jurisdictions, participates in a coordinated planning and emergency response program, and has its own Emergency Operation Plan to respond to natural disasters. Consequently, the Reduced Intensity Alternative, as with the Project, would not have a significant adverse impact with regard to exposure of people or structures to damage resulting from seismic ground shaking or liquefaction-related hazards. Therefore, impacts are considered less than significant. (LTS)

Soil Erosion. The Project site is nearly level and would not involve development on hillsides that would involve cut-and-fill. Thus, development of the Reduced Intensity Alternative would not result in topographic changes that could alter erosion potential. However, development of the Project site under the Reduced Intensity Alternative would involve grading to construct building foundations and trenching for utility installations. Some minor modifications to allow additional roadway access points would also be implemented. These construction activities could temporarily expose soils to erosive effects from stormwater runoff. Similar to the Project, compliance with City requirements and the California Building Code (CBC), which are within the authority of the City to enforce and monitor, would ensure that erosion impacts resulting from Project construction would be less than significant. (LTS)

Soil Hazards. Adherence to the soil and foundation support parameters of the City Building Code, as required by City and State law, would ensure the maximum practicable protection available from soil failures under static or dynamic conditions for structures and their associated trenches and foundations. With implementation of the Reduced Intensity Alternative, the Project Sponsor would be required to incorporate these recommendations into Project design. Therefore, as with the Project, hazards related to unstable geologic or soil units (subsidence and collapse) are considered less than significant. (LTS)

Expansive Soil. The preliminary geotechnical investigation for the Project site indicates that soils are expected to have a high shrink-swell potential. Structural damage, warping, and cracking of roads, driveways, parking areas, and sidewalks, and rupture of utility lines may occur if the potential for expansive soils and the nature of the imported fill are not considered during design and construction of the Reduced Intensity Alternative. Adherence to the soil and foundation support parameters of the City Building Code would ensure the maximum practicable protection available from soil failures under static or dynamic conditions for structures and their associated trenches and foundations. Therefore, similar to the Project, the Reduced Intensity Alternative would result in less-than-significant impacts related to expansive soils. (LTS)

Cumulative Impacts. Soil and geologic conditions are site-specific and there is little, if any, cumulative relationship between the Project site and other areas in the City. Accordingly, the potential for cumulative impacts to occur is geographically limited for many geology and soils impact analyses. The Reduced Intensity Alternative would have a less-than-significant potential to cause cumulatively

substantial erosion or siltation. Construction and operational activities embodied in the Reduced Intensity Alternative would be subject to the same regulations as the Project. Consequently, cumulative impacts would be less than significant. (LTS)

Hydrology and Water Quality

As with the Project, the Reduced Intensity Alternative would not substantially degrade water quality and would not have any impacts related to flooding by seiche, tsunami mudflow, or dam failure inundation.

Violation of Water Quality Standards or Waste Discharge Requirements. Implementation of the Reduced Intensity Alternative would include construction activities, which would disturb land and place stockpiles within proximity to storm drain inlets. This could result a temporary increase in sediment loads to the Lower San Francisco Bay. Sediment transport to local drainage facilities could also result in reduced storm flow capacity, resulting in localized ponding or flooding during storm events. All construction activities would be subject to existing regulatory requirements. All construction activities would comply with the General Construction Permit from the San Francisco Bay Regional Water Board, which contains standards to ensure that water quality is not degraded. Because the Reduced Intensity Alternative, similar to the Project, would be in compliance with the General Construction Permit, local stormwater ordinances, and other related requirements, potential water quality impacts during construction would be less than significant. Mitigation Measure WQ-1.1, as required for the Project, would be implemented during construction dewatering if necessary and would ensure that potential impacts related to water quality would be reduced to a less-than-significant level.

Stormwater treatment areas would be located throughout the Project site in order to limit stormwater runoff and provide for biotreatment of contaminants. In addition, the Reduced Intensity Alternative would result in increased pervious surfaces over existing conditions and the Project, as well as buildings with green roofs and terraces. Because less parking would be required with this alternative compared to the Project due to a decrease in building area and vehicle trips, these paved surfaces under the Project would instead consist of pervious landscaped areas. Accordingly, the Reduced Intensity Alternative would result in a net decrease in the amount of runoff leaving the Project site and thus, a reduced volume of potential contaminated runoff. The Reduced Intensity Alternative, as with the Project, would be in compliance with the San Francisco Bay Region MS4 Permit, San Mateo Countywide Stormwater Pollution Prevention Program, and local stormwater ordinances. Therefore, potential water quality impacts would be less than significant. (LTS/M)

Effects on Groundwater Supplies and Recharge. The majority of the water supplied to the Project site is from surface water sources, and this would not change during or following implementation of the Reduced Intensity Alternative. Although construction of this alternative may require dewatering, such activities would be conducted on a one-time or temporary basis during the construction phase and would not result in a loss of quantities of water that would deplete groundwater supplies. The Reduced Intensity Alternative would increase pervious service area; therefore, an increase in groundwater recharge would occur. However, the Reduced Intensity Alternative would include slightly more pervious surfaces than the Project because less parking would be required, furthering the groundwater recharge potential. Therefore, effects of the Reduced Intensity Alternative on groundwater supplies and recharge would result in a less-than-significant impact, like the Project. (LTS)

Changes to the Existing Drainage Patterns. Construction activities under the Reduced Intensity Alternative would temporarily alter existing drainage patterns and could result in local (onsite) and temporary erosion and siltation. However, the Reduced Intensity Alternative would include a

stormwater pollution prevention plan (SWPPP) to minimize the potential for erosion and sedimentation in nearby storm drains during construction. Although drainage patterns on the Project site would be altered, drainage would ultimately be improved because implementation of the Reduced Intensity Alternative would increase the pervious area in comparison to both existing conditions and Project conditions. The increased pervious area would correspondingly reduce runoff volumes and the potential for ponding and other drainage issues onsite. In addition to increased pervious area, surface runoff from the Project site would be collected into a combination of new and existing storm drain inlets and pipes, and a portion required for stormwater treatment would be directed to pumps, which would ultimately be pumped to the biotreatment areas located throughout the site. Further, in order to accommodate existing stormwater flows that overwhelm the system and the increased stormwater flows, the Project Sponsor would upsize the existing pipes in the area and ensure that the onsite system is adequate with respect to conveying stormwater in the event of a 100-year storm. The Reduced Intensity Alternative would have its own private stormwater drainage system. Also, because of the decrease in impervious surface area under the Reduced Intensity Alternative relative to existing conditions, there would be a reduced potential for erosion and siltation in the drainage systems at the Project site. Therefore, similar to the Project, the Reduced Intensity Alternative would not result in flooding onsite or offsite due to altered existing drainage patterns. Impacts would be less than significant. (LTS)

Changes to Stormwater Runoff. The Reduced Intensity Alternative would result in the reduction of the total stormwater runoff rate for a 10-year storm event compared to existing conditions. This alternative would have larger landscaped areas relative to existing conditions and the Project and biotreatment measures would be incorporated. Therefore, runoff water from the Project site would not exceed the capacity of existing or planned stormwater drainage systems. Further, the Reduced Intensity Alternative would adhere to all applicable federal, state, and local requirements associated with stormwater runoff. Impacts would be less than significant, similar to the Project. (LTS)

Impacts from Flooding. As with the Project, the Reduced Intensity Alternative would be built within a Special Flood-Hazard Area (SFHA), Flood Zone AE, which is a 100-year floodplain that is subject to tidal flooding. The Reduced Intensity Alternative would involve construction of two new office buildings and a hotel at a lower density than the Project. The Reduced Intensity Alternative would include the same drainage improvements, reductions in impervious areas, and new LID features to minimize the potential for overland floodflows as the Project. In addition, the Reduced Intensity Alternative would include the same placement of podiums to raise finished floor elevations in order to provide protection from the 100-year base-flood elevation (BFE), accommodating a planned application for Letter of Map Change for areas within the Project site with elevations above FEMA flood zone BFEs, which would qualify as being outside of FEMA Flood Zone AE. Although buildings would not be flooded with SLR of 16 inches or less, the site parking areas and roadways, including underground parking areas, would be inundated under certain flood conditions. Mitigation Measures WQ-5.1 and WQ-5.2, as required for the Project, would minimize the effects of flooding to less than significant. (LTS/M)

Cumulative Impacts. The Reduced Intensity Alternative would result in the same, or slightly fewer, cumulative hydrology impacts as the Project. Cumulative groundwater supplies and recharge impacts would result in less than cumulatively considerable impacts with implementation of Mitigation Measure WQ-1.1. Cumulative storm drain impacts and water quality impacts would result in less than cumulatively considerable impacts. As such, the Reduced Intensity Alternative would result in the same less than cumulatively considerable impacts as the Project. (LTS/M)

Hazards and Hazardous Materials

As with the Project, the Reduced Intensity Alternative would not result in impacts related to development on a hazardous materials release site included on the Cortese List, the navigable airspace of public use airports or private airstrips, or wildland fire hazards.

Routine Hazardous Materials Use. The Reduced Intensity Alternative would be required to comply with mandatory hazardous materials regulations and SWPPP requirements. Construction would involve routine transport, use, and disposal of hazardous materials such as solvents, paints, oils, grease, and caulking. Compliance with applicable regulations would ensure that potential releases from the transport and use or disposal of hazardous materials during Reduced Intensity Alternative construction activities would be reduced to a less-than-significant level. During operation, it is anticipated that the Reduced Intensity Alternative would involve use of hazardous materials typical of office uses (solvents, cleaning agents, paints, petroleum fuels, propane, batteries, etc.). Project operation may also involve the use of hazardous materials, including emergency generators, that are typical of office and hotel developments. Use, storage, and disposal of these materials would be regulated according to federal and state regulations and guidelines, the intent of which is to minimize the risk of upset. Therefore, the risk of accidental explosion or release of hazardous materials that could create a health hazard with the implementation of the Reduced Intensity Alternative is low, and impacts would be less than significant, as with the Project. (LTS)

Upset and Accident Conditions Involving Hazardous Materials. The Reduced Intensity Alternative would result in the same accidental release potential of hazardous materials as the Project. Implementation of the Reduced Intensity Alternative could expose people and the environment to hazardous materials during demolition of Buildings 301–306 and the Chemical Transfer Facility, including asbestos-containing materials, and lead-based materials. The Project site is located on fill materials that may contain naturally occurring asbestos and potential contaminants of concern in groundwater, soil, and soil gas. The Reduced Intensity Alternative would develop the Project site and would disturb soil during construction, which could generate dust containing residual soil contaminates. Any such release could cause adverse health or safety effects on construction workers, the public, and/or the environment if appropriate hazardous materials surveys and safety precautions are not taken. The current Soil Management Plan for the Project site includes protocols for managing both known and potentially undocumented residual soil and groundwater contamination that may be encountered during the construction of Building 21. Soil Management Plans have not yet been prepared for the remainder of the Project site. However, as with the Project, implementation of Mitigation Measures HAZ-2.1, HAZ-2.2, and HAZ-2.3 would reduce the impacts on human populations and ecological systems to a less-than-significant level. (LTS/M)

Exposure to Schools. The Reduced Intensity Alternative, could emit hazardous emissions or involve the handling of hazardous materials within 0.25 mile of existing schools. The closest schools are Belle Haven Elementary and Beechwood School, both located within 0.25 mile of the site. Construction of this alternative could disturb and release hazardous materials, resulting in a potentially significant impact on the sensitive receptors at the school. However, hazardous materials used during construction and operation would be managed in accordance with applicable laws and regulations. Implementation of the California Air Resources Board's (CARB's) Asbestos Airborne Toxic Control Measure (ATCM) would ensure that dust from asbestos-containing materials would not migrate offsite. As with the Project, the impact would be less than significant. (LTS)

Impairment of Emergency Response or Evacuation Plans. As discussed in Section 3.3, *Transportation/Traffic*, the Project would increase traffic in the vicinity of the Project site. The Reduced Intensity Alternative would also increase traffic, but to a lesser extent than the Project due to the associated 30 percent reduction in daily trips. Emergency access to the Project site would be provided from two access points on Chilco Street and from a new signalized intersection on State Route (SR) 84 at the midpoint of the site. Emergency vehicle access inside the site would be provided along the perimeter of the buildings. Implementation of the Reduced Intensity Alternative would not impede emergency access routes and would continue to maintain the existing City grid system. As such, implementation of the Reduced Intensity Alternative would not physically interfere with the City's adopted Emergency Operation Plan. Therefore, a less-than-significant impact would result, similar to the Project. (LTS)

Cumulative Impacts. Because the Reduced Intensity Alternative would develop the Project site similar to the Project and would disturb approximately the same amount of or slightly less soil, this alternative would have similar or slightly decreased cumulative impacts. Development of the site and other cumulative development could expose people or the environment to residual contaminants in soil and/or groundwater if measures are not implemented to control unintentional or inadvertent releases. Development of the Reduced Intensity Alternative and other cumulative development could also expose people to asbestos, lead, or other hazardous materials in existing buildings that may be demolished, renovated, or rehabilitated if measures are not implemented to control unintentional or inadvertent releases. However, implementation of the mitigation measures proposed for the Project, and compliance with current regulatory standards, would reduce the cumulative impacts to less than significant. (LTS)

Population and Housing

As with the Project, the Reduced Intensity Alternative would not result in direct impacts on population growth or the displacement of housing or people.

Indirect Population Growth. The Reduced Intensity Alternative would not include development of new housing units. However, there would be a population increase associated with new employment during operation of this alternative. Approximately 4,630 new employees would be employed at the Project site as a result of the Reduced Intensity Alternative. In comparison, this would be less than the anticipated 6,550 new employees under the Project.

The increase in employment would result in a demand for new housing units and an indirect increase in the residential population. Assuming that 4.8 percent of employees would live in the city, and given an average of 1.8 workers per household, the Reduced Intensity Alternative would result in approximately 124 new households[1] within Menlo Park. With a persons per household (pph) ratio of 2.61,[2] this alternative could result in the increase of approximately 324 new residents in the city compared to the 457 new residents under the Project. Therefore, this alternative represents only a portion of the net population increase expected for the Project, resulting in a less-than-significant impact. The percentage of regional housing demand resulting from the Reduced Intensity Alternative would be relatively small in comparison with projected housing growth in the region. Accordingly, the impact of the Reduced Intensity Alternative would be less than significant. (LTS)

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[1] Assuming an average of 1.8 employees per household (Keyser Marston Associates 2015) in Menlo Park and 4.8 percent of employees who live and work in Menlo Park. 4,630 total employees * 4.8 percent = 222 employees who would also live in Menlo Park. 222 employees / 1.8 employees per household = 124 households.

[2] 124 households x 2.61 persons per household = 324.

Cumulative Impacts. This alternative, in combination with other projected growth in the City, would increase population, employment, and housing in the City. However, as with the Project, the contribution of the Reduced Intensity Alternative to any increase in population, employment, or housing demand is not cumulatively considerable. (LTS)

Public Services

Impacts on Fire Services. The Reduced Intensity Alternative would require an increased level of fire services due to increased employment and onsite activities over existing conditions. With more onsite activity, there could be more incidents requiring fire department response. Although the Project could require additional staff members to maintain the service ratios, the Project alone would not trigger the need for new or expanded facilities that could adversely affect the physical environment or affect human health and safety. Even if expanded facilities were needed, the existing stations are located on infill lots in the city and neighboring jurisdictions that are highly developed. The scale of expansion would be unlikely to result in environmental impacts. Therefore, this alternative's impacts on fire services would be less than those of the Project and would remain less than significant. (LTS)

Impacts on Police Services. The Reduced Intensity Alternative would require an increased level of police services due to increased employment and onsite activity. With more onsite activity, there could be more incidents requiring police response. However, the increased level of police services would not be large enough to trigger the need for construction of new or expanded facilities that could adversely affect the physical environment or affect human health and safety. This alternative's impacts regarding police services would be less than the Project, and would remain less than significant. (LTS)

Impacts on School Facilities. This alternative would not involve the construction of new residential units in the City and, therefore, would not directly generate students. Nonetheless, this alternative would generate student demand from the induced housing demand caused by increased employment at the Project site. Approximately 124 new households could live in the City as a result of the Reduced Intensity Alternative, which is less than the Project due to decreased employees. However, impacts from the indirectly generated students would be mitigated by the payment of the school impact fees established by Senate Bill (SB) 50 by the Project Sponsor and any subsequent residential projects as a result of this alternative. The Reduced Intensity Alternative's impacts regarding schools would be less than the Project, and would remain less than significant. (LTS)

Impacts on Parks and Recreational Facilities. The Reduced Intensity Alternative would provide onsite amenities to the employees such as a publicly accessible open space that would be owned and managed by Facebook and a terraced garden available to employees. These proposed features would reduce the likelihood of employees utilizing or overburdening City facilities. This alternative would add approximately 4,630 new employees to the area. Although the number of employees would increase over existing conditions, it is likely that these employees would mainly use the onsite facilities during work hours rather than the neighboring City parks. The proposed multi-use bicycle/pedestrian bridge would provide access to the Bay Trail and Bedwell Bayfront Park from the Project site and the Belle Haven neighborhood. Although the residential population in the City would increase as a result of the Reduced Intensity Alternative, there are no capacity issues, and the existing facilities would be able to accommodate the increase in residents. In addition, the Reduced Intensity Alternative would be subject to the City's supplemental property taxes to pay for bonds issued for park and recreation. The Reduced Intensity Alternative would not trigger the need for the construction or expansion of parks or other recreational facilities. This alternative's impacts on recreation would be less than those of the Project and would remain less than significant. (LTS)

Impacts on Library Facilities. The Reduced Intensity Alternative would add employees to the Project site who could use the City's libraries. However, it is expected that the existing libraries in the City would be able to accommodate an increase in employment at the Project site and the associated increase in residents. This alternative's impacts regarding libraries would be less than the Project, and would remain less than significant. (LTS)

Cumulative Impacts. As discussed in Section 3.13, *Public Services*, cumulative impacts with respect to fire, police, schools, recreational facilities, and libraries would be less than significant. Because this alternative would involve fewer employees compared to the Project, cumulative impacts would also be less than significant. (LTS)

Utilities and Service Systems

Water Supply. Implementation of the Reduced Intensity Alternative would result in approximately 1,920 fewer employees than the Project. As such, the water demand with implementation of the Reduced Intensity Alternative would be less than the approximately 30 million gallons per year of water demand at full buildout of the Project. Under the Project, the Menlo Park Municipal Water District (MPMWD) would have an adequate supply to meet its projected demands in normal years. In single and multiple dry years, there would be a shortfall in water supply, both with and without the Project. However, implementation of the Water Shortage Contingency Plan would adequately reduce demand such that the impact under the Project would be less than significant. Because the Reduced Intensity Alternative would demand less water than the Project, implementation of this alternative also would have a less-than-significant impact on existing water supplies in MPMWD's service area, and expansion of existing facilities or entitlements would not be necessary. (LTS)

Impacts on Water Treatment Facilities. As described above, there is sufficient water supply for implementation of the Reduced Intensity Alternative, which would not require expansion of the existing water treatment facilities serving MPMWD. Further, MPMWD has sufficient capacity to accommodate the water demands of the Project within its Individual Supply Guarantee (ISG). Because the Reduced Intensity Alternative would include fewer employees at the site than the Project, this alternative would also not require MPMWD to acquire additional water supplies with the associated requirement for water treatment. The San Francisco Public Utilities Commission (SFPUC) has sufficient capacity in its existing water treatment facilities to deliver treated water to its customers. Therefore, implementation of the Reduced Intensity Alternative would not require expansion of existing water treatment facilities or the construction of new facilities, similar to the Project. This alternative would have a less-than-significant impact related to water treatment facilities. (LTS)

Wastewater Generation. Although the Reduced Intensity Alternative would include fewer employees at the Project site compared to the Project, wastewater generation would still increase over existing conditions, just to a lesser extent than the Project. Wastewater discharge from the Project site would constitute less than approximately 7 percent of the West Bay Sanitary District's (WBSD's) current available capacity entitlement from SVCW. Therefore, WBSD's available capacity entitlements from SVCW would be sufficient to accommodate the projected wastewater flow that would result from implementation of the Project. The estimate of the Project's wastewater generation presents a conservative analysis because it assumes that 100 percent of indoor water demand at the Project site would become wastewater and would be conveyed to the Silicon Valley Clean Water (SVCW) (formerly known as the South Bayside System Authority) Regional Treatment Plant. Instead, the Reduced Intensity Alternative, similar to the Project, could include an onsite wastewater system that could process approximately 23 million gallons of water annually. The onsite wastewater system would be implemented by the Project Sponsor, if approved by the City and other required agencies. It is

anticipated that the potential onsite wastewater system would reduce the total nitrogen load to the SVCW Regional Treatment Plant as well as the hydraulic load in the sanitary sewage collection system leading to the SVCW Regional Treatment Plant. The processed water would be reused for toilets and urinals and potentially irrigation. Because the SVCW Regional Treatment Plant would have adequate capacity to process the wastewater generated from the Project, implementation of the Project would not exceed the wastewater treatment requirements of the San Francisco Bay RWQCB. The Reduced Intensity Alternative would not require the expansion or construction of new wastewater facilities. As such, similar to the Project, the Reduced Intensity Alternative would result in less-than-significant impacts. (LTS)

Solid Waste Generation. It is assumed that the Reduced Intensity Alternative would generate the same amount of solid waste during the construction phase as the Project because both would require the demolition of Buildings 301–306 and other asphalt features. During the operation phase, at full buildout and occupancy, the Project would generate approximately 4,087 tons of solid waste per year, or approximately 16 tons per day (31,440 pounds per day). Because the Reduced Intensity Alternative would include 30 percent or approximately 1,920 fewer employees than the Project, solid waste generation would be approximately 30 percent less under this alternative. The solid waste facilities that would serve the Project have sufficient remaining capacity to accommodate the Project. Therefore, the solid waste facilities that would serve the Project site would be sufficient to accommodate the Reduced Intensity Alternative. This alternative would not contribute to the need to expand existing or construct new solid waste disposal facilities. Because the Reduced Intensity Alternative would involve less development than the Project, this alternative would also result in less-than-significant impacts related to solid waste generation. (LTS)

Stormwater Generation. Implementation of the Reduced Intensity Alternative would include stormwater treatment areas, such as bio-retention areas. In addition, buildings on the Project site would contain low-impact development measures to allow for infiltration and minimize stormwater contamination, and proposed Buildings 21 and 22 would include green roofs and terraces. These features would result in a net decrease in the amount of runoff and associated pollution leaving the Project site. In addition, the Project Sponsor would upsize existing onsite pipes and ensure that the onsite system is adequate with respect to conveying stormwater in the event of a 100-year storm. The addition of the stormwater facilities would not require new or expanded stormwater drainage facilities. Further, implementation of this alternative would adhere to provisions included in the Regional Stormwater National Pollutant Discharge Elimination System (NPDES) Permit and the City's grading and drainage policies, which regulate the quantity of stormwater runoff from new development, specifically prohibiting a net increase in the rate of runoff from new development. No new facilities would be required. Therefore, as with the Project, implementation of the Reduced Intensity Alternative would have a less-than-significant impact on the City's storm drain system. (LTS)

Energy Demand. The Reduced Intensity Alternative would use slightly less energy than the Project due to the decrease in the number of employees at the Project site. Implementation of the Project would result in less-than-significant impacts on existing electricity and natural gas supply and associated infrastructure because it would be served by PG&E and potentially Peninsula Clean Energy (once it becomes available), which is a joint powers agency formed by all the cities in San Mateo County to purchase clean energy in bulk, and would not require construction of new facilities, the energy demand is within the City's forecasts, and the Project incorporates energy-saving measures. Because the Reduced Intensity Alternative would demand fewer gas and electric services due to fewer employees and less building area, this alternative would result in a reduction in level of impact and therefore would also have a less-than-significant impact. (LTS)

Cumulative Impacts. As discussed in Section 3.14, *Utilities*, the City's water, stormwater drainage, solid waste, and energy have sufficient capacity to serve the cumulative development of the City. The City and its service providers would have adequate supplies to meet customer demand until 2040, including the demand of the Project combined with existing and planned future uses. Because the Reduced Intensity Alternative would use less water and energy and generate less wastewater, stormwater, and solid waste than the Project, impacts would not be cumulatively considerable. (LTS)

5.6 Comparison of Impacts

Table 5-3. Comparison of Impacts among Project Alternatives

Environmental Issue	Project	No Project Alternative	Reduced Intensity Alternative
Land Use			
Conflicts with Adopted Land Use Plans and Policies	LTS	LTS	LTS
Cumulative Impacts	LTS	LTS	LTS
Aesthetics			
Impacts on Scenic Vistas	LTS	NI	LTS
Degradation of Visual Character or Quality	LTS	NI	LTS
New Sources of Light and Glare	LTS/M	NI	LTS/M
New Sources of Shadow	LTS	NI	LTS
Cumulative Impacts	LTS	NI	LTS
Transportation/Traffic			
Impacts on Intersections	SU	NI	LTS/M
Impacts on Roadway Segments	SU	NI	SU
Impacts on Routes of Regional Significance	SU	NI	LTS
Impacts on Local Transit Systems	SU	NI	LTS
Impacts on Local Bicycle and Pedestrian Facilities	LTS/M	NI	LTS/M
Cumulative Impacts	SU	NI	LTS
Air Quality			
Conflict with Air Quality Plan	LTS	NI	LTS
Construction Criteria Air Pollutant Emissions	LTS/M	NI	LTS/M
Operational Criteria Air Pollutant Emissions	LTS/M	NI	LTS
Exposure of Existing Sensitive Receptors to Substantial Pollutant Concentrations During Construction	LTS	NI	LTS
Exposure of Existing Sensitive Receptors to Substantial Pollutant Concentrations from Project Operation	LTS	NI	LTS
Create Objectionable Odors	LTS	NI	LTS
Cumulative Impacts	LTS	NI	LTS
Greenhouse Gas Emissions			
GHG Emissions during Project Construction	LTS/M	NI	LTS/M
GHG Emissions during Project Operation	LTS	NI	LTS
Conflicts with Applicable GHG Emission Plans, Policies, and Regulations	SU	NI	SU

Environmental Issue	Project	No Project Alternative	Reduced Intensity Alternative
Noise			
Exposure of Onsite Users to Excessive Noise Levels	LTS/M	NI	LTS/M
Expose Persons to or Generate Excessive Ground-borne Vibration or Ground-borne Noise Levels	LTS	NI	LTS
Substantial Permanent Increase in Ambient Noise Levels	LTS/M	NI	LTS/M
Substantial Temporary or Periodic Increase in Ambient Noise	LTS/M	NI	LTS/M
Cumulative Impacts	LTS/M	NI	LTS/M
Cultural Resources			
Impacts on Historic Resources	LTS	NI	LTS
Impacts on Archaeological Resources	LTS/M	NI	LTS/M
Impacts on Paleontological Resources	LTS/M	NI	LTS/M
Impacts on Human Remains	LTS/M	NI	LTS/M
Cumulative Impacts	LTS	NI	LTS
Biological Resources			
Direct Impacts on Special-Status Species	LTS/M	NI	LTS/M
Indirect Impacts on Special-Status Species	LTS/M	NI	LTS/M
Impacts on Native Wildlife Nursery Sites	LTS/M	NI	LTS/M
Conflicts with Any Local Policies or Ordinances that Protect Biological Resources	LTS	NI	LTS
Cumulative Impacts	LTS	NI	LTS
Geology and Soils			
Strong Seismic Ground Shaking and Seismic-Related Ground Failure	LTS	NI	LTS
Soil Erosion	LTS	NI	LTS
Soil Hazards	LTS	NI	LTS
Expansive Soil	LTS	NI	LTS
Cumulative Impacts	LTS	NI	LTS
Hydrology and Water Quality			
Violation of Water Quality Standards or Waste Discharge Requirements	LTS/M	NI	LTS/M
Effects on Groundwater Supplies and Recharge	LTS	NI	LTS
Changes to the Existing Drainage Patterns	LTS	NI	LTS
Changes to Stormwater Runoff	LTS	NI	LTS
Impacts from Flooding	LTS/M	NI	LTS/M
Cumulative Impacts	LTS/M	NI	LTS/M
Hazards and Hazardous Materials			
Routine Hazardous Materials Use	LTS	NI	LTS
Upset and Accident Conditions Involving Hazardous Materials	LTS/M	NI	LTS/M
Exposure to Schools	LTS	NI	LTS
Impairment of Emergency Response or Evacuation Plans	LTS	NI	LTS
Cumulative Impacts	LTS	NI	LTS

Environmental Issue	Project	No Project Alternative	Reduced Intensity Alternative
Population and Housing			
Indirect Population Growth	LTS	NI	LTS
Cumulative Impacts	LTS	NI	LTS
Public Services			
Impacts on Fire Services	LTS	NI	LTS
Impacts on Police Services	LTS	NI	LTS
Impacts on School Facilities	LTS	NI	LTS
Impacts on Parks and Recreational Facilities	LTS	NI	LTS
Impacts on Library Facilities	LTS	NI	LTS
Cumulative Impacts	LTS	NI	LTS
Utilities and Service Systems			
Water Supply	LTS	NI	LTS
Impacts on Water Treatment Facilities	LTS	NI	LTS
Wastewater Generation	LTS	NI	LTS
Solid Waste Generation	LTS	NI	LTS
Stormwater Generation	LTS	NI	LTS
Energy Demand	LTS	NI	LTS
Cumulative Impacts	LTS	NI	LTS

NI = No Impact; LTS = Less-than-Significant; PS = Potentially Significant; SU = Significant Unavoidable

5.7 Environmentally Superior Alternative

Section 21002 of the State CEQA Guidelines requires lead agencies to adopt feasible mitigation measures or feasible environmentally superior alternatives in order to substantially lessen or avoid otherwise significant adverse environmental effects, unless specific social or other conditions make such mitigation measures or alternatives infeasible. CEQA also requires that an environmentally superior alternative be identified among the alternatives analyzed. In general, the environmentally superior alternative is the project that avoids or substantially lessens some or all of the significant and unavoidable impacts of the proposed project (State CEQA Guidelines Section 15126.6).

On the basis of comparing the extent to which the alternatives reduce or avoid the significant impacts of the Project, the No Project Alternative would be the environmentally superior alternative. Because no development would occur at the Project site, there would be no construction or operational impacts. However, per Section 15126.6(e)(2), the No Project Alternative cannot be selected as the environmentally superior alternative.

As previously discussed, the Reduced Intensity Alternative involving a 30 percent reduction in office building space and office employees is the only other alternative that has been deemed feasible. This alternative would result in a reduction of building area and an associated reduction of employees, vehicle trips, and parking areas. However, because a similar site plan is proposed under the Reduced Intensity Alternative as with the Project, similar construction and building footprint impacts discussed for the Project would occur for the Reduced Intensity Alternative. Only the impacts related to the number of employees, vehicle trips, and amount of impervious surfaces due to a change in parking area would be reduced with this alternative.

As explained above, with Mitigation TRA-1.2, the Reduced Intensity Alternative would result in a net increase of 20 vehicle trips during the a.m. peak hour, and a net reduction of 295 vehicle trips during the p.m. peak hour. Therefore, the Reduced Intensity Alternative would result in less-than-significant impacts on intersections after implementation of Mitigation Measure TRA-1.2, compared to the Project-induced significant and unavoidable impacts. In addition, the impacts on routes of regional significance and local transit systems would be reduced from significant and unavoidable under the Project to less than significant under the Reduced Intensity Alternative. Given that the Reduced Intensity Alternative would result in approximately 30 percent fewer employees than the Project, it is highly likely that such a reduction in the number of employees and corresponding vehicle miles traveled would result in NO_X emissions that would not exceed the BAAQMD threshold. Therefore, the Reduced Intensity Alternative would not require the implementation of Mitigation Measure AQ-2.2 in order to reduce impacts to less than significant. All other impacts from the Reduced Intensity Alternative would result in similar impacts as the Project. Because of the reduced transportation and air quality impacts, the Reduced Intensity Alternative is considered the Environmentally Superior Alternative.

Chapter 6
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