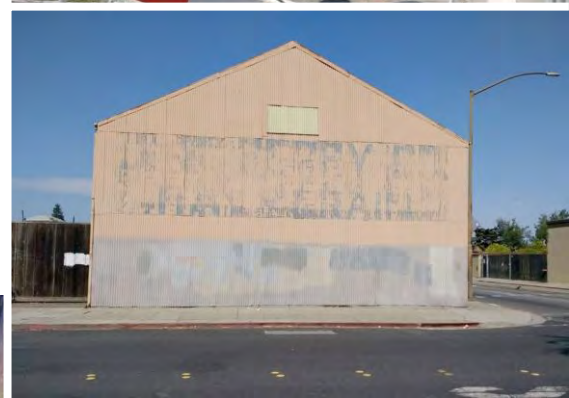


Submitted to:
City of Redwood City
Community Development and
Transportation Department,
Planning Division

Draft
Environmental Impact Report
South Main Mixed-Use
Development Project
(1601 El Camino Real)

May 2020

SCH#2019070208



Draft Environmental Impact Report

South Main Mixed-Use Project

Prepared for:

City of Redwood City

Prepared by:

AECOM

May 2020

SCH #2019070208

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Appendix NOP	NOP, Revised NOP, and NOP Comments
Appendix IS	Initial Study
Appendix CNA	Parcel F Consistency Analysis
Appendix PLNS	Project Plans
Appendix UTIL	Utilities Engineering Report
Appendix COA	Conditions of Approval
Appendix SHDW	Shadow Study
Appendix AQTR	Air Quality and GHG
Appendix CR	Cultural Resources Report
Appendix WSA	Water Supply Assessment

Acronyms and Abbreviations

AAC	Architectural Advisory Committee
AAQS	Ambient Air Quality Standards
AB	Assembly Bill
ABAG	Association of Bay Area Governments
ADA	Americans with Disabilities Act
ADT	average daily trip
APN	Assessor's Parcel Number
ARB	California Air Resources Board
BAAQMD	Bay Area Air Quality Management District
BE	built environment
BMP	best management practice
BMR	below market rate
C/CAG	City/County Association of Governments of San Mateo
CAA	Clean Air Act
CalEEMod	California Emissions Estimator Model
CalEPA	California Environmental Protection Agency
CalMod	Caltrain Modernization Program
Caltrans	California Department of Transportation
CAP	Climate Action Plan
CARE	Community Air Risk Evaluation
CBPP	San Mateo County Comprehensive Bicycle and Pedestrian Plan
CCR	California Code of Regulations
CDFW	California Department of Fish and Wildlife
CEQA	California Environmental Quality Act
CFR	Code of Federal Regulations
City	City of Redwood City
CMP	congestion management plan
CO	carbon monoxide
CO ₂ e	carbon dioxide-equivalent
COA	condition of approval
CRHR	California Register of Historical Resources
CRMP	Cultural Resources Management Plan
dBA	A-weighted decibel
DEIR	draft environmental impact report
DOF	Department of Finance
DPM	diesel particulate matter

DTPP	Downtown Precise Plan
DTSC	Department of Toxic Substances Control
EDD	Employee Development Department
EIR	environmental impact report
EPA	United States Environmental Protection Agency
ESL	Ecological Screening Level
FEIR	final environmental impact report
FHWA	Federal Highway Administration
GHG	greenhouse gas
GWP	global warming potential
HABS	Historic American Building Survey
HAER	Historic American Engineering Record
HAP	hazardous air pollutant
HRA	health risk assessment
HRAC	Historic Resources Advisory Committee
IPCC	Intergovernmental Panel on Climate Change
ITE	Institute of Transportation Engineers
LCFS	Low-Carbon Fuel Standard
LOS	level of service
LZ	lighting zone
MGD	million gallons per day
mm/sec	millimeters per second
MMBtu/hr	million British thermal units per hour
MMT CO ₂ e	million metric tons of CO ₂ e
MPO	Metropolitan Planning Organization
MT CO ₂ e	Metric ton of CO ₂ e
MTC	Metropolitan Transportation Commission
MU-C	Mixed-Use-Corridor
MUC-ECR	Mixed-Use Corridor – El Camino Real
MUT	Mixed-Use Transitional
NAAQS	National Ambient Air Quality Standards
NAHC	Native American Heritage Commission
NHPA	National Historic Preservation Act
NOP	Notice of Preparation
NO _x	nitrogen oxides
NPDES	National Pollutant Discharge Elimination System
NPS	National Parks Service

NRHP	National Register of Historic Places
NWIC	Northwest Information Center
O ₃	ozone
OHP	Office of Historic Preservation
OPR	State of California's Office of Planning and Research
Pb	lead
PDA	Priority Development Area
PG&E	Pacific Gas and Electric Company
PM ₁₀	particulate matter 10 microns in diameter or less
PM _{2.5}	particulate matter 2.5 microns in diameter or less
ppb	parts per billion
ppi	pixels per inch
ppm	parts per million
ppv	peak particle velocity
PRC	Public Resources Code
RCFD	Redwood City Fire Department
RCSD	Redwood City School District
ROG	reactive organic gases
ROW	right-of-way
RWCmoves	Redwood City Moves
RWQCB	Regional Water Quality Control Board
SamTrans	San Mateo County Transit District
SANDAG	San Diego Association of Governments
SB	Senate Bill
SCS	Sustainable Community Strategy
SDBL	State Density Bonus Law
SDR	standard development requirement
SF	square foot
SFBAAB	San Francisco Bay Area Air Basin
SHPO	State Historic Preservation Officer
SIP	State Implementation Plan
SMCTP	San Mateo Countywide Transportation Plan
SMP	Site Management Plan
SO _x	sulfur oxides
SCAQMD	South Coast Air Quality Management District
SR	State Route
SUHSD	Sequoia Union High School District

SWPPP	Storm Water Pollution Prevention Plan
TAC	toxic air contaminant
TDM	Transportation Demand Management
TIF	tagged image file
TRU	Transport Refrigeration Units
USFS	United States Forest Service
VdB	vibration decibel
VMT	vehicle miles traveled
VOCs	volatile organic compounds
VTA	Santa Clara Valley Transportation Authority
µg/m ³	micrograms per cubic meter

Executive Summary

Pursuant to California Environmental Quality Act (CEQA) Guidelines Section 15123, this section provides an overview of the Environmental Impact Report (EIR) for the South Main Mixed-Use project (proposed project).

The proposed project is summarized here, in addition to a summary of the alternatives to the proposed project, conclusions of the impact analysis provided in Chapter 3 of this Draft Environmental Impact Report (DEIR), and any areas of controversy. A summary table is provided at the end of this section that presents the environmental impacts identified throughout this DEIR; the significance without mitigation; proposed mitigation measures; and the significance of the impacts with implementation of identified mitigation measures. The summary table also includes topics addressed in the Initial Study (see Appendix IS) and Parcel F Consistency Analysis (see Appendix CNA) that would require mitigation measures.

ES 1.1 Glossary

- **ARB:** California Air Resources Board
- **BAAQMD:** Bay Area Air Quality Management District
- **CDFW:** California Department of Fish and Wildlife
- **CEQA:** California Environmental Quality Act
- **CFR:** Code of Federal Regulations
- **dBA:** A-weighted decibel
- **DEIR:** draft environmental impact report
- **DTPP:** Downtown Precise Plan
- **EIR:** environmental impact report
- **EPA:** United States Environmental Protection Agency
- **ESL:** Ecological Screening Level
- **HABS:** Historic American Building Survey
- **HAER:** Historic American Engineering Record
- **mm/sec:** millimeters per second
- **MUC-ECR:** Mixed-Use Corridor – El Camino Real
- **MUT:** Mixed-Use Transitional
- **NOP:** Notice of Preparation
- **NPS:** National Parks Service
- **NRHP:** National Register of Historic Places
- **NWIC:** Northwest Information Center
- **PM₁₀:** particulate matter 10 microns in diameter or less

- **ppi:** pixels per inch
- **ppv:** peak particle velocity
- **RWQCB:** Regional Water Quality Control Board
- **SMP:** Site Management Plan
- **TIF:** tagged image file
- **VdB:** vibration decibel

ES 1.2 Summary of Project

The project is a mixed-use development proposed by Greystar Development. The project site is at the periphery of the City's Downtown core, and is composed of five contiguous blocks totaling 8.30 acres (Parcels A through E), and a 0.15-acre portion of a separate block (Parcel F). Parcels A through E are bounded by El Camino Real, Maple Street, Elm Street, Main Street, Caltrain right-of-way, Chestnut Street, Shasta Street, and Cedar Street. Parcel F is approximately 1,000 feet northwest of Parcel A at the southwestern corner of El Camino Real and Jackson Avenue.

The proposed project would develop 540 multifamily residential units, approximately 530,000 square feet of office uses, 29,000 square feet of retail uses, and an 8,400-square-foot childcare facility. A net total of 125 affordable residential units would be developed. Approximately 1,800 parking stalls would be provided, primarily in underground parking structures. The approximately 40,000 square feet of public open space proposed throughout the project site would include a public creek walk and park at Shasta Street and Chestnut Street.

Although project Parcels A through E are just outside the downtown core, the non-contiguous Parcel F is in the Downtown Precise Plan (DTPP) area. The proposed project is consistent with the applicable zoning designations for the project site: Mixed-Use Corridor – El Camino Real (MUC-ECR) district at Parcels A and D, Mixed-Use Transitional (MUT) district at Parcels B, C, and E, and the DTPP district at Parcel F. In addition, the proposed project reflects the objectives and strategies from the El Camino Real Corridor Plan that apply to the project site.

A detailed description of the proposed project is provided in Chapter 2, Project Description.

ES 1.3 Environmental Procedures

CEQA requires that state, regional, and local government agencies consider the environmental effects of projects over which they have discretionary authority before taking action on those projects (Public Resources Code Section 21000 *et seq.*). CEQA requires that, before a project with potentially significant environmental effects may be approved, an EIR must be prepared that fully describes the environmental effects of the project; identifies mitigation measures to lessen or eliminate adverse impacts; and examines feasible alternatives to the project.

CEQA also requires that each public agency avoid or reduce to less-than-significant levels, wherever feasible, the significant environmental effects of projects it approves or implements. The information contained in the EIR is to be reviewed and considered by the lead agency prior to the ultimate decision to approve, disapprove, or modify the proposed project. If a project would result in significant and unavoidable environmental impacts that cannot be fully and feasibly reduced to less-than-significant levels, the project can still be approved, but the lead agency must issue a "statement of overriding considerations" explaining in writing the specific economic, social, or other considerations that it believes would make those significant effects acceptable.

ES 1.3.1 EIR Organization

The content and format of this EIR are designed to meet the requirements of CEQA and the State CEQA Guidelines (Sections 15120 through 15132). The EIR is organized into the following chapters:

- The **Executive Summary** presents an overview of the proposed project; a summary of the alternatives being considered; a discussion of known areas of controversy; and a listing of the impacts and mitigation measures in a tabular format, including the significance of impacts before and after proposed mitigation measures.
- **Chapter 1, Introduction**, explains the CEQA process and the purpose of this EIR; provides an overview of the proposed project; provides information on public participation; and outlines the organization and scope of the document.
- **Chapter 2, Project Description**, provides background on the proposed project; identifies the project's objectives; lists the regulatory requirements of the project; and describes the proposed land uses, operational characteristics, and construction activities.
- **Chapter 3, Environmental Evaluation**, is divided into five sections. Section 3.0 introduces the chapter and explains the approach to the environmental analysis. Each of the remaining five sections is devoted to a particular topic area and describes the environmental setting (the regulatory framework and the existing conditions). Following the setting information, each section presents an analysis of impacts that would result from construction and operation of the proposed project, including potential cumulative impacts. Where applicable, each section identifies mitigation measures that would avoid or eliminate significant impacts, or reduce them to less than significant.
- **Chapter 4, Significant Unavoidable Impacts**, identifies the significant impacts of the proposed project that would remain significant with implementation of recommended mitigation measures.
- **Chapter 5, Alternatives to the Project**, presents the impact analysis for the No Project Alternative and two project alternatives. The chapter also describes the alternatives that were considered, but eliminated from further consideration.
- **Chapter 6, Effects Not Found to be Significant**, summarizes the results of the project Initial Study (Appendix IS) and Consistency Analysis (Appendix CNA), and describes why no further analysis is warranted. This chapter also includes a discussion of revisions to the proposed project that occurred following publication of the July 2019 Notice of Preparation (NOP).
- **Chapter 7, Other Required CEQA Topics**, analyzes the potential for growth-inducing impacts and irreversible changes that would result from implementing the proposed project.
- **Chapter 8, Report Preparers**, lists the individuals who were involved in preparing this EIR.
- **Technical appendices** present the background information that supports the EIR.

ES 1.3.2 Type and Purpose of this Draft EIR

The City of Redwood City has prepared this EIR to provide responsible and trustee agencies and the public with information about the potential environmental effects of the proposed project. This EIR was prepared in compliance with CEQA (as amended through California Public Resources Code

Section 21000 *et seq.*) and the State CEQA Guidelines (California Code of Regulations Section 15000 *et seq.*).

The purpose of an EIR is not to recommend either approval or denial of a project, but to disclose the potential environmental impacts of a project and potential methods of mitigation before approving, modifying, or denying a project. According to the CEQA Guidelines (Section 15064[f][1]), preparation of an EIR is required whenever a project may result in a significant environmental impact. An EIR is an informational document used to inform public agency decision-makers and the general public of the significant environmental effects of a project; identify possible ways to minimize the significant effects; and describe reasonable alternatives to the project that could feasibly attain most of the basic objectives of the project, while substantially lessening or avoiding any of the significant environmental impacts. Public agencies are required to consider the information presented in the EIR when determining whether to approve a project.

The environmental analysis in this EIR has been prepared at a “project level” of detail focused on the specific proposed land uses, height and massing of the buildings, circulation improvements, open space and community facility plans, and associated construction activity. A project-level EIR “should focus primarily on the changes in the environment that would result from that development project...[and] examine all phases of the project including planning, construction, and operation” (State CEQA Guidelines, Section 15161).

Pursuant to Section 15143 of the State CEQA Guidelines, a lead agency may limit an EIR’s discussion of environmental impacts to those specific resource areas where significant impacts on the environment may occur. To determine which resource areas would potentially experience significant environmental impacts, the City evaluated the results of literature and database searches; professional judgment; a review of project characteristics; an Initial Study; and comments on the Initial Study from agencies and the public.

The Initial Study provided in Appendix IS of this EIR addressed the proposed development on project Parcels A through E. The intent of the analysis was to identify those environmental topics that would result in impacts that are less than significant or less than significant with mitigation, and therefore not warrant further analysis in the EIR. Impacts from the Initial Study analysis determined to be less than significant with mitigation are included in Table ES-1 below, including the full text of the required mitigation measure(s).

Subsequent to publication of the project Initial Study in July 2019, the applicant submitted a revised project application that increased the number of residential units and reduced the proposed square footage of office space. For this reason, the analysis and conclusions of the Initial Study were re-evaluated in EIR Chapter 6, Effects Not Found to be Significant, in consideration of the currently proposed project; this re-evaluation determined that no changes to the prior impact conclusions and mitigation measures in the July 2019 Initial Study were required.

Project Parcels A through E are on the periphery of the City’s Downtown core, and the non-contiguous project Parcel F is in the planning area of the DTPP. Development contemplated under the DTPP was analyzed previously in the DTPP Program EIR. For this reason, the proposed development at project Parcel F was analyzed for consistency with the DTPP Program EIR; this Consistency Analysis is provided in Appendix CNA. As detailed in Appendix CNA, the current development proposal on Parcel F would not result in any new significant impacts, or in a substantial increase to the severity of a significant impact beyond those impacts previously disclosed in the DTPP Program EIR. The Consistency Analysis identifies various mitigation measures from the DTPP Program EIR that are applicable to the Parcel F development proposal. Table ES-1 includes a summary from the Consistency Analysis of those Parcel F impacts triggering mitigation, along with the full text of the applicable Program EIR mitigation measure.

All mitigation measures listed in Table ES-1 below, including those from Chapter 3, Environmental Evaluation, and those included in EIR Appendices IS and CNA, would be included in the Mitigation Monitoring and Reporting Program that the City would prepare (pursuant to the CEQA Guidelines Section 15097) if the City determines that the proposed project should be approved.

For a complete listing of environmental topics covered in the body of this DEIR, see Chapter 3, Environmental Evaluation.

ES 1.3.3 Scoping Process

An NOP for the project was issued on July 9, 2019, and comments were accepted until August 9, 2019. The NOP was submitted to the San Mateo County Clerk and the State Clearinghouse of the Governor's Office of Planning and Research, and was posted on the City's website for a 30-day public review period. The proposed project was subsequently revised in response to public comments, and now includes additional housing units as outlined above. The City re-circulated the NOP on January 29, 2020 to summarize and disclose the proposed revisions to the project. Appendix NOP to this DEIR presents a copy of both NOPs and all written comments received during each NOP comment period.

ES 1.4 Summary of Project Alternatives

CEQA Guidelines Section 15126.6(a) requires that an EIR describe a range of reasonable alternatives to a project, or the location of a project, that would feasibly attain most of the basic objectives of the project, but would avoid or substantially lessen any of the significant effects, and evaluate the comparative merits of the alternatives. The following alternatives to the proposed project were considered:

- **No Project Alternative.** CEQA Guidelines Section 15126.6(e) requires that an EIR analyze a "No Project" alternative. The purpose of describing and analyzing a no project alternative is to allow decision-makers to compare the impacts of approving the project with the impacts of not approving the project.
- **Preservation Alternative.** The Preservation Alternative would be constructed on the same development parcels as the proposed project, and would develop the same number of multi-family residential units, square footage of retail and office space, and same amount of public and private open space as identified for the proposed project. The only substantive difference between the Preservation Alternative and the proposed project is that Perry's Feed Shed would be rehabilitated, instead of demolished and rebuilt with a replicate structure in the same location.
- **2018 Project Alternative.** The 2018 Project Alternative would develop 249 fewer residential units than the proposed project, but increase the commercial square footage by approximately 19,000 square feet. A similar building site footprint would be implemented as part of the 2018 Project Alternative, as compared to the proposed project. The 2018 Project Alternative would modify the proposed site plan and associated land uses on Parcels C, D, and E. The 2018 Project Alternative and proposed project would result in the development of identical land uses on Parcels A, B, and F.

Chapter 5, Alternatives to the Project, provides an analysis of these alternatives and of the alternatives that were considered but rejected. Chapter 5 identifies the No Project Alternative as the environmentally superior alternative; however, this alternative would not achieve the project objectives. In accordance with CEQA Guidelines Section 15126.6(e)(2), when the No Project Alternative is identified as environmentally superior, the EIR is required to identify an environmentally superior alternative among the other alternatives. The Preservation Alternative would be the environmentally superior alternative, because it

would meet the project objectives, and would avoid the significant and unavoidable impacts identified for the proposed project on the historical resource (Perry's Feed Shed).

ES 1.5 Summary of Impacts and Mitigation Measures

Table ES-1 provides a summary of the project's potential impacts and the mitigation measures proposed to reduce and/or avoid the significant environmental effects identified in the DEIR, Initial Study, and Parcel F Consistency Analysis. Table ES-1 also indicates the level of significance of the impact following implementation of each mitigation measure. Detailed discussion of the proposed project impacts is provided in Chapter 3 of this DEIR. The Initial Study analysis of projects specific to Parcels A through E is provided in Appendix IS; the applicable mitigation measures from that analysis included in Table ES-1. The Consistency Analysis of Parcel F is provided in Appendix CAN; pertinent impacts and the applicable mitigation measures from the DTPP Program EIR are included in Table ES-1. The mitigation measures included in Table ES-1 would be included in the Mitigation Monitoring and Reporting Program that the City would prepare (pursuant to the CEQA Guidelines Section 15097) if the City determines that the proposed project should be approved.

Table ES-1 Summary of Impacts and Mitigation Measures

Impact	Significance without Mitigation	Mitigation Measure	Significance with Mitigation
EIR Impacts and Mitigation Measures			
Aesthetics (AE)			
AE-1: The project would not conflict with applicable zoning and other regulations governing scenic quality.	No Impact	N/A	N/A
AE-2: The project would not create a new source of substantial light or glare that would adversely affect daytime or night-time views in the area.	No Impact	N/A	N/A
AE-3: The project, in combination with past, present, and reasonably foreseeable projects, would not result in substantial cumulative impacts with respect to aesthetics.	No Impact	N/A	N/A
Air Quality (AQ)			
AQ-1: The project could conflict with or obstruct implementation of the applicable air quality plan.	S	Mitigation Measure AQ-2a: The construction contractor shall comply with the following Bay Area Air Quality Management District (BAAQMD) Best Management Practices for reducing construction emissions of uncontrolled fugitive dust (particulate matter 10 microns in diameter or less [PM ₁₀] and particulate matter 2.5 microns in diameter or less [PM _{2.5}]): (A) All exposed surfaces (e.g., parking areas, staging areas, soil piles, stockpiles, graded areas, and unpaved access roads) shall be watered two times daily, or as often as needed, or apply non-toxic soil stabilizers or be covered to control dust emissions. Watering should be sufficient to prevent airborne dust from the leaving the site. Increased watering frequency may be necessary whenever	LTS

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Impact	Significance without Mitigation	Mitigation Measure	Significance with Mitigation
		wind speeds exceed 15 miles per hour. Reclaimed water shall be used whenever possible.	
		(B) All haul trucks transporting soil, sand, or other loose material off site shall be covered, or will be required to maintain at least 2 feet of freeboard (i.e., the minimum required space between the top of the load and the top of the trailer).	
		(C) All visible mud or dirt track-out onto adjacent public roads and paved access roads shall be removed using wet power (with reclaimed water, if possible) vacuum street sweepers at least once per day, or as often as needed. The use of dry power sweeping is prohibited.	
		(D) Hydroseed or apply non-toxic soil stabilizers to inactive construction areas.	
		(E) All vehicle speeds on unpaved roads shall be limited to 15 miles per hour.	
		(F) Install sandbags or other erosion control measures to prevent silt runoff from public roadways.	
		(G) Pave all roadways, driveways, and sidewalks as soon as possible, or apply water twice daily or as often as necessary to control dust. Building pads shall be laid as soon as possible after grading, unless seeding or soil binders are used.	
		(H) Idling times shall be minimized either by shutting equipment off when not in use or by reducing the maximum idling time to 5 minutes (as required by California Airborne Toxics Control Measure Title 13, Section 2485 of the California Code of Regulations). Clear signage shall be provided for construction workers at all access points.	
		(I) All construction equipment shall be maintained and properly tuned in accordance with manufacturers' specifications. All equipment shall be checked by a certified mechanic and determined to be running in proper condition prior to operation.	
		(J) A publicly visible sign shall be posted with the telephone number and person to contact regarding dust complaints. This person shall respond and take corrective action within 48 hours. BAAQMD's phone number also shall be visible to ensure compliance with applicable regulations.	
		The City of Redwood City Building Inspection & Code Enforcement Division official or his/her designee shall verify compliance, and that these measures have been implemented, during normal construction site inspections.	

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		<p>Mitigation Measure AQ-2b: Construction contractors shall use equipment that meets the Air Resources Board's (ARB's) and/or United States Environmental Protection Agency's (EPA's) Tier 4 Final emissions standards for off-road diesel-powered construction equipment with more than 50 horsepower for all construction activities, unless it can be demonstrated to the City of Redwood City Planning & Housing Division that such equipment is not available. Documentation shall consist of signed written statements from at least two construction equipment rental firms. Any emissions control device used by the contractor shall achieve emissions reductions that are no less than what could be achieved by Tier 4 Final emissions standards for a similarly sized engine, as defined by ARB or EPA regulations. For any substitute emissions control device employed, the contractor shall provide documentation that the associated emissions reductions are no less than what could be achieved by Tier 4 Final emissions standards for a similarly sized engine.</p> <p>Prior to construction, the project engineer shall ensure that all construction (e.g., demolition and grading) plans clearly show the requirement for EPA Tier 4 Final emissions standards for construction equipment over 50 horsepower. During construction, the construction contractor shall maintain a list of all operating equipment in use on the construction site for verification by the City of Redwood City.</p> <p>The construction equipment list shall state the makes, models, and numbers of construction equipment on site, in addition to the engine tier rating and California ARB engine identification number for each piece of construction equipment.</p>	
AQ-2: The project could result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard.	S	Mitigation Measure AQ-2a and Mitigation Measure AQ-2b	LTS
AQ-3: The project could expose sensitive receptors to substantial pollutant concentrations.	S	<p>Mitigation Measure AQ-2b (construction)</p> <p>Mitigation Measure AQ-3 (operation): The project applicant shall ensure one of the following two requirements will be fulfilled as the emergency generators are installed or permitted:</p> <p>(a) The ground-level generator adjacent to Building E (south) will meet the EPA's Tier 4 Final emissions standards; or</p>	LTS

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		(b) The four emergency generators at building E will be permitted to operate up to 26 hours per year for maintenance and testing, which is below the BAAQMD requirement of 50 hours per year.	
AQ-4: The project would not result in other emissions (such as those leading to odors) adversely affecting a substantial number of people.	LTS	N/A	N/A
AQ-5: The project, in combination with past, present, S and reasonably foreseeable projects, could result in cumulatively considerable air quality impacts.		Mitigation Measure AQ-2a, Mitigation Measure AQ-2b, Mitigation Measure AQ-3.	LTS

Cultural Resources (CR)

CR-1: The project would result in a substantial adverse change in the significance of a historical resource.	S	<p>Mitigation Measure CR-1a: Perry's Fuel & Feed Shed Archival Documentation. In consultation with the City of Redwood City Planning Division, the project applicant would document Perry's Fuel & Feed (shed) at 1401 Main Street prior to alteration, construction activities, removal, or demolition. A detailed archival record of the building would be prepared, so that a record of the significant resources is maintained for public information. Prior to the commencement of construction or demolition activities for the proposed project, professionals qualified under the Secretary of the Interior's Professional Qualifications Standards (in history or architectural history) (36 Code of Federal Regulations [CFR] Part 61) would prepare archival materials consistent with the standards of the National Parks Service (NPS) Historic American Building Survey (HABS)/Historic American Engineering Record (HAER) documentation. The record for the shed would be equivalent to HABS/HAER Level III documentation, and would consist of:</p> <ul style="list-style-type: none"> • Drawings/Sketch plans (illustrating the exterior elevations of the shed may be produced in computer-assisted drafting format, or based on as-built drawings, if available). • Photographs (archival quality, photograph key, and photograph log). • Written historical data (including significance statement, narrative building description, and historical context). The materials would be compiled as a detailed record that reflects the shed's historical significance. 	SU
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		<p>If digital photography is used, the ink and paper combinations for printing photographs must be in compliance with National Register of Historic Places (NRHP) and National Historic Landmarks photo expansion policy and have a permanency rating of approximately 115 years. Digital photographs will be taken as uncompressed tagged image file (TIF) format. The size of each image will be 1,600 by 1,200 pixels at 300 pixels per inch (ppi) or larger color format. Photograph views for the dataset would include: 1) contextual views; 2) views of each side of each building and interior views, (where possible and applicable); 3) oblique views of the building; and 4) detail views of character-defining features. All views would be referenced on a photographic key. This photograph key would be on a map of the resource and would show the photograph number with an arrow indicating the direction of the view. Efforts should be made to locate, collect, and reproduce construction drawings, plans, and historic photographs of the resources to include in the dataset. The total number of photographs in the datasets would not exceed 15 views for the shed.</p> <p>Following completion of the HABS/HAER documentation, the record would be submitted to the City of Redwood City Planning Division for final approval. The final archival-quality documentation materials would be placed on file with the City of Redwood City, local museums, and libraries (including, at a minimum, the San Mateo County History Museum (Redwood City) and the Local History Archive Room (Karl A. Vollmayer Collection) of the Redwood City Public Library.</p> <p>Mitigation Measure CR-1b: Perry's Fuel & Feed Shed Permanent Interpretative Display. The project applicant would be required to create a permanent interpretive display/panel/signage to the satisfaction of the City of Redwood City Planning Division for public exhibition concerning the history of Perry's Fuel & Feed Shed, the site, and the feed and fuel industry in Redwood City. The interpretive display/panel/signage would include information from the archival documentation prepared under Mitigation Measure CR-1a. The permanent interpretive display/panel/signage would be installed in the project site in a highly visible public area on the site of the rebuilt shed structure. Displayed photographs would include information about Perry's Fuel & Feed Shed, the date of the photograph, and photo credit/photo collection credit. The City of Redwood City Planning Division would be responsible for reviewing and approving the interpretive display. All costs associated with the development and installation of the permanent interpretive display would be borne by the project applicant.</p>	

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Impact	Significance without Mitigation	Mitigation Measure	Significance with Mitigation
		<p>Mitigation Measure CR-1c: Shed Deconstruction, Architectural Salvage, and Reuse. The project applicant would be required to consult with the City of Redwood City Planning Division regarding the feasibility of potential deconstruction, salvage, and reuse of architectural features from Perry's Fuel & Feed Shed that would serve as important artifacts and physical reminders of the shed's material existence. Examples of the property's character-defining features that could be potentially salvaged, reused, and integrated into the project design are the corrugated metal siding and roofing, gable roof form with louvered-sided monitor, the rectangular plan of the warehouse, and Ghost signage, which are illustrated in Appendix CR of the report titled <i>Historical Resource Inventory and Evaluation Report, South Main Mixed-Use Project</i> prepared by AECOM. To the extent that it is reasonable and feasible as determined by the City, the project applicant would, through careful methods of planned deconstruction to avoid damage and loss, salvage character-defining features and historic materials for reuse in new construction on the site. No deconstruction or salvage of architectural materials would occur until HABS documentation with photographic inventory of key exterior features and materials is completed (in accordance with Mitigation Measure CR-1a). Historic materials that are contaminated, unsound, or decayed would not be included for salvage and re-use and would be replaced with like and in-kind modern materials.</p> <p>Mitigation Measure CR-1d: Historic Signage Archival Documentation. In consultation with the City of Redwood City Planning Division, the project applicant would document the "Skate" sign mounted on the former indoor roller rink at 1303 Main Street and the "Main Street Coin-Op Car Wash" sign at 1385 Main Street prior to alteration, construction activities, removal, or demolition. A detailed archival record of the signs would be prepared, so that a record of the significant resources is maintained for public information.</p> <p>Prior to the commencement of construction or demolition activities for the proposed project, professionals qualified under the Secretary of the Interior's Professional Qualifications Standards (in history or architectural history) (36 CFR Part 61) would prepare archival materials consistent with the standards of the NPS HABS/HAER documentation. The record would be equivalent to HABS/HAER Level III documentation, and consist of:</p> <ul style="list-style-type: none"> • Drawing: sketch plan. • Photographs (archival quality, photograph key, and photograph log). 	

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		<ul style="list-style-type: none">Written historical data (including significance statement, narrative description and historical context). The materials would be compiled as a detailed record that reflects the resource’s historical significance. <p>If digital photography is used, the ink and paper combinations for printing photographs must be in compliance with NRHP and National Historic Landmarks photo expansion policy and have a permanency rating of approximately 115 years. Digital photographs will be taken as uncompressed TIF file format. The size of each image will be 1,600 by 1,200 pixels at 300 ppi or larger color format. Photograph views for the dataset would include: 1) contextual views; 2) views of each side of the signs; 3) oblique views of the signs; and 4) detail views of character-defining features. All views would be referenced on a photographic key. This photograph key would be on a map of the resource and would show the photograph number with an arrow indicating the direction of the view. Efforts should be made to locate, collect, and reproduce construction drawings, plans, and historic photographs of the signs to include in the dataset. The total number of photographs in the datasets would not exceed six views for each sign.</p> <p>Following completion of the archival documentation, the record would be submitted to the City of Redwood City Planning Division for final approval. The final archival-quality documentation materials would be placed on file with the City of Redwood City, local museums, and libraries (including, at a minimum, the San Mateo County History Museum (Redwood City) and the Local History Archive Room (Karl A. Vollmayer Collection) of the Redwood City Public Library).</p> <p>Mitigation Measure CR-1e: Historic Signage Salvage, Relocation, and Plaque Installation. Prior to demolition, the project applicant shall remove the “Skate” sign mounted on the former indoor roller rink at 1303 Main Street and the “Main Street Coin-Op Car Wash” sign at 1385 Main Street for salvage and potential reuse. The applicant shall engage a professional in the sign industry to remove the signs and prepare the signs for storage. The applicant shall store the signs either on or off site in a secure location to ensure no damage or theft occurs to the signs during construction activities.</p> <p>The applicant shall integrate the signs into the project design in outdoor or indoor spaces. Per National Park Service <i>Preservation Brief 25: The Preservation of Historic Signs</i> guidance, relocating a sign to an interior such as a lobby is less preferable than keeping a sign outside, but it does preserve the sign.</p>	

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		<p>If the applicant chooses to restore the signs, they shall engage a professional in the sign industry for repairs using the National Park Service <i>Preservation Brief 25: The Preservation of Historic Signs</i> as guidance for the work.</p> <p>The applicant shall install plaques at the relocated signs. The applicant shall engage a qualified historian or architectural historian to prepare text and content for the plaques, which would be reviewed by City of Redwood City Planning Division. The plaques at the relocation sites shall include a brief history of the business the sign was associated with, the significance of the sign, why the sign was moved, the original site address, and the date of relocation. The applicant shall engage a sign-maker to fabricate the plaques for installation at the original and relocation sites of the signage. All costs associated with the development and installation of the plaques would be borne by the project applicant.</p> <p>If it is not feasible for the project applicant to integrate one or both of the signs into the project plans, the project applicant shall make the signage available to museums, archives, and curation facilities; City departments; and nonprofit organizations to preserve, interpret, and display the history of the historical resource. The applicant shall give representatives of these groups the opportunity to relocate the salvage signs for reuse in other locations.</p>	
CR-2: The project could cause a substantial adverse change in the significance of an archaeological resource pursuant to CEQA Guidelines Section 15064.5.	S	<p>Mitigation Measure TRIBAL-1: Procedures for Inadvertent Discovery of Cultural Resources. In the event that sensitive cultural resources are identified during project site preparation or construction activities, work shall be halted until a qualified archaeologist is contacted and makes recommendations. Specifically, if deposits of prehistoric or historic archaeological resources are encountered during project construction activities, all work within an appropriate buffer area around the discovery shall be stopped, and a qualified archeologist meeting federal criteria under 36 CFR Part 61 shall be contacted to assess the deposit(s) and make recommendations.</p> <p>If deposits of prehistoric or historic archeological materials cannot be avoided by project activities, the City shall confirm that the project applicant has retained a qualified archaeologist to evaluate the potential historic significance of the resource(s). If the deposits are determined to be non-significant by a qualified archaeologist, avoidance is not necessary. If the deposits are determined to be potentially significant by the qualified archaeologist, the resources shall be avoided if feasible. If avoidance is not feasible, project impacts shall be mitigated in accordance with the recommendations of the archaeologist, in coordination with the City and CEQA Guidelines Section 15126.4 (b)(3)(C), which requires implementation of a data</p>	LTS

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		<p>recovery plan. The data recovery plan shall include provisions for adequately recovering all scientifically consequential information from and about any discovered archaeological materials and include recommendations for the treatment of these resources. In-place preservation of the archaeological resources is the preferred manner of mitigating potential impacts, because it maintains the relationship between the resource and the archaeological context. In-place preservation also reduces the potential for conflicts with the religious or cultural values of groups associated with the resource. Other mitigation options include, but are not limited to, the full or partial removal and curation of the resource.</p> <p>The City shall confirm that the project applicant has retained a qualified archeologist for the preparation and implementation of the data recovery plan, which shall be conducted prior to any additional earth-moving activities in the area of the resource. The recovery plan shall be submitted to the project applicant, the City, and the Northwest Information Center (NWIC). Once the recovery plan is reviewed and approved by the City and any appropriate resource recovery completed, project construction activity in the area of the find may resume. A data recovery plan shall not be required for resources that have been deemed by the NWIC as adequately recorded and recovered by studies already completed.</p> <p>Mitigation Measure TRIBAL-2: Worker Training. Prior to the issuance of grading permits, the City shall confirm the applicant has required all construction crews to undergo adequate training for the identification of federal- or state-eligible cultural resources; and that the construction crews are aware of the potential for previously undiscovered archaeological resources on site; of the laws protecting these resources and associated penalties; and of the procedures to follow should they discover cultural resources during project-related work.</p>	
CR-3: The project would not disturb human remains, including those interred outside of formal cemeteries.	LTS	N/A	N/A
CR-4: The project, combined with cumulative development, including past, present, and reasonably foreseeable future development, could result in a significant adverse cumulative cultural resources impact.	S	Mitigation Measure TRIBAL-1; Mitigation Measure TRIBAL-2.	SU

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Greenhouse Gas Emissions (GG)			
GG-1: The project would not directly or indirectly generate greenhouse gas emissions that may have a significant impact on the environment.	LTS	N/A	N/A
GG-2: The project would not conflict with an applicable plan, policy, or regulation of an agency adopted for the purpose of reducing the emissions of greenhouse gases.	LTS	N/A	N/A
GG-3: The project, in combination with past, present, and reasonably foreseeable projects, would result in less-than-significant cumulative impacts with respect to greenhouse gas emissions.	LTS	N/A	N/A
Transportation and Traffic (TT)			
TT-1: The project would not conflict with a program plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities.	LTS	N/A	N/A
TT-2: The project would not conflict or be inconsistent with CEQA Guidelines Section 15064.3, subdivision (b).	LTS	N/A	N/A
TT-3: The project would not substantially increase hazards due to geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment).	LTS	N/A	N/A

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TT-4: Cumulative Transportation Impact	LTS	N/A	N/A

Initial Study Impacts Requiring Mitigation Measures (See Appendix IS)

Biological Resources (BIO)

BIO-4a: The project could have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service.	S	<p>Mitigation Measure BIO-1: Nesting Birds Surveys. If construction activities are scheduled during the nesting season, a qualified biologist shall perform pre-construction surveys for nesting birds no more than 14 days prior to the initiation of demolition/construction activities during the early season (January through April), and no more than 30 days prior to the initiation of these activities during the late season (May through August).</p> <p>A qualified biologist shall inspect all trees in and immediately adjacent to the impact areas for nests. If an active nest is found in proximity to the project area with potential to be disturbed by these activities, the biologist, in consultation with the California Department of Fish and Wildlife (CDFW), shall determine the extent of the construction-free buffer zone to be established around the nest.</p> <p>The buffer zones shall remain in place until the young have fledged and are foraging independently and able to disperse from the area of their own ability. A qualified biologist shall monitor the active nests until it is determined the nest is no longer active, at which time construction activities may commence in the buffer area.</p> <p>Mitigation Measure BIO-2: Roosting Bats. Preconstruction Surveys. A qualified biologist shall conduct a preconstruction survey during seasonal periods of bat activity (mid-February through mid-October) to determine suitability of structure(s) or trees as bat roost habitat.</p> <p>Protective Buffer Zone(s). If active bat roosts are found on-site, a suitable buffer from construction shall be established per the biologist. The biologist shall determine the species of bats present and the type of roost.</p> <p>Mitigation and Exclusion. If the bats are identified as common species, and the roost is not being used as a maternity roost or hibernation site, the bats may be evicted using methods developed by a qualified biologist. If special-status bat</p>	LTS
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		species are found to be present, or if the roost is determined to be a maternity roost or hibernation site for any species, then the qualified biologist shall develop a bat mitigation and exclusion plan to compensate for lost roost. The site shall not be disturbed until CDFW approves the mitigation plan.	
Geology, Soils, and Seismicity (GEO)			
GEO-7aii: The project could exacerbate the potential for strong seismic ground shaking.	S	Mitigation Measure GEO-1: Final Geotechnical Report, Plan Review, and Construction Observations. Prior to final project design, a qualified geotechnical engineer shall be retained by the applicant to provide a final geotechnical report, based on additional site investigations, including determination of the presence of expansive soils, as necessary. The final geotechnical report shall include recommendations for foundation design or other measures necessary to conform to the most recent version of the California Building Code. Recommendations of the final geotechnical report shall be implemented in the final project design, and project plans and specifications shall be reviewed by a qualified geotechnical engineer to confirm that the geotechnical recommendations have been adequately incorporated. During construction, a qualified geotechnical engineer shall be retained to observe foundation installation, ground improvements, and fill placement; and to revise geotechnical recommendations in response to site conditions encountered during construction, if necessary.	LTS
GEO-7aiii: The project could exacerbate the potential for seismic-related ground failure.	S	Mitigation Measure GEO-1: Final Geotechnical Report, Plan Review, and Construction Observations.	LTS
GEO-7c: The project could be located on a geologic unit or soil that is unstable or that could become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse.	S	Mitigation Measure GEO-1: Final Geotechnical Report, Plan Review, and Construction Observations.	LTS

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GEO-7d: The project could be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property.	S	Mitigation Measure GEO-1: Final Geotechnical Report, Plan Review, and Construction Observations.	LTS
GEO-7f: The project could directly or indirectly destroy a unique paleontological resource or site or unique geological feature.	S	<p>Mitigation Measure GEO-2: Procedures for Inadvertent Discovery of Paleontological Resources. In the event that sensitive cultural resources are identified during project site preparation or construction activities, work shall be halted until a qualified paleontologist is contacted and makes recommendations. Specifically, if deposits of paleontologist resources are encountered during project construction activities, all work within an appropriate buffer area around the discovery shall be stopped, and a qualified paleontologist meeting federal criteria under 36 CFR Part 61 shall be contacted to assess the deposit(s) and make recommendations.</p> <p>If deposits of paleontological materials cannot be avoided by project activities, the City shall confirm that the project applicant has retained a qualified paleontologist to evaluate the potential historic significance of the resource(s). If the deposits are determined to be non-significant by a qualified paleontologist, avoidance is not necessary. If the deposits are determined to be potentially significant by the qualified paleontologist, the resources shall be avoided if feasible. If avoidance is not feasible, project impacts shall be mitigated in accordance with the recommendations of the paleontologist in coordination with the City and CEQA Guidelines Section 15126.4 (b)(3)(C), which requires implementation of a data recovery plan. The data recovery plan shall include provisions for adequately recovering all scientifically consequential information from and about any discovered paleontological materials and include recommendations for the treatment of these resources. In-place preservation of the paleontological resources is the preferred manner of mitigating potential impacts, because it maintains the relationship between the resource and the context. In-place preservation also reduces the potential for conflicts with the religious or cultural values of groups associated with the resource. Other mitigation options include, but are not limited to, the full or partial removal and curation of the resource.</p>	LTS

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Hazards and Hazardous Materials (HAZ)			
HAZ-9a: The project could create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials.	S	<p>Mitigation Measure HAZ-1: Hazardous Building Materials Survey and Abatement. Prior to building permit issuance for demolition or renovation activities of any structures, the applicant shall retain a certified hazardous waste contractor to determine the presence or absence of building materials or equipment that contain hazardous materials, including asbestos and lead-based paint. If such substances are found to be present, the contractor shall properly remove and dispose of these hazardous materials in accordance with federal and state law. All removal activities shall be completed prior to permit issuance for demolition activities. Following completion of removal activities, the applicant shall submit documentation to the BAAQMD and the City verifying that all hazardous materials were properly removed and disposed.</p> <p>Mitigation Measure HAZ-2: Site Mitigation Plan. Prior to the issuance of a grading permit and before any substantial ground disturbance, the applicant shall hire a qualified environmental professional to prepare a Site Management Plan (SMP) for the project site. The SMP, and any remedial actions required as part of it, shall be implemented by the applicant and its contractors to the satisfaction of the relevant oversight agencies (City of Redwood City Fire Department, San Francisco Bay Regional Water Quality Control Board (RWQCB), and/or designated San Mateo County or State Department oversight agency, or other appropriate agency having jurisdiction) to ensure sufficient minimization of risk to human health and the environment is completed.</p> <p>At a minimum, the SMP shall:</p> <ul style="list-style-type: none"> Establish minimum requirements for worker training and site-specific health and safety plans, to protect the general public and workers in the construction area (note: these requirements and all previous environmental sampling results shall be provided by the applicant to all contractors, who shall be responsible for developing their own construction worker health and safety plans and training requirements). Establish appropriate site-specific cleanup targets for site soils that are protective of human health and the environment, based on the proposed future land uses(s). At a minimum, these targets shall be equal to, or more protective than the RWQCB Ecological Screening Levels (ESLs) for Residential Use; or in the case of contaminants that have naturally occurring background levels that 	LTS

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		<p>exceed the residential ESLs, the target shall be equal to, or more protective than, the regional background level for that contaminant.</p> <ul style="list-style-type: none"> Identify and implement measures such as excavation, containment, or treatment of the contaminated soils to achieve the plan's cleanup targets, and/or to provide protection of future site users from exposure to remaining soil (if any) that exceed the plan's clean-up targets, including: <ul style="list-style-type: none"> Description of post-excavation confirmation sampling requirements. If residual contamination remains at the site above the site-specific cleanup targets, include appropriate controls, including institutional controls where and if necessary, to assure that activities by future users do not expose them to unacceptable health and safety risks. Such controls may include, but are not limited to, visual barriers over contaminated soil, followed by a cap of clean soil or hard surface materials; operation and maintenance protocols for any disturbance of contaminated soils; and recording of deed restrictions, such as activity and use limitations, with the San Mateo County Recorder's Office to assure that the remedy is maintained. If excavated soils are to be reused on site, characterization shall be undertaken to determine that such materials do not exceed the established cleanup targets for the site, or that such reused materials are subject to appropriate controls, as described in the bullet point above for addressing residual contamination. If excess materials are off-hauled, waste profiling of the material shall be completed and documented. Materials classified as nonhazardous waste shall be transported under a bill of lading. Materials classified as hazardous waste shall be transported under a hazardous waste manifest. All materials shall be disposed of at an appropriately licensed landfill or facility. Trucking operations shall comply with the California Department of Transportation and any other applicable regulations, and all trucks shall be licensed and permitted to carry the appropriate waste classification. The tracking of dirt by trucks leaving the project site shall be minimized by cleaning the wheels on exiting and cleaning the loading zone and exit area as needed. Establish procedures for dewatering of construction excavations and/or dewatering of excavated sediments prior to off-hauling (if required), consistent with federal, state, and local regulations, specifying methods of water collection, 	

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		<p>handling, transport, treatment, discharge, and disposal for all water produced by dewatering activities.</p> <ul style="list-style-type: none"> Identify measures to protect future site users from contact with contaminants from the regional groundwater plume, including intrusion of soil-gas vapors emitted from the plume. Such measures may include vapor extraction systems, vapor intrusion barriers, operation and maintenance protocols for any disturbance of groundwater; and recording of deed restrictions, such as activity and use limitations, with the San Mateo County Recorder's Office to assure that the implemented remedy(ies) is maintained. Include contingency measures to address unanticipated conditions or contaminants encountered during construction and development activities. The contingency measures shall establish and describe procedures for responding in the event that unanticipated subsurface hazards or hazardous material releases are discovered during construction, including appropriately notifying nearby property owners, schools, and residents, and following appropriate site control procedures. Control procedures would include, but not be limited to further investigation; and if necessary, remediation of such hazards or releases, including off-site removal and disposal, containment, or treatment. If unanticipated subsurface hazards or hazardous material releases are discovered during construction, the contingency measures addressing unknown contaminants shall be followed. The contingency measures shall be amended as necessary if new information becomes available that could affect implementation of the measures. 	
HAZ-9b: The project could create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment.	S	Mitigation Measure HAZ-1: Hazardous Building Materials Survey and Abatement. Mitigation Measure HAZ-2: Site Mitigation Plan.	LTS
HAZ-9c: The project could emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school.	S	Mitigation Measure HAZ-1: Hazardous Building Materials Survey and Abatement. Mitigation Measure HAZ-2: Site Mitigation Plan.	LTS

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HAZ-9d: The project would be at a site that is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5; and as a result, could create a significant hazard to the public or the environment.	S	Mitigation Measure HAZ-1: Hazardous Building Materials Survey and Abatement. Mitigation Measure HAZ-2: Site Mitigation Plan.	LTS
Hydrology and Water Quality			
HW-10a) The project could violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality.	S	Mitigation Measure HAZ-2: Site Mitigation Plan.	LTS
Noise (NOI)			
NOI-13a: The project could generate a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies.	S	Mitigation Measure NOI-1: Noise Abatement. The project applicant shall incorporate the following practices into the construction contract agreement documents to be implemented by the construction contractor during the entire construction phase of the project: The project applicant and contractors shall prepare a Construction Noise Control Plan. The details of the Construction Noise Control Plan shall be included as part of the permit application drawing set and as part of the construction drawing set. Limit construction to the hours allowed by the City (7:00 a.m. to 8:00 p.m.) and prohibit construction on Sundays and holidays. At least 21 days prior to the start of construction activities, all off-site businesses and residents within 300 feet of the project site shall be notified of the planned construction activities. The notification shall include a brief description of the project, the activities that would occur, the hours when construction would occur, and the construction period's overall duration. The notification shall include the telephone numbers of the City's and contractor's authorized representatives that are assigned to respond in the event of a noise or vibration complaint. At least 10 days prior to the start of construction activities, a sign shall be posted at the entrance(s) to the job site, clearly visible to the public, that includes permitted construction days and hours, as well as the telephone numbers of the City's and contractor's authorized representatives that are assigned to respond in the event of	LTS

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		<p>a noise or vibration complaint. If the authorized contractor's representative receives a complaint, he/she shall investigate, take appropriate corrective action, and report the action to the City.</p> <p>During the entire active construction period, equipment and trucks used for project construction shall use the best available noise control techniques (e.g., improved mufflers, equipment redesign, use of intake silencers, ducts, engine enclosures, and acoustically attenuating shields or shrouds), wherever feasible.</p> <p>Require the contractor to use impact tools (e.g., jack hammers and hoe rams) that are hydraulically or electrically powered wherever possible. Where the use of pneumatic tools is unavoidable, an exhaust muffler on the compressed air exhaust shall be used along with external noise jackets on the tools.</p> <p>Include noise control requirements for equipment and tools, including concrete saws to the maximum extent feasible. Such requirements could include but are not limited to performing work in a manner that minimizes noise; and undertaking the noisiest activities during times of least disturbance to nearby sensitive receptors.</p> <p>During the entire active construction period, stationary noise sources shall be located as far from sensitive receptors as possible, and they shall be muffled and enclosed in temporary sheds, or insulation barriers or other measures shall be incorporated to the extent feasible.</p> <p>During the entire active construction period, noisy operations shall be combined so that they occur in the same time period so that the total noise level produced would not be significantly greater than the level produced if the operations were performed separately (and the noise would be of shorter duration).</p> <p>Select haul routes that avoid the greatest amount of sensitive use areas.</p> <p>Signs shall be posted at the job site entrance(s), in the on-site construction zones, and along queueing lanes (if any) to reinforce the prohibition of unnecessary engine idling. All other equipment shall be turned off if not in use for more than 5 minutes. The sign shall be designed in accordance with the Redwood City Municipal Code Chapter 24.33.</p> <p>During the entire active construction period and to the extent feasible, the use of noise-producing signals, including horns, whistles, alarms, and bells, shall be for safety warning purposes only. The construction manager shall use smart back-up alarms, which automatically adjust the alarm level based on the background noise</p>	

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		<p>level, or switch off back-up alarms and replace with human spotters in compliance with all safety requirements and laws.</p> <p>For any construction work outside permitted hours, the applicant shall apply for a permit as outlined under the Redwood City Municipal Code Section 24.34. The applicant and construction contractor shall follow any additional noise abatement measures outlined in the permit, if granted. Prior to issuance of the permit, the applicant shall provide documentation prepared by a qualified noise consultant demonstrating that the construction activity will not result in an exceedance of the acceptable interior noise levels established by the City for residential districts (45 A-weighted decibel [dBA] interior). Any permitted nighttime construction activities shall be subject to monitoring to ensure that the acceptable noise levels prescribed by the permit are being maintained. A number of feasible methods exist to reduce nighttime construction noise, and could include a combination of the following, or others as identified by the qualified noise consultant:</p> <p>Enclose stationary noise sources, such as pumps, compressors, and generators in shipping containers or other types of enclosures that are solid and block the line of sight between the construction equipment and sensitive receptors.</p> <ul style="list-style-type: none"> • Locate noise-attenuating buffers such as structures, truck trailers, or spoil piles between noise sources and sensitive receptors to block the line of sight between the construction equipment and sensitive receptors. • Limit the operation of construction equipment to the minimum necessary to accomplish the planned work activities. • Maximize the distance between nighttime construction activities and nearby residential uses. • In the event that thresholds are exceeded, the contractor will provide information to the City within 48 hours of the exceedance, identifying the source of the exceedance and corrective actions to reduce the noise. <p>If noise complaints are received due to nighttime construction noise, the City and the contractor will meet to discuss other options that can further reduce noise levels at the sensitive receptor. One option may be acoustic barriers (e.g., lead curtains or sound barriers) that could be installed on the receptor's property, which can reduce construction noise levels by approximately 5 dBA.</p>	

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NOI-13b: The project could generate excessive vibration or ground-borne noise levels.	S	<p>Mitigation Measure NOI-2: Prepare and Implement a Vibration Control Plan. Prior to the issuance of any building permit for any phase of project development, the project applicant shall develop a Vibration Reduction Plan in coordination with an acoustical consultant, geotechnical engineer, and construction contractor, and submit the Plan to the City's Chief Building Official for review and approval. The Plan shall include measures demonstrated to ensure vibration exposure for all vibration-sensitive receptors in the vicinity of the project site is less than 80 vibration decibels (VdB). Measures and controls shall be identified based on project-specific final design plans, and may include, but are not limited to, some or all of the following to ensure compliance with the City's performance standards:</p> <ul style="list-style-type: none"> • Buffer distances, the type of equipment, and the technique of pile installation shall minimize construction vibration for adjacent existing buildings and vibration-sensitive uses, consistent with the above-described performance standards. • Designate a disturbance coordinator, and conspicuously post this person's number around the project site, in adjacent public spaces, and in construction notifications. The disturbance coordinator shall be responsible for responding to any complaints about construction activities. The disturbance coordinator shall receive all public complaints about construction disturbances; and, in consultation with the City, is responsible for determining the cause of the complaint and implementation of feasible measures to be taken to alleviate the problem. The City shall have the authority to halt vibration-generating activity if necessary to protect public health and safety. • Adjacent vibration-sensitive uses (i.e., residential, educational, religious, lodging) within 100 feet of construction activity shall be notified of the construction schedule, as well as the name and contact information of the project disturbance coordinator. 	LTS
Tribal Cultural Resources (TRIBAL)			
TRIBAL-18 a: The project could cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code Section 21074 as either a site, feature, place, cultural landscape that is	S	<p>Mitigation Measure TRIBAL-1: Procedures for Inadvertent Discovery of Cultural Resources. In the event that sensitive cultural resources are identified during project site preparation or construction activities, work shall be halted until a qualified archaeologist is contacted and makes recommendations. Specifically, if deposits of prehistoric or historic archaeological resources are encountered during</p>	LTS

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geologically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is: Listed or eligible for listing in the California Register of Historical Resources, or in local register of historical resources as defined in Public Resources Code Section 5020.1(k); A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resources Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.		<p>project construction activities, all work within an appropriate buffer area around the discovery shall be stopped, and a qualified archeologist meeting federal criteria under 36 CFR Part 61 shall be contacted to assess the deposit(s) and make recommendations.</p> <p>If deposits of prehistoric or historic archeological materials cannot be avoided by project activities, the City shall confirm that the project applicant has retained a qualified archaeologist to evaluate the potential historic significance of the resource(s). If the deposits are determined to be non-significant by a qualified archaeologist, avoidance is not necessary. If the deposits are determined to be potentially significant by the qualified archaeologist, the resources shall be avoided if feasible. If avoidance is not feasible, project impacts shall be mitigated in accordance with the recommendations of the archaeologist, in coordination with the City and CEQA Guidelines Section 15126.4 (b)(3)(C), which requires implementation of a data recovery plan. The data recovery plan shall include provisions for adequately recovering all scientifically consequential information from and about any discovered archaeological materials and include recommendations for the treatment of these resources. In-place preservation of the archaeological resources is the preferred manner of mitigating potential impacts, because it maintains the relationship between the resource and the archaeological context. In-place preservation also reduces the potential for conflicts with the religious or cultural values of groups associated with the resource. Other mitigation options include, but are not limited to, the full or partial removal and curation of the resource.</p> <p>The City shall confirm that the project applicant has retained a qualified archeologist for the preparation and implementation of the data recovery plan, which shall be conducted prior to any additional earth-moving activities in the area of the resource. The recovery plan shall be submitted to the project applicant, the City, and the NWIC. Once the recovery plan is reviewed and approved by the City and any appropriate resource recovery completed, project construction activity in the area of the find may resume. A data recovery plan shall not be required for resources that have been deemed by the NWIC as adequately recorded and recovered by studies already completed.</p> <p>Mitigation Measure TRIBAL-2: Worker Training. Prior to the issuance of grading permits, the City shall confirm the applicant has required all construction crews to undergo adequate training for the identification of federal- or state-eligible cultural resources; and that the construction crews are aware of the potential for previously</p>	

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		undiscovered archaeological resources on site, of the laws protecting these resources and associated penalties, and of the procedures to follow should they discover cultural resources during project-related work.	
Utilities and Services (UTL)			
UTL-19a: The project could result in insufficient utilities to adequately convey stormwater and wastewater flows, and meet the project water demand.	S	Mitigation Measure UTL-1: Upgrade Existing Pipeline Infrastructure. Issuance of the project building permits is subject to completion of a utilities evaluation report, prepared by a qualified engineer and approved by the City, that substantiates the adequacy of existing utilities at the site or specifies the necessary upgrades to conform to City engineering standards. The utilities evaluation will specifically address the location and sizing of potable and recycled water, sewer, and storm utilities, and identify necessary improvements to conform with City Engineering Standards. These standards include conformance with the City of Redwood City's Engineering Standards Volume 3, Part V, Storm Drain Design Criteria, The City's Engineering Standards Volume 3, Part VI detailing design criteria for public and private sanitary sewer systems, Section VI and Attachment Q and L of the Redwood City Engineering Standard Design Criteria for water, and the Redwood City Recycled Water Ordinance.	LTS
UTL-19b: In case of an emergency, development of the proposed project could contribute to a deficit in emergency water supply.	S	Mitigation Measure UTL-2: Emergency Water Storage. Based on the projected emergency potable water storage requirement for the proposed project, the project applicant shall contribute the funds equivalent to the cost of providing emergency water storage for all proposed uses to fund the design and construction of the planned off-site areawide storage facility. The estimated cost in 2011 dollars is approximately \$3,061 per residential unit or the office equivalent.	LTS

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Parcel F Consistency Analysis Mitigation Measures (See Appendix CNA)			
Air Quality (AQ)			
AQ-3c: The proposed project could expose sensitive receptors to substantial pollutant concentrations.	S	<p>Mitigation Measure AQ-12-1: Unless and until the same or equivalent measures are adopted with a New General Plan, the following Draft New General Plan policy and programs shall be implemented for new development in the Downtown Precise Plan (DTPP) area located within 500 feet of El Camino Real, Veterans Boulevard, and the Caltrain railway (until Caltrain electrification is completed), unless BAAQMD-approved modeling demonstrates that the measures called for in the policy and programs are unnecessary because exposure to TACs and PM_{2.5} would be less than the BAAQMD thresholds of significance:</p> <ul style="list-style-type: none"> Require all land uses proposed within 500 feet of U.S. 101, El Camino Real, and Woodside Road that will house, accommodate, or serve sensitive receptors to incorporate appropriate design and construction features (e.g., filters on heating, ventilation and air conditioning systems) that reduce potential exposure of persons to pollutants. (Draft New General Plan Policy PS-2.6) Sensitive Receptor Protection. Increase protection of sensitive receptors (facilities where individuals are highly susceptible to the adverse effects of air pollutants, such as housing, childcare centers, retirement homes, schools, and hospitals) near high-volume roadways, dry cleaners using perchloroethylene, large gas stations, the Port of Redwood City, and rail yards. Amend the Zoning Ordinance and other regulations to require mitigation measures such as increased indoor air filtration to increase the protection of sensitive receptors near major emission sources. (Draft New General Plan Program PS-7) Sensitive Receptor Siting Requirements. Require projects proposed within 500 feet of high-volume roadways and that house or accommodate sensitive receptors to include an analysis of the potential health risks. Mitigation measures that comply with adopted standards of the BAAQMD for control of odor/toxics for sensitive receptors shall be identified to reduce these risks to acceptable levels. (Draft New General Plan Program PS-8) 	

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Biological Resources (BIO)			
BIO-4a: The proposed project could have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service.	S	Mitigation Measure BIO-15-3: All tree removal and trimming, as well as ground-disturbing activities, shall be scheduled to take place outside of the breeding season (February 15 to August 31). If construction is unavoidable during this time, a qualified biologist shall conduct a survey for nesting birds no more than 3 days prior to the removal or trimming of any tree, and prior to the start of ground-disturbing activities. If active nests are not present, project activities can proceed as scheduled. If active nests of protected species are detected, a buffer will be established around the nest, based on consultation with CDFW, and based on CDFW standards, which buffer shall remain in place until the City has determined, in consultation with a qualified biologist, that the buffer is no longer necessary to avoid significant impacts to the nest. This measure would reduce the potential impacts of the DTPP related to migratory wildlife to a less-than-significant level.	LTS
Cultural Resources (CUL)			
CUL-5b: The proposed project could cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5.	S	<p>Mitigation Measure CUL-7-1: Implementation of the following mitigation measures would reduce potential impacts to undiscovered archeological resources to a less-than-significant level:</p> <p>a) In the event that any deposit of prehistoric or historic archeological materials is encountered during project construction activities, all work within an appropriate buffer area around the discovery shall be stopped, and a qualified archeologist meeting federal criteria under 36 CFR Part 61 shall be contacted to assess the deposit(s) and make recommendations. If deposits of prehistoric or historic archaeological materials cannot be avoided by project activities, the City Planning, Housing, and Economic Development Department shall confirm that the project applicant(s) have retained a qualified archaeologist to evaluate the potential historic significance of the resource(s).</p> <p>If the deposits are determined to be non-significant by a qualified archeologist, avoidance is not necessary. If the deposits are determined to be potentially significant by the qualified archeologist, the resources shall be avoided if feasible. If the City determines that avoidance is not feasible, project impacts shall be mitigated in accordance with the recommendations of the qualified archaeologist, in coordination with the City Planning, Housing, and Economic Development Department and CEQA Guidelines Section 15126.4 (b)(3)(C),</p>	LTS

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		<p>which requires implementation of a data recovery plan. The data recovery plan shall include provisions for adequately recovering all scientifically consequential information from and about any discovered archaeological materials, and include recommendations for the treatment of these resources. In-place preservation of the archaeological resource is the preferred manner of mitigating potential impacts, because it maintains the relationship between the resource and the archaeological context. In-place preservation also reduces the potential for conflicts with the religious or cultural values of groups associated with the resource. Other mitigation options include, but are not limited to, the full or partial removal and curation of the resource. The City Planning, Housing, and Economic Development Department shall confirm that the project applicant(s) have retained a qualified archaeologist for the preparation and implementation of the data recovery plan, which shall be conducted prior to any additional earth-moving activities in the area of the resource. The recovery plan shall be submitted to the project applicant, the City Planning, Housing, and Economic Development Department, and the NWIC. Once the recovery plan is reviewed and approved by the City Planning, Housing, and Economic Development Department and any appropriate resource recovery completed, project construction activity in the area of the find may resume. A data recovery plan shall not be required for resources that have been deemed by the NWIC as adequately recorded and recovered by studies already completed.</p> <p>(b) Prior to the issuance of grading permits in the DTPP area, the City Planning, Housing, and Economic Development Department shall confirm that any development applicant has required all construction crews to undergo training for the identification of federal or state-eligible cultural resources, and that the construction crews are aware of the potential for previously undiscovered archaeological resources in the plan area; of the laws protecting these resources and associated penalties; and of the procedures to follow should they discover cultural resources during project-related work. All future individual development projects proposed in the DTPP area will be subject to applicable CEQA review and evaluation requirements; and to the extent that such projects are found to have the potential to disturb or destroy archaeological resources, appropriate mitigation measures would be required to address any identified significant impacts.</p>	

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CUL-5c: The proposed project could disturb any human remains, including those interred outside of formal cemeteries.	S	Mitigation Measure CUL-7-1.	LTS

Geology and Soils (GEO)

GEO-7aii): The proposed project could expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving strong seismic ground shaking.	S	Mitigation Measure GEO-16-1: The detailed, design-level geotechnical investigations required by the City Building Official shall include analysis of expansive soil hazards, and recommend stabilization measures. Once grading plans have been developed, the actual use of expansive soils in engineered fill construction shall be further evaluated, and the location of primary borrow source areas for fills shall be determined. Additionally, supplemental field and laboratory testing of potential cut materials shall be completed. In addition to observing all cut-and-fill slope construction, the project geotechnical engineer shall inspect and certify that any expansive soils underlying individual building pads and all roadway subgrades have been either removed or amended in accordance with City-approved construction specifications. If expansive soils are not fully remediated on each lot and in the area of all public and private improvements at the time of site development, the project geotechnical engineer shall make site-specific recommendations for grading, drainage installation, foundation design, the addition of soil amendments, and/or the use of imported, non-expansive fill materials, as may be required to fully mitigate the effects of weak or expansive soils, and prevent future damage to project improvements. These recommendations shall be reviewed by a City-retained registered geologist; and following his or her approval, be incorporated into a report to be included with each building permit application, and with the plans for all public and common area improvements. In addition, because proper drainage, in particular, can improve the performance of expansive soils by significantly reducing their tendency to shrink and swell, deed restrictions shall be imposed to prohibit significant modification of finished lot grades that would adversely affect site drainage. Implementation of these measures to the satisfaction of the City, combined with conformance with standard California Building Code, State of California, City of Redwood City, and other applicable regulations, would reduce the potential effect of expansive soils to a less-than-significant level.	LTS
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GEO-7aiii: The proposed project could expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving seismic-related ground failure.	S	Mitigation Measure GEO-16-1.	LTS
GEO-7c: The proposed project could be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse.	S	Mitigation Measure GEO-16-1.	LTS
GEO-7d: The proposed project could be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property	S	Mitigation Measure GEO-16-1.	LTS
GEO-7f: The proposed project could directly or indirectly destroy a unique paleontological resource or site or unique geological feature.	S	Mitigation Measure GEO-7-5: Prior to the issuance of grading or demolition permits, the City Planning, Housing, and Economic Development Department, in coordination with a qualified paleontologist, shall assess individual development project proposals in the DTPP area for the potential to destroy unique paleontological resources. The City Planning, Housing, and Economic Development Department shall require development proposals entailing significant earthworks or deep foundations with the potential to penetrate sedimentary rock layers to incorporate a study by a professional paleontologist to assess the potential for damage of paleontological resources. Should the paleontologist determine that the proposal has the potential to damage paleontological resources, the paleontologist shall provide detailed provisions for the protection of these resources to the City Planning, Housing, and Economic Development Department. These provisions may include the complete avoidance of the resource, in-place preservation, and/or complete data recovery as discussed in Mitigation Measure GEO-7.1 (b). Implementation of this measure would reduce the potential impact on paleontological resources to a less-than significant level.	LTS

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Noise (NOI)			
NOI-13b: The proposed project could generate excessive vibration or ground-borne noise levels.	S	<p>Mitigation Measure NOI-11-3: Reduce ground-borne vibration levels that may be generated by future site-specific demolition and construction activities by imposing conditions of approval on all future projects involving demolition and construction activities, which conditions shall require the following ground-borne vibration abatement measures:</p> <ul style="list-style-type: none"> • Restrict vibration-generating activity to between the hours of 7:00 a.m. and 5:00 p.m., Monday through Friday. Prohibit such activity on weekends and holidays. • Notify occupants of land uses within 200 feet of pile-driving activities of the project construction schedule in writing. • Investigate, in consultation with City staff, possible pre-drilling of pile holes as a means of minimizing the number of percussions required to seat the pile. • Conduct a pre-construction site survey documenting the condition of any historic structure within 200 feet of pile-driving activities. • Monitor pile-driving vibration levels to ensure vibration does not exceed appropriate thresholds for the building (5 millimeters per second [mm/sec] [0.20 inches/sec]) peak particle velocity (ppv) for structurally sound buildings, and 2 mm/sec (0.08 inch/sec) ppv for historic buildings. <p>Mitigation Measure NOI-11-4: Reduce demolition and construction noise impacts on adjacent uses by imposing conditions of approval on all future projects involving demolition and construction activities, which conditions shall require the following conventional construction-period noise abatement measures:</p> <ul style="list-style-type: none"> • Construction Plan. Prepare a detailed construction plan identifying the schedule for major noise-generating construction activities. The construction plan shall identify a procedure for coordination with nearby noise-sensitive facilities so that construction activities and the event can be scheduled to minimize noise disturbance. This plan shall be provided to all noise-sensitive land uses within 500 feet of the construction site. • Construction Scheduling. Ensure that noise-generating construction activity is limited to between the hours of 7:00 a.m. to 8:00 p.m. Monday through Friday. (Redwood City Municipal Code Section 24.30) 	LTS

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		<ul style="list-style-type: none"> • Construction Equipment Mufflers and Maintenance. Equip all internal combustion engine-driven equipment with intake and exhaust mufflers that are in good condition and appropriate for the equipment. • Equipment Locations. Locate stationary noise-generating equipment required on construction project sites as far as possible from sensitive receptors when sensitive receptors adjoin or are near a construction project site. • Construction Traffic. Route all construction traffic to and from the construction sites via designated truck routes to the maximum extent feasible. Prohibit construction-related heavy truck traffic in residential areas where feasible. • Quiet Equipment Selection. Use quiet construction equipment, particularly air compressors, wherever feasible. • Temporary Barriers. Construct solid plywood fences around construction sites adjacent to residences, operational businesses, or noise-sensitive land uses. • Temporary Noise Blankets. Temporary noise control blanket barriers should be erected along building facades of construction sites to attenuate noise from elevated activities if noise conflicts cannot be resolved by scheduling. (Noise control blanket barriers can be rented and quickly erected.) • Noise Disturbance Coordinator. For projects that would last more than 1 year, the City may choose to require project designation of a "Noise Disturbance Coordinator" who would be responsible for responding to any local complaints about construction noise. The Disturbance Coordinator would determine the cause of the noise complaint (e.g., starting too early, bad muffler, etc.), and institute reasonable measures to correct the problem. Post in a conspicuous location a telephone number for the Disturbance Coordinator at the construction site, and include it in the notice sent to neighbors regarding the construction schedule. (The project applicant should be responsible for designating a Noise Disturbance Coordinator, posting the phone number, and providing construction schedule notices. The Noise Disturbance Coordinator would work directly with an assigned City staff member.) 	

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Impact	Significance without Mitigation	Mitigation Measure	Significance with Mitigation
Tribal Cultural Resources (TRIBAL)			
<p>TRIBAL-18a: The proposed project could cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code Section 21074 as either a site, feature, place, cultural landscape that is geologically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:</p> <p>i) Listed or eligible for listing in the California Register of Historical Resources, or in local register of historical resources as defined in Public Resources Code Section 5020.1(k).</p> <p>ii) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resources Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.</p>	S	Mitigation Measure TRIBAL-7-1.	LTS

Notes:

LTS = Less than Significant

N/A = not applicable

S = Significant

SU = Significant and Unavoidable

Chapter 1. Introduction

Discretionary projects in California are required to undergo environmental review under the California Environmental Quality Act (CEQA) of 1970 (California Public Resources Code, Section 21000 et seq.) and the State CEQA Guidelines (California Code of Regulations Title 14, Section 15000 et seq. [14 CCR Section 15000 et seq.]). A discretionary project is defined as “a project which requires the exercise of judgment or deliberation when the public agency or body decides to approve or disapprove a particular activity” (State CEQA Guidelines, Section 15357).

This environmental impact report (EIR) evaluates the impacts of the proposed South Main Mixed-Use project, referred to hereafter as the “proposed project.” The City of Redwood City (City), as the lead agency under CEQA,¹ prepared this EIR to disclose potential environmental impacts resulting from the implementation of the proposed project, and to identify ways to reduce significant impacts through alternatives and mitigation measures. This draft EIR (DEIR) provides a description of the project, the existing conditions in the project vicinity, the potential environmental impacts, recommended mitigation measures, and possible alternatives. The DEIR and a Notice of Availability of the DEIR has been distributed to public agencies, organizations, and the general public; and is available for public review and comments.

After public review of the DEIR, the City will prepare a final EIR (FEIR), in which the City will respond to comments regarding the analysis presented in the DEIR. Although the information in an EIR does not dictate the public agency’s ultimate discretion on the proposed project, the public agency must respond to each significant effect identified in the EIR by making findings under Section 15091 of the State CEQA Guidelines; and if necessary, by making a statement of overriding considerations under State CEQA Guidelines Section 15093. When deciding whether to approve the proposed project, the decision-makers are required by CEQA to consider the environmental effects presented in the FEIR, along with the anticipated benefits of the project.

1.1 Project Overview

The proposed project would develop 540 multi-family residential units, approximately 530,000 square feet of office uses; 29,000 square feet of retail uses; an 8,400-square-foot childcare facility; and 1,828 automobile parking stalls, primarily in underground structures. The project is primarily on 8.3 acres southeast of the intersection of El Camino Real and Maple Street, but also includes a second non-contiguous 0.15-acre parcel at 1304 El Camino Real at the intersection of Jackson Street. A detailed description of the project is provided in Chapter 2, Project Description.

¹ The “lead agency” as defined under CEQA Guidelines Section 15367 is the public agency with principal responsibility for carrying out or approving a project.

1.2 Project History

The project applicant, Greystar LLC, submitted an application in 2018 for a project that included 291 residential units and approximately 550,000 square feet of office and commercial development. This “2018 project” was on the same project site, and was described and analyzed in the July 9, 2019, Notice of Preparation (NOP) and Initial Study supporting this DEIR. However, based in part on public comments received during the NOP review period, the applicant subsequently revised the proposed project to include an additional 249 housing units, and a reduction of approximately 19,000 square feet of office use. This DEIR addresses the revised project as presented above in Section 1.1, Project Overview, and as detailed in Chapter 2, Project Description. Chapter 6, Effects Not Found to Be Significant, revisits the July 9, 2018 Initial Study, and provides relevant updates to the analysis to account for the subsequent revisions to the proposed project.

1.3 Organization and Scope of the EIR

1.3.1 Scope of the EIR

CEQA requires consideration of a wide range of resource areas, such as aesthetics, air quality, cultural resources, hydrology, noise, and transportation. Pursuant to Section 15143 of the State CEQA Guidelines, a lead agency may limit an EIR’s discussion of environmental impacts to those specific resource areas where significant impacts on the environment may occur. To determine which resource areas would potentially experience significant environmental impacts, the City evaluated the results of literature and database searches; professional judgment; a review of project characteristics; an Initial Study; and comments on the NOP from agencies and the public. For a complete listing of environmental topics covered in this DEIR, see Chapter 3.0, Environmental Evaluation.

The environmental analysis in this EIR has been prepared at a project level of detail focused on the specific proposed land uses and associated construction activity. A project-level EIR “should focus primarily on the changes in the environment that would result from that development project ... [and] examine all phases of the project including planning, construction, and operation” (State CEQA Guidelines, Section 15161).

1.3.2 Organization of the EIR

The content and format of this EIR are designed to meet the requirements of CEQA and the State CEQA Guidelines (Sections 15120 through 15132). The EIR is organized into the following chapters:

- The **Executive Summary** presents an overview of the proposed project; a summary of the alternatives being considered; a discussion of known areas of controversy; and a listing of the impacts and mitigation measures in a tabular format, including the significance of impacts before and after proposed mitigation measures.
- **Chapter 1, “Introduction,”** explains the CEQA process and the purpose of this EIR; provides an overview of the proposed project; provides information on public participation; and outlines the organization and scope of the document.
- **Chapter 2, “Project Description,”** provides background on the proposed project; identifies the project’s objectives; lists the regulatory requirements of the project; and describes the proposed land uses, operational characteristics, and construction activities.

- **Chapter 3, “Environmental Evaluation,”** is divided into five sections. Section 3.0 introduces the chapter and explains the approach to the environmental analysis. Each of the remaining five sections is devoted to a particular topic area and describes the environmental setting (the regulatory framework and the existing conditions). Following the setting information, each section presents an analysis of impacts that would result from construction and operation of the proposed project, including potential cumulative impacts. Where applicable, each section identifies mitigation measures that would avoid or eliminate significant impacts, or reduce them to less than significant.
- **Chapter 4, “Significant Unavoidable Impacts,”** identifies the significant impacts of the proposed project that would remain significant with implementation of recommended mitigation measures.
- **Chapter 5, “Alternatives to the Project,”** presents the impact analysis for the No Project Alternative and two project alternatives. The chapter also describes the alternatives that were considered, but eliminated from further consideration.
- **Chapter 6, “Effects Not Found to be Significant,”** summarizes the results of the project Initial Study (Appendix IS) and Consistency Analysis (Appendix CNA), and describes why no further analysis is warranted for certain resource topics. This chapter also includes a discussion of revisions to the proposed project that occurred following publication of the July 2019 NOP.
- **Chapter 7, “Other Required CEQA Topics,”** analyzes the potential for growth-inducing impacts and irreversible changes that would result from implementing the proposed project.
- **Chapter 8, “Report Preparers,”** lists the individuals who were involved in preparing this EIR.
- **Technical appendices** present the background information that supports the EIR.

1.4 Environmental Review Process

1.4.1 NOP

Pursuant to State CEQA Guidelines Section 15063, the City determined that the proposed project could result in potentially significant environmental impacts and that an EIR would be required. In compliance with Section 21080.4 of the California Public Resources Code and Section 15082 of the State CEQA Guidelines, the City circulated the NOP of an EIR for the proposed project to the Office of Planning and Research State Clearinghouse and interested agencies and persons on July 9, 2019, with a 30-day review period and a scoping meeting on July 30, 2019. The proposed project was subsequently revised in response to public comments, and now includes additional housing units as outlined above. The City recirculated the NOP on January 29, 2020 to summarize and disclose the proposed revisions to the project, with a 30-day review period and scoping meeting on February 18, 2020.

Each NOP solicited comments regarding the scope of the DEIR from identified responsible and trustee agencies,² as well as interested parties. Appendix NOP of this DEIR presents a copy of both NOPs, and all written comments received during each NOP comment period.

² A “responsible agency” is a public agency other than the lead agency that has discretionary approval power of a project (CEQA Guidelines Section 15381). A “trustee agency” is a California agency that has jurisdiction by law over natural resources affected by a project (e.g., California Department of Fish and Wildlife or State Lands Commission) (CEQA Guidelines Section 15386).

1.4.2 Draft EIR

Based on its review of existing information and the Initial Study completed for this project, the City determined that the proposed project would have potentially significant or significant impacts in the following resource areas, and are therefore discussed in this DEIR:

- Aesthetics
- Air Quality
- Cultural Resources
- Greenhouse Gas Emissions
- Transportation

These topics are evaluated in Sections 3.1 through 3.5 of this DEIR.

This DEIR is being circulated for a 45-day public review period. A copy of the DEIR is also available online at the City's Web site: <http://www.redwoodcity.org/developmentprojects>. During the comment period, the public is invited to submit written or e-mail comments on the DEIR to the City of Redwood City Community Development Department. Written or e-mail comments should be submitted to:

City of Redwood City, Planning Division
Attention: Lindy Chan, Acting Planning Manager
1017 Middlefield Road, Redwood City, CA 94063
(650) 780-7237 Lchan@redwoodcity.org

Verbal and written comments on the contents of the DEIR will also be accepted at a public meeting to be held by the Planning Commission on July 7, 2020, starting at 7 p.m., via teleconference. All participants will join the meeting via teleconference pursuant to Governor Newsom's [Executive Order N-29-20](#). To view or participate in the meeting, see the instructions posted on the agenda 72 hours in advance at www.redwoodcity.org/pc.

Comments should focus on the adequacy and completeness of the EIR, or should address questions about the environmental consequences of project implementation. Concerns regarding adequacy typically relate to the thoroughness of the DEIR in addressing significant adverse physical environmental effects; the identification of mitigation measures for those impacts; and providing sufficient information for public officials to consider when making decisions about the project.

1.4.3 Final EIR

After the close of the public review period for the DEIR, the City will review all comments received on the DEIR, and prepare written responses for each substantive comment received during the public review period. The FEIR will consist of the DEIR, along with all comments received on the DEIR, responses to those comments, and any changes to the DEIR that result from the comments, or needed clarifications and corrections. The FEIR will be made available for review before the City certifies it as complete.

All persons who submitted written comments on the DEIR will be notified of the availability of the FEIR and the date of the scheduled public hearing(s) for the project; responses to comments submitted by public agencies will be provided to those agencies at least 10 days prior to final action. The Planning Commission will first review the FEIR and the project and make recommendations to the City Council. The City Council will then consider and take action on the adequacy of the FEIR, and on whether or not the City should approve the project entitlements.

If the City Council elects to approve the project, it will need to make findings regarding the extent and nature of the significant impacts as presented in the FEIR, and certify the FEIR as complete prior to such approval. Public input is encouraged at all public hearings before the City.

Based on its review of the FEIR, the City Council may find that certain mitigation measures are outside the jurisdiction of the City to implement, or that there are no feasible mitigation measures that would avoid or substantially reduce a given significant impact. In the latter case, the City Council may nonetheless determine that the project is necessary or desirable due to specific overriding considerations, including economic factors; and may approve the project after weighing its benefits against its unavoidable, significant impacts.

1.4.4 Mitigation Monitoring

CEQA Section 21081.6(a) requires lead agencies to adopt a mitigation monitoring and reporting program (MMRP) to describe measures that have been adopted or made a condition of project approval to mitigate or avoid significant effects on the environment. CEQA does not require that the specific reporting or monitoring program be included in the EIR; however, the program will be presented to the City Council for adoption if the council decides to approve the project. In Chapter 3 of this EIR, mitigation measures have been clearly identified and presented in language that will facilitate preparation of an MMRP. In addition, as further described in Chapter 3, mitigation measures provided in the project Initial Study analysis (Appendix IS) and Consistency Analysis (Appendix CNA) will also be included in the MMRP. Any mitigation measures adopted by the City as conditions of approval for the project will be included in an MMRP. The MMRP will clearly identify the party responsible for implementation of each mitigation measure, along with the timing, and method of verification.

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Chapter 2. Project Description

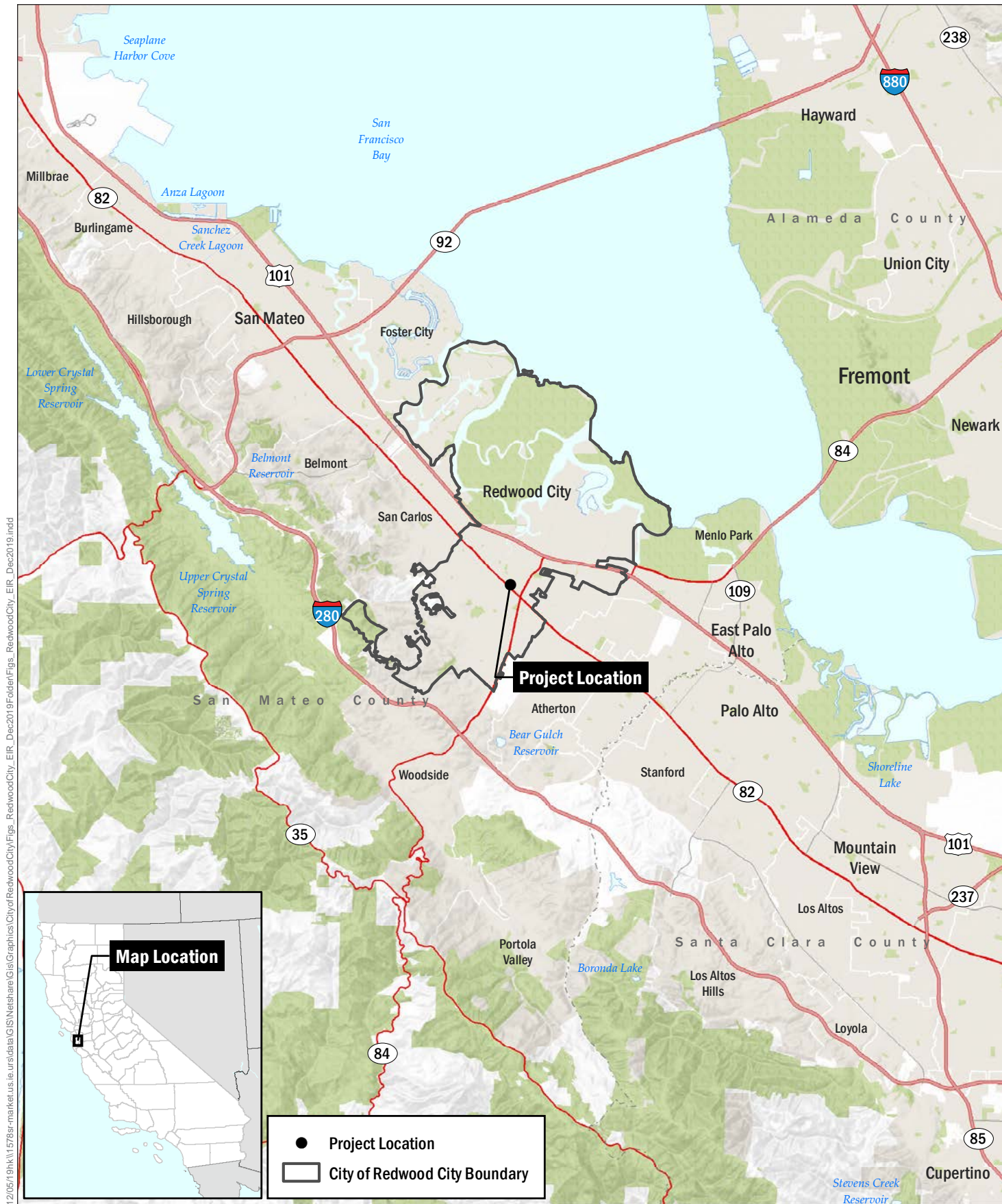
2.1 Project Site and Vicinity

The proposed project site is in the City of Redwood City (City) at the periphery of the City's Downtown core (Figure 2.1 – Project Location), and is composed of five contiguous blocks totaling 8.30 acres (Parcels A through E) and a 0.15-acre portion of a separate block (Parcel F). Parcels A through E are bounded by El Camino Real, Maple Street, Elm Street, Main Street, Caltrain right-of-way, Chestnut Street, Shasta Street, and Cedar Street (Figure 2.2 – Project Site). Parcel F is approximately 1,000 feet northwest of Parcels A through E at the southwestern corner of El Camino Real and Jackson Avenue. Lathrop Street and Main Street run through Parcels A through E in a north-south direction, and Beech Street in an east-west direction. These parcels are regionally accessible via State Route (SR) 84, west of US 101 and 300 feet to the southeast of the proposed project site; and the SR 84/US 101 interchange, about 1 mile to the northeast. Primary local access to the proposed project site is via El Camino Real, which fronts the project site. The proposed project site is in a transit-rich area: Parcels A through E are approximately 0.5 mile from the Redwood City Transit Center (Transit Center), which includes a Caltrain station and San Mateo County Transit District (SamTrans) bus depot, and one block from the nearest SamTrans bus stop; Parcel F is in the City's Downtown core, approximately 0.3 mile southeast of the Transit Center.

Existing use of the proposed project site is primarily auto sales, repair, and warehouse space, including one multi-tenant residential building owned by the City; a restaurant; and a former indoor roller rink. Uses surrounding the site include auto repair shops, small commercial buildings, large multi-tenant residential developments, some retail, and a recently approved 109,000-square-foot office building, currently under construction.

The proposed project site's six blocks are currently developed, and configured as follows (Figure 2.2 – Project Site):

- **Parcel A** consists of two existing parcels totaling about 1.68 acres, and occupying the entire block. Parcel A is bounded by El Camino Real to the west, a concrete-lined drainage channel (Redwood Creek) and Maple Street to the north, Lathrop Street to the east, and Beech Street to the south. The site is currently occupied by a car dealership with existing buildings in the western 25% of the site, and asphalt-paved parking lots covering the remainder of the site.
- **Parcel B** consists of four existing parcels totaling about 1.39 acres, and is bounded by El Camino Real to the west, Beech Street to the north, Lathrop Street to the east, and Cedar Street to the south. The site is occupied by a car dealership and service buildings that cover about 65% of the site, with asphalt-paved parking lots in the southwestern and northwestern portions of the site.



12/05/19/kk/1578sr-market.us.ie.urs/data/GIS/NetShare/GIS/Graphics/CityofRedwoodCity/Figs_RedwoodCity_EIR_Dec2019/figs_RedwoodCity_EIR_Dec2019.indd

Data Source: ESRI, 2019.



PROJECT LOCATION

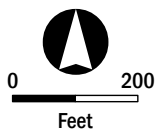
South Main Mixed-Use Development Project
City of Redwood City, California

FIGURE 2.1

03/23/20 h:\City of Redwood City\Figs_RedwoodCity_EIR_1304_ElCamino_MAR2020.indd



Data Source: ESRI, 2019.



PROJECT SITE

South Main Mixed-Use Development Project
City of Redwood City, California

FIGURE 2.2

- **Parcel C** consists of five existing parcels totaling about 1.50 acres. The site is bounded by Lathrop Street to the west, Beech Street to the north, Main Street to the east, and Cedar Street to the south. The site is occupied by an existing auto body shop building in the southwestern corner that covers about 25% of the site, with asphalt-paved parking lots covering the remainder of the site. A portion of the parcel is occupied by a City-owned multi-family development, with 22 below-market-rate units and a manager's unit.
- **Parcel D** is an L-shaped parcel totaling about 1.27 acres. Parcel D encompasses approximately 80% of the block bounded by Lathrop Street to the west, Elm Street to the north, commercial properties and Main Street to the east, and Beech Street to the south. The site is occupied by an asphalt-paved parking lot with a detailing shop on the southern end, as well as a restaurant, car storage, and office space that is not occupied. Parcel D does not include the four one-story buildings at the northeastern portion of this block.
- **Parcel E** consists of three existing parcels totaling about 2.46 acres and occupying the entire block. The site is bounded by Main Street to the west, Beech Street to the north, the Caltrain railroad tracks to the northeast, Chestnut Street to the southeast, and Shasta Street to the south. Parcel E is bisected by Cedar Street. The site is predominantly occupied by an asphalt-paved parking lot, and a commercial/industrial building along the southeastern edge of the property that covers less than 20% of the site. A former roller rink, car wash, and historic-era metal shed are also on this parcel.
- **Parcel F** consists of one existing parcel totaling 0.15 acre and occupying the northeastern corner parcel of the block at 1304 El Camino Real. The site is bounded by El Camino Real to the east, Jackson Avenue to the north, and existing development to the west and south. The development adjacent to Parcel F to the south is a historic resource (labeled as "R" in the Downtown Precise Plan [DTPP]). The site is occupied by a former auto repair building that covers a majority of the site.

Parcels A through E are not within the limits of the DTPP but are adjacent to the DTPP. Parcel F is within the DTPP limits.

2.2 Planned and Existing Land Uses

As shown on Figure 2.2, Parcels A and B are designated by the General Plan and zoned Mixed-Use Corridor – El Camino Real (MUC-ECR). Parcels C, D, and E are designated in the General Plan and zoned Mixed-Use Transitional (MUT).³ Parcel F is in the DTPP/Mixed-Use Downtown General Plan and zoning designation. The MUC-ECR designation is intended to support major transit and complementary commercial and residential uses; encouraging transit use, bicycle use, and pedestrian activity. The MUT zoning district is applicable to areas transitioning from lower-density land uses to higher-density mixed-use or commercial uses. Increased height and density are allowed in the MUT for projects that provide specified community benefits such as affordable housing, child care, open space, and community facilities. The DTPP designation applicable to Parcel F is intended to stimulate development in the City's Downtown core.

Existing uses on the project parcels are shown in Table 2.1.

2.3 Surrounding Land Uses

The proposed project site is surrounded by commercial and residential uses, as shown on Figure 2.3 – Surrounding Land Uses. The area north of Parcel A is occupied by a large residential development. Across El Camino Real, there are multiple one-story commercial buildings, and a five-story mixed-use

³ Amendments to the General Plan and Zoning Ordinance that revised the zoning/designation on Parcels C, D, and E from Mixed Use Live/Work to MUT became effective on February 26, 2020.

Table 2.1 Proposed Project – Existing Parcels and Uses

Parcel	Parcel SF	Address	APN	APN SF	Building SF	Existing Use
Parcel A						
	80,672	1555 El Camino Real	053-182-020	21,066	9,972	Hopkins Acura
		1555 El Camino Real	053-182-040	52,278	992	Hopkins Acura
Parcel B						
	54,187	1601 El Camino Real	053-185-060	43,338	34,798	Towne Ford
		1635 El Camino Real	053-185-070	9,287	-	Towne Ford
		1679 El Camino Real	053-185-040	3,001	-	Towne Ford
		1679 El Camino Real	053-185-050	5,153	-	Towne Ford
Parcel C						
	65,132	111 Cedar	053-184-050	19,963	9,541	Towne Auto Body
		--	053-184-040	12,576	-	Towne Ford car storage
		--	053-184-030	11,273	-	Towne Ford car storage
		--	053-184-020	6,736	-	Towne Ford car storage
		1306 Main	053-184-010	12,491	11,673	22 BMR + 1 manager's unit (4 units occupied)
Parcel D						
	55,394	113 Beech	053-181-070	4,961	2,999	Auto repair (California Detail, Inc.)
		121 Beech	053-181-110	22,717	26,254	Office – for lease
		101 Lathrop	053-181-080	16,139	1,563	Auto storage (Towne Ford)
		112 Elm	053-181-090	8,333	-	Restaurant parking (Main and Elm)
		150 Elm	053-181-100	3,589	1,204	Restaurant (Main and Elm)
Parcel E						
	107,361	1303 Main	053-183-010	23,204	15,120	Entertainment – for lease (formerly Redwood Roller Rink)
		1385 Main	053-183-020	11,374	1,408	Car wash (Main Street Self-Serve Car Wash)
		Cedar St.	N/A	15,438	N/A	Street with City right-of-way easement
		1401 Main	053-186-010	57,345	11,262	Auto storage (historic-era shed)
Parcel F						
	6,510	1304 El Camino Real	053-063-070	6,510		Auto repair (formerly Precision Tune Auto Care)

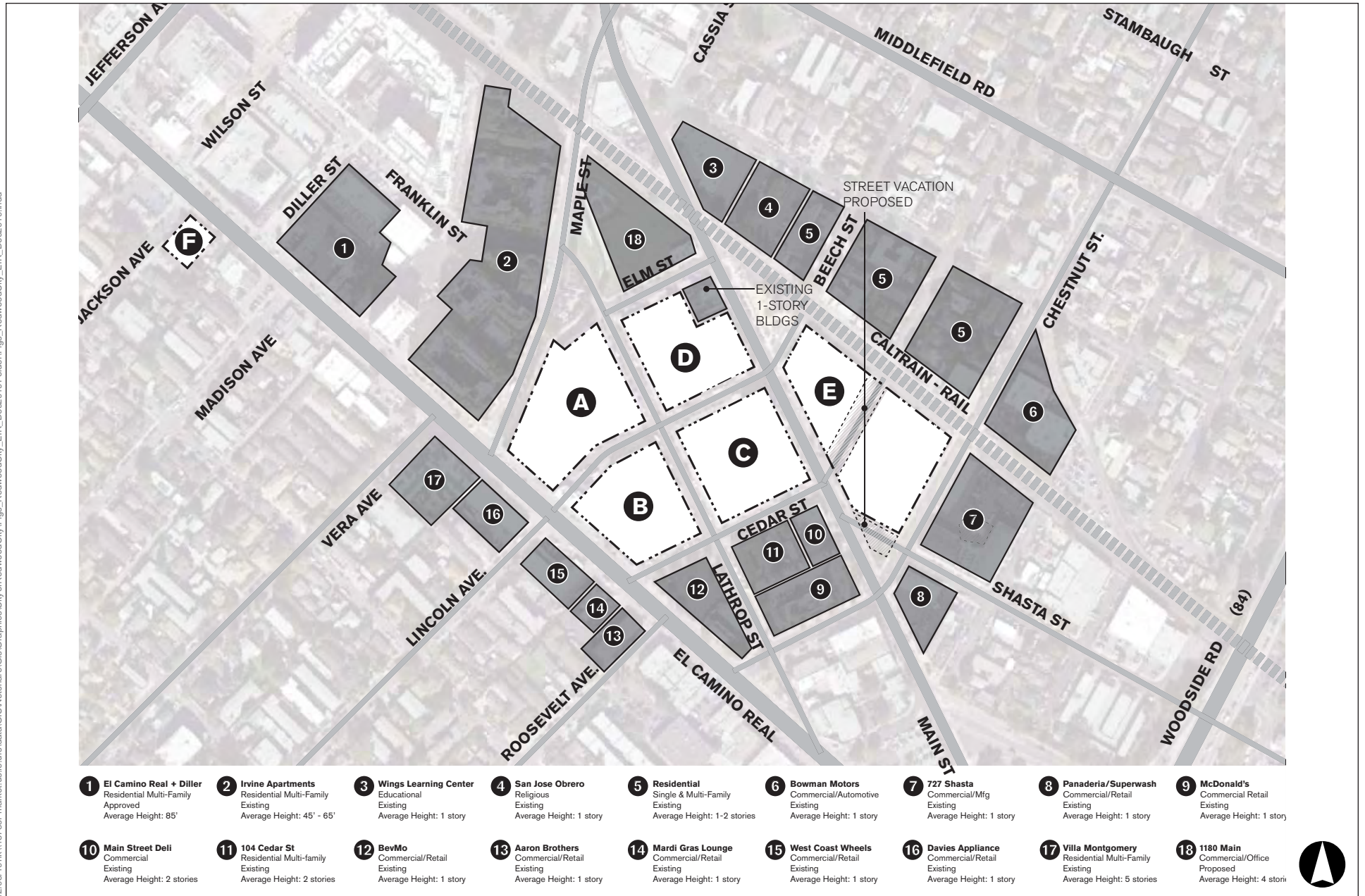
Source: Greystar 2018

Notes:

APN = Assessor's Parcel Number

BMR = Below Market Rate

SF = square foot



Source: WRNS STUDIO, 2019.

SURROUNDING LAND USES

South Main Mixed-Use Development Project
City of Redwood City, California

FIGURE 2.3

residential development at the corner of El Camino Real and Maple Street. Commercial development is south of Parcels B and E, and the Caltrain tracks border the proposed project to the east of Parcel E. A small, City-owned and -operated dog park is north of Parcel E, adjacent to the train tracks and Maple Street. Redwood Creek, which is channelized in the proposed project area, borders Parcel A to the north. Parcel F is surrounded by commercial and residential uses, typically two-story buildings, with a recently completed seven-story residential development directly across El Camino Real.

2.4 Project Objectives

The project applicant has developed the following project objectives:

- Redevelop the property consistent with the land use policies and strategies provided in the Plan Bay Area 2040, El Camino Real Priority Development Area.⁴
- Redevelop the property consistent with the existing Mixed-Use Corridor and Mixed-Use/Transitional General Plan and Zoning designations, including policies that guide the growth and development of Redwood City; establish the basis for zoning regulations and guidance; economic development; transportation improvements; sustainability; City services; parks; and cultural and historic preservation.
- Facilitate the implementation of the El Camino Real Corridor Plan's visions, goals, and strategies to make the Corridor safer and more desirable to walk along and across; and policies supporting community benefits, small businesses, local retail, and a range of housing choices along the Corridor.
- Redevelop an existing industrial area between the El Camino Real and Caltrain corridors with attractive and desirable amenities, including housing, Class A office space, neighborhood-serving retail, publicly accessible open space, and childcare available to all Redwood City residents.
- Create a mixed-use environment that increases vibrancy of the existing area, encourages the reduction of automobile use, and supports activities in Downtown and the El Camino Corridor.
- Meet and exceed the City's Affordable Housing Ordinance and Inclusionary Zoning requirements; and support the realization of the DTPP's affordable housing goals.
- Provide childcare to address Redwood City's existing estimated shortage of child care/early learning spaces for infants/toddlers, preschool-age children, and school-age children.
- Support, enhance, and connect to the City's existing and planned open-space network, including opportunities for pedestrian walkways along the adjacent Redwood Creek.
- Activate frontages along public streets consistent with the City's Complete Streets concept, resulting in enhanced connectivity between the project and surrounding neighborhoods by all modes of transportation, including walking, biking, and driving.
- Provide and enhance connections and access to Downtown Redwood City and the Transit Center to reduce vehicle miles traveled.

⁴ Priority Development Areas, commonly known as PDAs, are areas in existing communities that local city or county governments have identified and approved for future growth. These areas typically are accessible by one or more transit services; and they are often near established job centers, shopping districts, and other services.

- Support the City's Historic Preservation Ordinance and give recognition and consideration to properties and areas that reflect special elements of the City's historic, architectural, cultural, and aesthetic heritage.
- Deliver an economically feasible development, balancing market conditions, city objectives, and community benefits.

The City of Redwood City has developed the following project objectives:

- Support mixed-use development that places residential and commercial uses in close proximity to each other, and close to transit options.
- Support community benefits, and help the City to achieve its affordable housing goals through the inclusion of a range of housing choices and affordability types along the Corridor.
- Support the Council's top three priority focus areas of strategic initiatives and goals for housing, transportation, and children and youth.
- Improve pedestrian, bicycle, and open spaces connections to support the circulation network for all modes of travel.

2.5 Project Characteristics

The proposed project would include one building each on Parcels A, D, and F, developed with primarily residential uses; and four additional buildings on Parcels B, C, and E, where the primary use would be commercial office space (Figure 2.4 – Proposed Project Site Plan). The proposed project would develop 540 multi-family residential units, including 252 units on Parcel A, 249 units on Parcel D, and 39 units on Parcel F. The proposed project would also include approximately 530,000 square feet of office uses, an 8,400-square-foot childcare facility (not including 5,800 square feet of dedicated outdoor space), and 28,800 square feet of retail uses, including 18,800 square feet of ground-floor space on Parcel B designed to accommodate entertainment/retail uses. The approximately 40,000 square feet of public open space proposed throughout the project site would include a public creek walk and park at Shasta Street and Chestnut Street. As detailed further in Section 2.5.6, Site Design, a total of 1,828 parking stalls would be developed, including 222 bicycle stalls.

The following general land uses would be constructed at each parcel:

- **Parcel A** – multi-family residential uses and retail, public, and private open space.
- **Parcel B** – retail and office space, along with a childcare facility, family-oriented entertainment/retail, and private open space.
- **Parcel C** – office space and private open space.
- **Parcel D** – residential and public and private open space.
- **Parcel E** – office space, retail, and public and private open space.
- **Parcel F** – multi-family residential uses and private open space.

2.5.1 Residential

The project would include 540 total residential units composed of a mix of studios, junior 1-bedroom, 1-bedroom, 2-bedroom, and 3-bedroom units ranging in size from approximately 509 square feet to 1,363 square feet, as shown in Table 2.2 below. Parcel A would have 252 units, developed in a seven-story building approximately 85 feet high. The Parcel A residential development would provide 38 units for low-income and 21 units for moderate-income households. Parcel D would have 249 units developed in a seven-story building approximately 85 feet high. The Parcel D residential development would provide 29 low-income units and 20 units for moderate-income households.



Source: WRNS STUDIO, 2019.

PROPOSED PROJECT SITE

South Main Mixed-Use Development Project
City of Redwood City, California

FIGURE 2.4

Table 2.2 Proposed Residential Units on Parcels A, D, and F

Unit Type	Quantity
Studio	64 Parcel A
	67 Parcel D
	30 Parcel F
Junior 1 bedroom	67 Parcel A
	77 Parcel D
1 bedroom	69 Parcel A
	56 Parcel D
	8 Parcel F
1-bedroom townhouse	7 Parcel A
2 bedrooms	40 Parcel A
	34 Parcel D
	1 Parcel F
3 bedrooms	5 Parcel A
3-bedroom townhouse	15 Parcel D
Total Residential	540

Source: Greystar 2018

The applicant (Greystar GP II, LLC) would also develop 39 residential units on the separate Parcel F site at 1304 El Camino Real, approximately 1,000 feet northwest of the primary project site. This additional Parcel F development would replace the existing 22 very low-income units on the City-owned portion of Parcel C, and provide an additional 16 very-low-income units and a manager's unit. The gross total of 147 affordable units includes 22 replacement units that the project would be required to rebuild as part of the City's 1:1 replacement, assuming the applicant acquires the affordable housing on Parcel C (1306 Main Street). Therefore, the proposed project would net 125 new affordable units, equal to approximately 23% of the total proposed residential units.

2.5.2 Office

The proposed project would include approximately 530,000 square feet of office space in four separate buildings on Parcels B, C, and E, as shown in Table 2.3.

Table 2.3 Proposed Office Space

Parcel	Office Square Feet
Parcel B	109,646
Parcel C	166,410
Parcel E (two buildings)	253,944
Total Office	530,000

Source: Greystar 2019

2.5.3 Retail and Childcare Uses

The proposed project would include approximately 28,800 square feet of retail/entertainment uses and 8,400 square feet dedicated to a publicly available childcare facility, as shown in Table 2.4. The ground-floor building on Parcel B fronting El Camino Real would have approximately 19,000 square feet of flexible space to accommodate a range of possible family-friendly entertainment uses such as bowling, laser tag, and a roller rink.

Table 2.4 Proposed Retail and Childcare Space

Parcel	Proposed Uses	Square Feet
Parcel A	Retail	5,286
Parcel B	Childcare	8,367
	Entertainment	18,815
Parcel E	Retail	4,741

Source: Greystar 2018

2.5.4 Open Space

The proposed project would include a mix of public and private open space on all parcels, as shown in Table 2.5. The 94,469 square feet of private open space would be available to building occupants only, while the approximately 40,000 square feet of public open space would be accessible to the public at large. The public open space would include green space and sitting areas, as well as sitting areas associated with the commercial space. Parcel E would contain public open space at the site of Perry's Fuel & Feed Shed (also referred to as Perry's Feed Shed).

Table 2.5 Proposed Open Space

Parcel	Open Space Type	Square Feet
Parcel A	Public	16,364
	Private/Residential	26,405
Parcel B	Public	2,420
	Childcare	5,776
	Private	24,421
Parcel C	Public	1,400
	Private	25,817
Parcel D	Public	0
	Private/Residential	31,125
Parcel E	Public	21,701
	Private	27,381

Source: Greystar 2019

Proposed open space on Parcel A would include a publicly accessible landscaped walkway parallel to Maple Street between El Camino Real and Lathrop Street along the southern side of Redwood Creek. This walkway would serve as pedestrian-friendly connection between Downtown and the neighborhoods

west of El Camino Real. The walkway would also serve as the trailhead for the City's envisioned intra-City creek trail network. In addition, proposed improvements along Lathrop Street, such as bike routes and pedestrian crosswalks with bulb-outs, would de-emphasize automobile traffic and encourage pedestrian and bicycle circulation between El Camino Real and Main Street by facilitating non-auto transportation modes. The resulting Class III bicycle boulevard and associated bicycle and pedestrian facilities along Lathrop Street would encourage reduced vehicle speeds, and would extend the existing sidewalk in the project area to Maple Street. The path would be approximately 8 feet wide on the western side of Lathrop Street. In addition, the proposed project would extend the sidewalk at El Camino Real and Maple Street by approximately 10 feet over Redwood Creek to improve connectivity to the Downtown core.

Parcel E along Main Street would include public open space. The proposed project would close Shasta Street between Main and Chestnut Streets to expand the existing traffic island and create a public open space. The proposed project would also include a pedestrian walkway along the northeastern side of Parcel E, parallel to the Caltrain alignment, which would provide an 8-foot-wide pathway to the existing dog park from Chestnut Street. As part of the public open space, the project would demolish the existing Perry's Feed Shed building at Shasta and Chestnut Streets, and rebuild a replicate structure for public commercial use.

2.5.5 Relocation

There are four occupied units in the 22-unit residential development at 1306 Main Street. The project applicant has proposed purchasing this parcel from the City; and if acquired, constructing replacement units on Parcel F, consistent with Redwood City's housing requirement for 1:1 replacement of affordable residential units. Acquisition of the 1306 Main Street parcel is among the requested project approvals. Consistent with federal Department of Housing and Urban Development regulations for relocation and California Relocation Assistance Law, California Government Code Section 7260, if the acquisition is approved, the project applicant would provide relocation assistance to the City, and the City would then manage the relocation of the residents prior to demolition.

2.5.6 Site Design

The proposed project would demolish all existing buildings on the six project parcels A through F. The proposed project would incorporate landscaping throughout the project site, as outlined in Appendix PLNS (project plans). As described below, Parcels A through D would be developed with one structure each, and Parcel E would have two structures. The proposed building heights and massing are illustrated on Figure 2.5. Development on the non-contiguous Parcel F would construct a six-story, 66-foot-high building fronting El Camino Real.

Parking spaces would be provided as shown in Table 2.6, Parking Summary. The proposed project would include 1,828 parking stalls, provided primarily in subterranean parking structures. The mix of parking stalls shown below includes dedicated carpool and electric vehicle parking, 54 bicycles stalls, and 116 on-street public parking stalls. Parcel A and D would include an additional 168 bicycle stalls beyond the totals shown below. The non-contiguous Parcel F development is not included in the parking summary below, but includes 12 parking stalls and a bicycle storage area.

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AERIAL VIEW LOOKING NORTH TOWARD DOWNTOWN

Source: WRNS STUDIO, 2019.

CONCEPTUAL RENDERINGS

South Main Mixed-Use Development Project
City of Redwood City, California

FIGURE 2.5

Table 2.6 Parking Summary

Stall Type	Number of Stalls
Residential Parking Stalls	517
Office Parking Stalls	1,060
Retail Parking Stalls	117
Childcare Parking Stalls	18
On-Street Parking Stalls	116
Total	1,828

The existing street network would be largely maintained. The segment of Shasta Street between Main Street and Chestnut Street would be closed to create additional green space, as described below under Section 2.5.6.5, Parcel E. Additionally, Beech Street would be reconfigured to align with Lincoln Street to the west; while a segment of Cedar Street east of Main Street would become a private street. The buildings would include architectural elements that would take cues from the existing eclectic mix of low-scale buildings, uses, and designs with an industrial feel, such as brick, curved glass curtainwalls, ribbon windows, corrugated metal (Perry's Feed Shed), and other architectural elements as approved by the City's Architectural Permit. The noncontiguous Parcel F would be developed with a Mediterranean building fronting El Camino Real and Jackson Avenue.

2.5.6.1 Parcel A

The proposed project would construct a seven-story, 85-foot-tall building. The proposed building would include a corner plaza at Maple Street and El Camino Real. The interior courtyard would include private green space, as well as a pool and other amenities. Retail space would front El Camino Real. The main residential lobby would be on Lathrop Street, close to Elm Street. The subterranean parking lot entrance would be available from Beech Street and provide access to a total of 273 parking stalls. Figures 2.6-A and 2.6-B show conceptual renderings of Parcel A development from Lathrop Street and El Camino Real.

The building would integrate different architectural elements, and would be surrounded by landscaping elements such as street trees and native grasses along the sidewalks. Figures 2.7-A, 2.7-B, and 2.7-C show the building's proposed elevations, entrances, and materials.

2.5.6.2 Parcel B

The proposed project would construct a four-story, 75-foot-high building. The building would have two entrances: one at the corner of El Camino Real and Beech Street; and an entry court at Lathrop Street. The main entertainment space would be along El Camino Real. The proposed childcare facility and commercial entry would be along Lathrop Street; the childcare outdoor space would be protected by a wall from the street. The parking lot entrance would be accessible from Beech Street via the proposed loading ramp and provide access to a total of 313 parking stalls. Figures 2.8-A, 2.8-B, and 2.8-C show conceptual renderings of Parcel B development from Cedar Street and from El Camino Real.

The building would integrate different architectural elements, and would be surrounded by landscaping elements such as street trees and native grasses along the sidewalks. Figures 2.9-A and 2.9-B show the building's proposed elevations, entrances, and materials.



LATHROP STREET AT ELM LOOKING WEST TOWARDS CREEK WALK

Source: WRNS STUDIO, 2019.

CONCEPTUAL RENDERINGS PARCEL A

South Main Mixed-Use Development Project
City of Redwood City, California

FIGURE 2.6-A



EL CAMINO REAL AT MAPLE STREET LOOKING EAST TOWARD CORNER PLAZA AND CREEK WALK

Source: WRNS STUDIO, 2019.

CONCEPTUAL RENDERINGS PARCEL A

South Main Mixed-Use Development Project
City of Redwood City, California

FIGURE 2.6-B
2-16



Source: WRNS STUDIO, 2019.

CONCEPTUAL RENDERINGS PARCEL A ELEVATIONS

South Main Mixed-Use Development Project
City of Redwood City, California

FIGURE 2.7-A



Source: WRNS STUDIO, 2019.

CONCEPTUAL RENDERINGS PARCEL A ELEVATIONS

South Main Mixed-Use Development Project
City of Redwood City, California

FIGURE 2.7-B

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ELEVATION KEYNOTES

01.3	BRICK COLOR 3	07.4	DARK METAL FRAMED STOREFRONT
02.1	TEXTURED EXPOSED CONCRETE	07.5	DARK METAL FRAMED CURTAINWALL
02.5	CEMENTITIOUS SIDING	7.10	DARK METAL FRAMED TRELLIS
04.3	CORRUGATED METAL MECHANICAL SCREEN	7.11	DARK METAL C CHANNEL
04.5	PAINTED SIGNAGE	08.1	VISION GLASS
05.2	STANDING SEAM METAL PANEL	08.4	GLASS GUARDRAIL
07.1	DARK METAL PANEL		
07.3	DARK METAL FRAMED CANOPY		



1 CREEKSIDE PROMENADE ELEVATION AT EL CAMINO REAL
3/32" = 1'-0"



2 CREEKSIDE PROMENADE ELEVATION
3/32" = 1'-0"

Source: WRNS STUDIO, 2019.

CONCEPTUAL RENDERINGS PARCEL A ELEVATIONS

South Main Mixed-Use Development Project
City of Redwood City, California

FIGURE 2.7-C
2-19



LATHROP STREET AT CEDAR STREET LOOKING NORTH

Source: WRNS STUDIO, 2019.

CONCEPTUAL RENDERINGS PARCEL B

South Main Mixed-Use Development Project
City of Redwood City, California

FIGURE 2.8-A

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LOOKING NORTHEAST ACROSS THE CEDAR/LATHROP INTERSECTION

Source: WRNS STUDIO, 2019.

CONCEPTUAL RENDERINGS PARCEL B

South Main Mixed-Use Development Project
City of Redwood City, California

FIGURE 2.8-B

2-21



EL CAMINO REAL AT MAPLE STREET LOOKING SOUTH

Source: WRNS STUDIO, 2019.

CONCEPTUAL RENDERINGS PARCEL B

South Main Mixed-Use Development Project
City of Redwood City, California

FIGURE 2.8-C
2-22



Source: WRNS STUDIO, 2019.

CONCEPTUAL RENDERINGS PARCEL B ELEVATIONS

South Main Mixed-Use Development Project
City of Redwood City, California

FIGURE 2.9-A

2-23



Source: WRNS STUDIO, 2019.

CONCEPTUAL RENDERINGS PARCEL B ELEVATIONS

South Main Mixed-Use Development Project
City of Redwood City, California

FIGURE 2.9-B

2.5.6.3 Parcel C

The proposed project would construct a four-story, 62-foot-high building. The primary building entrance would be along Main Street, with a private tenant entrance along Lathrop Street. Parking lot access would be via Cedar Street and provide access to a total of 333 parking stalls. Private open space would be available on the ground-floor inner courtyard of the proposed building, while public open space would be available along Lathrop Street. Figure 2.10 shows a conceptual rendering of Parcel C development from Lathrop Street.

The building would integrate different architectural elements, and would be surrounded by landscaping elements such as street trees and native grasses along the sidewalks. Figures 2.11-A and 2.11-B show the building's proposed elevations, entrances, and materials.

2.5.6.4 Parcel D

The proposed building includes a seven-story, 85-foot-high building. The main entry to the building would be along Lathrop Street. The one-story structures at the corner of Elm and Main Streets are outside the project scope, and are assumed to remain in their current configuration. A secondary entry plaza would be provided along Beech Street. Parking garage entry would be available via Elm Street and provide access to a total of 254 parking stalls.

As shown on Figure 2.12, the building would integrate different architectural elements, and would be surrounded by landscaping elements such as street trees and native grasses along the sidewalks. Figures 2.13-A and 2.13-B show the building's proposed elevations, entrances, and materials.

2.5.6.5 Parcel E

The proposed project would construct two four-story buildings, each 62 feet high. The existing Perry's Feed Shed would be replaced with a similar shed structure that would support the proposed public open space with retail uses. The design of this replacement structure is intended to replicate the historic character of the existing Perry's Feed Shed. Publicly available open space totaling approximately 12,356 square feet would be provided adjacent to the replicate structure. The main entrances for both buildings would be along Main Street, with entry plazas and pedestrian facilities. Parking access would be available at the terminus of Cedar Street and serve a total of 527 parking stalls.

Conceptual renderings of the new structures and proposed public space are shown on Figure 2.14 and Figure 2.15. The buildings would include large windows to create an open feeling along the proposed project's Main Street frontage. The green space would be developed through the closure of a segment of Shasta Street and expansion of the existing traffic island. Figures 2.16-A through E show elevations, entrances, and materials of Parcel E development, with commercial uses fronting Main Street near the existing dog park. In addition, a small retail space is proposed at the corner of Main and Beech Streets to support users of the existing dog park and new offices.

2.5.6.6 Parcel F

The proposed project would construct a six-story, 66-foot-high building fronting El Camino Real, as shown on Figures 2.17-A and 2.17-B. The main entrance to the building would be along El Camino Real. A main lobby and a community room would be on the first floor. The parking lot would be accessible via Jackson Avenue, and the bike storage area would be accessible via the podium parking lot. The proposed building would occupy the entirety of the project lot.



LATHROP STREET AT ELM LOOKING WEST TOWARDS CREEK WALK

Source: WRNS STUDIO, 2019.

CONCEPTUAL RENDERINGS PARCEL C

South Main Mixed-Use Development Project
City of Redwood City, California

FIGURE 2.10

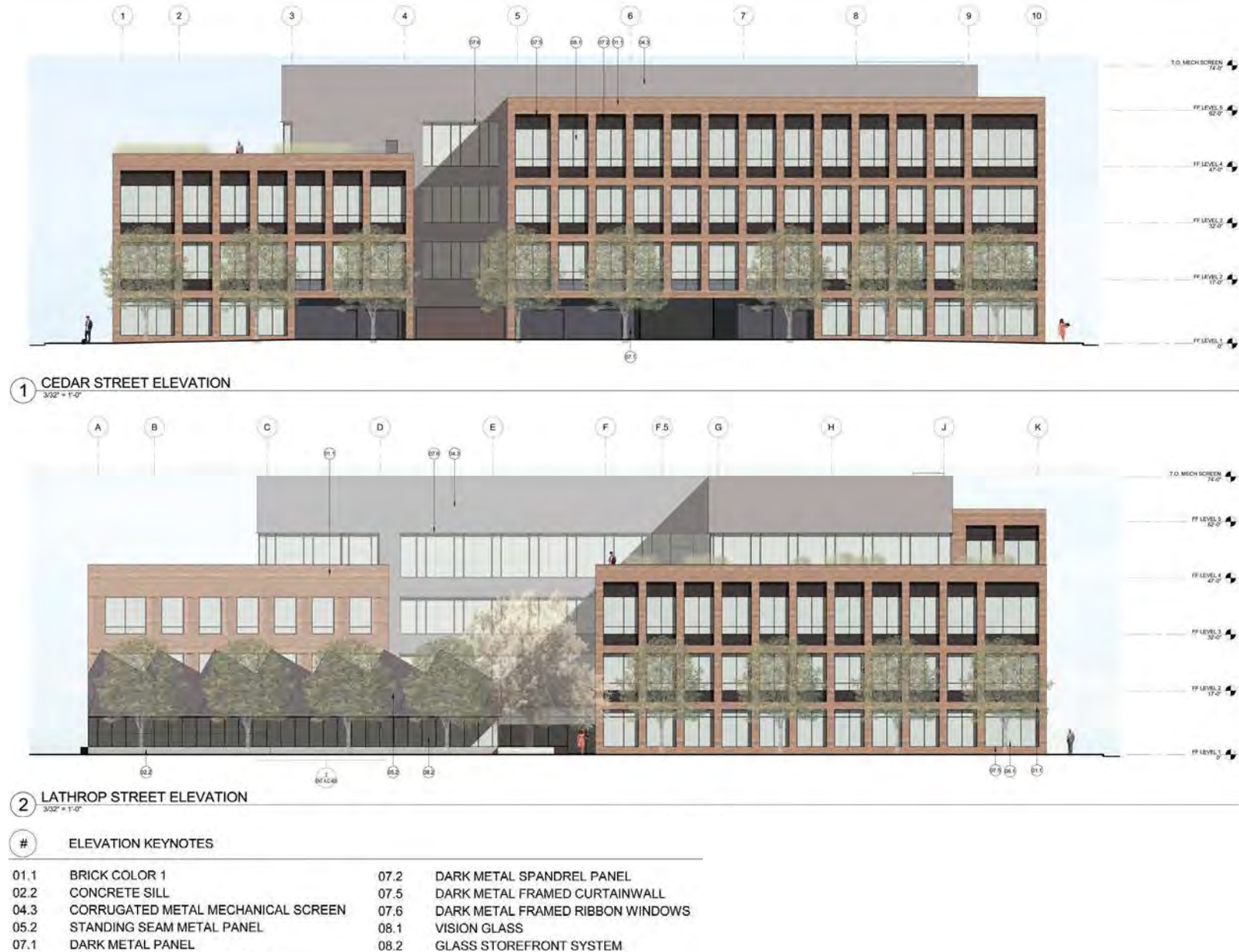


Source: WRNS STUDIO, 2019.

CONCEPTUAL RENDERINGS PARCEL C ELEVATIONS

South Main Mixed-Use Development Project
City of Redwood City, California

FIGURE 2.11-A



Source: WRNS STUDIO, 2019.

CONCEPTUAL RENDERINGS PARCEL C ELEVATIONS

South Main Mixed-Use Development Project
City of Redwood City, California

FIGURE 2.11-B



LATHROP STREET AT ELM LOOKING WEST TOWARDS CREEK WALK

Source: WRNS STUDIO, 2019.

CONCEPTUAL RENDERINGS PARCEL D

South Main Mixed-Use Development Project
City of Redwood City, California

FIGURE 2.12



#	ELEVATION KEYNOTES						
01.3	BRICK COLOR 3	07.1	DARK METAL PANEL	07.7	DARK METAL EXTERIOR SHADE STRUCTURE	11.4	LOADING DOCK ROLL-UP DOOR
02.1	TEXTURED EXPOSED CONCRETE	07.2	DARK METAL SPANDREL PANEL	7.10	DARK METAL FRAMED TRELLIS	11.5	GARAGE ENTRY
04.2	CORRUGATED METAL SIDING	07.3	DARK METAL FRAMED CANOPY	7.13	DARK METAL LOUVERS	11.8	BUILDING ADDRESS SIGNAGE 12" MINIMUM
04.3	CORRUGATED METAL MECHANICAL SCREEN	07.4	DARK METAL FRAMED STOREFRONT	08.1	VISION GLASS		
04.5	PAINTED SIGNAGE	07.5	DARK METAL FRAMED CURTAINWALL	10.3	EXTERIOR "WOOD" SHUTTERS		

Source: WRNS STUDIO, 2019.

CONCEPTUAL RENDERINGS PARCEL D ELEVATIONS

South Main Mixed-Use Development Project
City of Redwood City, California

FIGURE 2.13-A

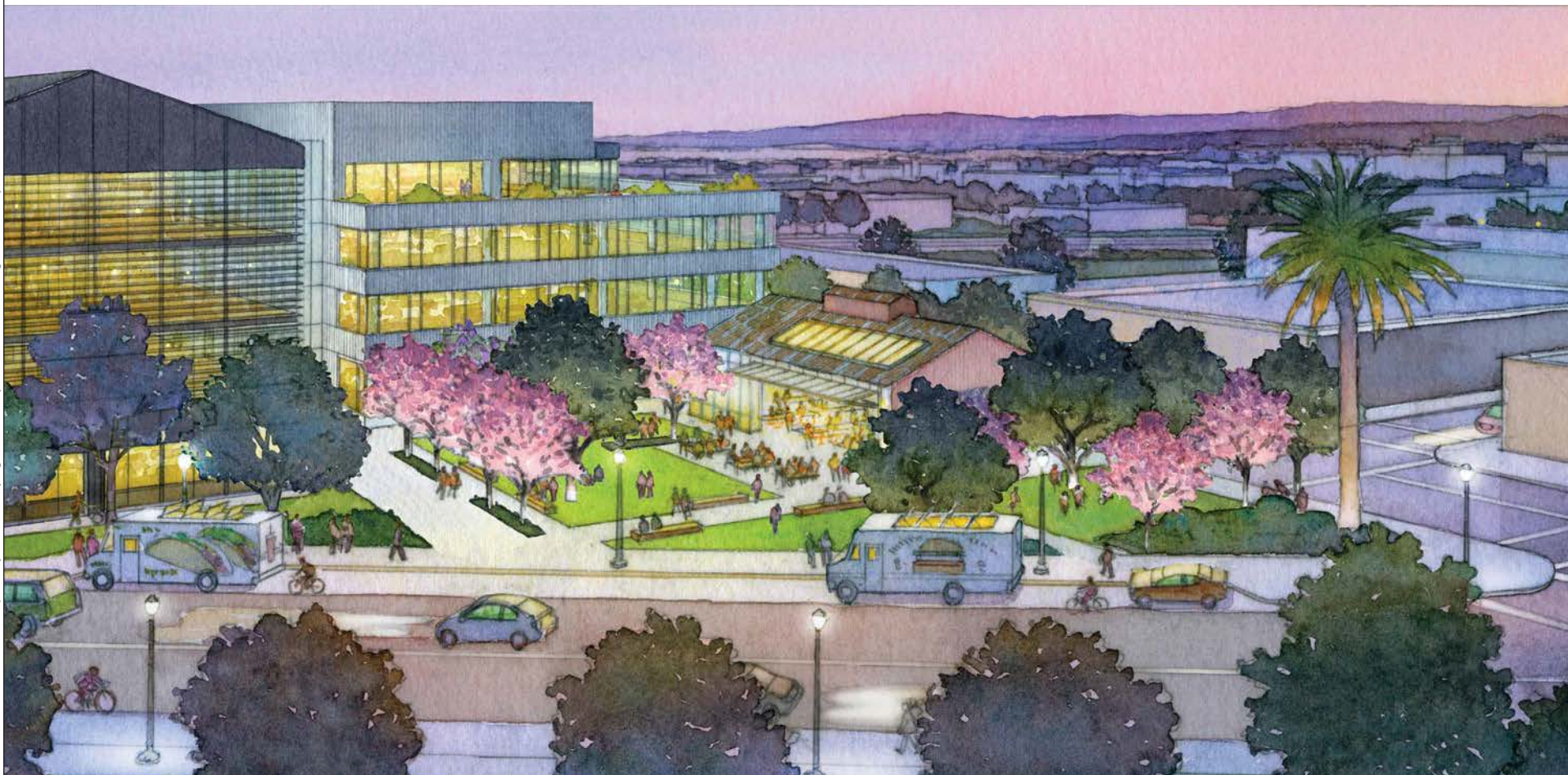


Source: WRNS STUDIO, 2019.

CONCEPTUAL RENDERINGS PARCEL D ELEVATIONS

South Main Mixed-Use Development Project
City of Redwood City, California

FIGURE 2.13-B



PARCEL E & THE SHED LOOKING EAST ACROSS MAIN STREET

Source: WRNS STUDIO, 2019.

CONCEPTUAL RENDERINGS PARCEL E

South Main Mixed-Use Development Project
City of Redwood City, California

FIGURE 2.14

2-32



MAIN STREET DOG PARK LOOKING SOUTH ACROSS BEECH STREET

Source: WRNS STUDIO, 2019.

CONCEPTUAL RENDERINGS PARCEL E

South Main Mixed-Use Development Project
City of Redwood City, California

FIGURE 2.15



#	ELEVATION KEYNOTES	
02.1	TEXTURED EXPOSED CONCRETE	08.2 GLASS STOREFRONT SYSTEM
02.3	SHAPED CONCRETE COLUMN	08.4 GLASS GUARDRAIL
04.3	CORRUGATED METAL MECHANICAL SCREEN	11.6 ELEVATOR OVERRUN BEYOND
07.5	DARK METAL FRAMED CURTAINWALL	

Source: WRNS STUDIO, 2019.

CONCEPTUAL RENDERINGS PARCEL E ELEVATIONS

South Main Mixed-Use Development Project
City of Redwood City, California

FIGURE 2.16-A

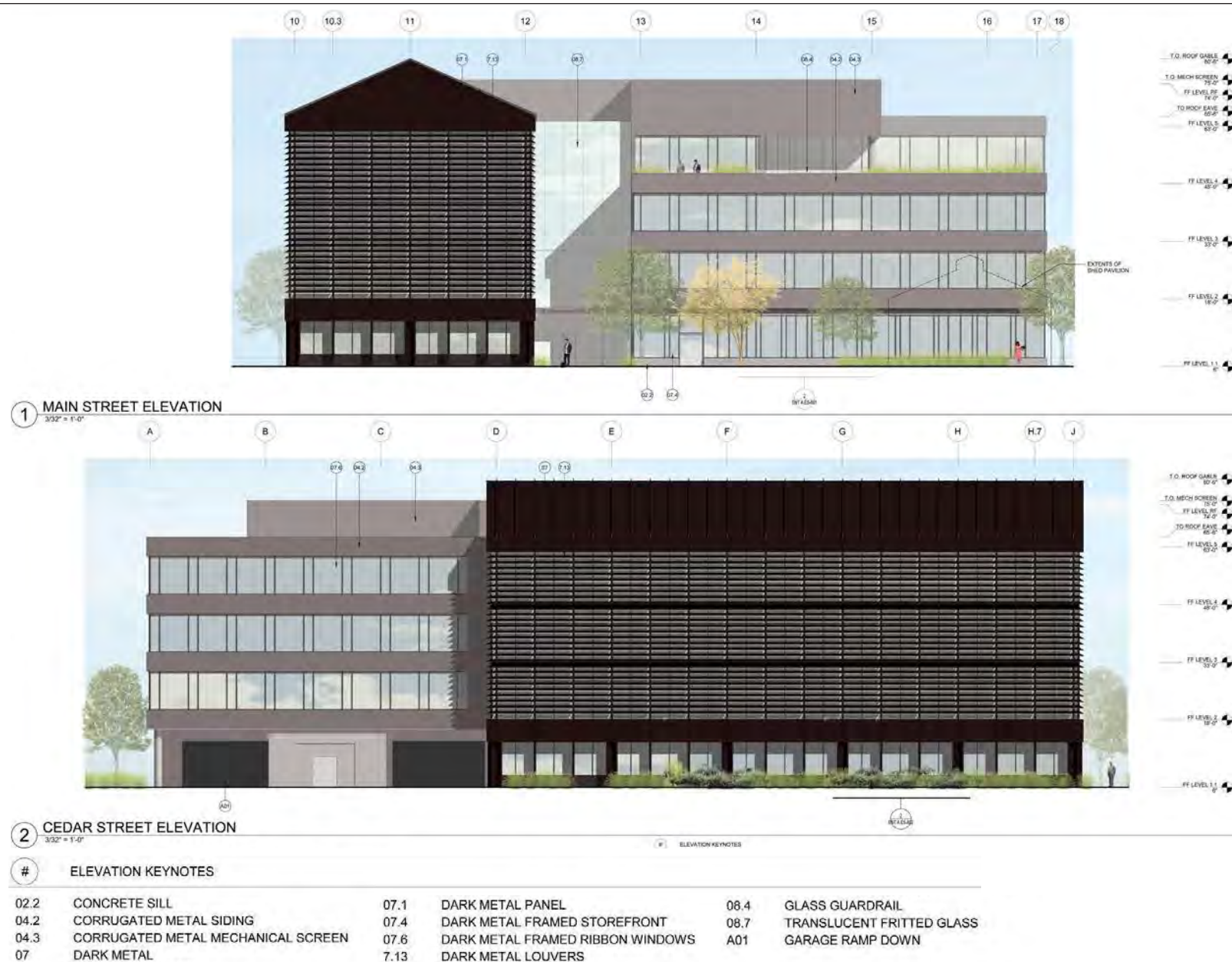


Source: WRNS STUDIO, 2019.

CONCEPTUAL RENDERINGS PARCEL E ELEVATIONS

South Main Mixed-Use Development Project
City of Redwood City, California

FIGURE 2.16-B



Source: WRNS STUDIO, 2019.

CONCEPTUAL RENDERINGS PARCEL E ELEVATIONS

South Main Mixed-Use Development Project
City of Redwood City, California

FIGURE 2.16-C



Source: WRNS STUDIO, 2019.

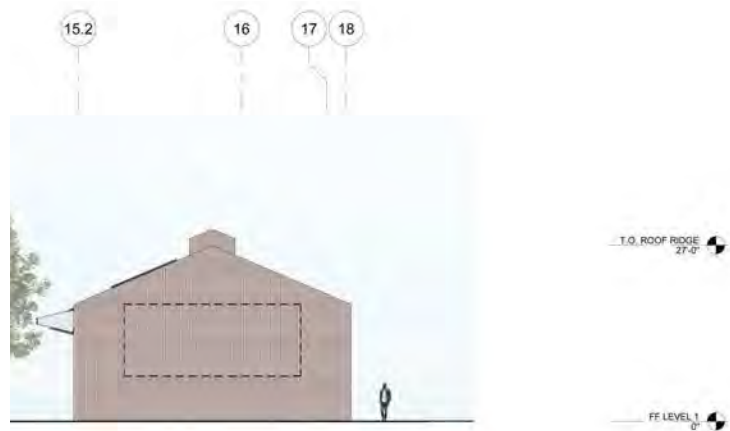
CONCEPTUAL RENDERINGS PARCEL E ELEVATIONS

South Main Mixed-Use Development Project
City of Redwood City, California

FIGURE 2.16-D



3 NORTH ELEVATION
3/32" = 1'-0"



4 MAIN STREET ELEVATION
3/32" = 1'-0"



1 CHESTNUT STREET ELEVATION
3/32" = 1'-0"



2 PLAZA ELEVATION
3/32" = 1'-0"

Source: WRNS STUDIO, 2019.

CONCEPTUAL RENDERINGS PARCEL E ELEVATIONS

South Main Mixed-Use Development Project
City of Redwood City, California

FIGURE 2.16-E



INTERSECTION OF EL CAMINO REAL & JACKSON AVE.

Source: Lowney Architecture, 2019.

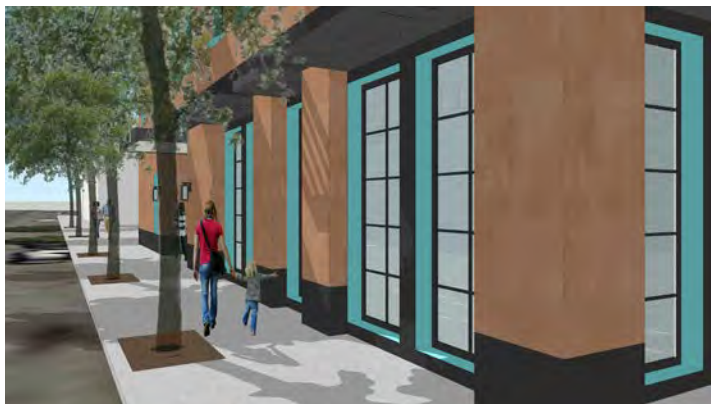
CONCEPTUAL RENDERINGS PARCEL F

South Main Mixed-Use Development Project
City of Redwood City, California

FIGURE 2.17-A



VIEW FROM EL CAMINO REAL



STOREFRONT VIEW ALONG EL CAMINO REAL



AERIAL VIEW FROM SOUTH

Source: Lowney Architecture, 2019.

CONCEPTUAL RENDERINGS PARCEL F

South Main Mixed-Use Development Project
City of Redwood City, California

FIGURE 2.17-B

2-40

2.6 Construction Activities and Schedule

2.6.1 General Construction Activities

Typical construction equipment such as graders, backhoes, excavators, cranes, concrete pumps, dozers, drill rigs, and generators would be used for site preparation and construction. A complete list of the anticipated construction equipment to be employed on site is provided in Appendix AQTR. No pile-driving or blasting are anticipated. Equipment and materials would be staged for construction in established work areas on the proposed project site. The proposed project would include site grading to prepare the site for the proposed development. Approximately 731,000 cubic yards of material are anticipated to be exported from the site during site preparation and project construction on Parcels A through E. An additional 1,200 cubic yards would be excavated and exported at Parcel F.

Heavy vehicles (i.e., haul [tractor-trailer] trucks, machinery) would access the project site primarily via a construction entrance off El Camino Real, unless construction activities preclude such use. Other site access would be available from Main Street. In addition to off-haul trips, vehicular trips would be generated by an estimated maximum of 350 workers per day at Parcels A through F. Parking for construction workers would be on the project site, or off-street at a designated off-site location. There would be no multi-day staging of vehicles or equipment on or along roadways external to the project site.

Proposed improvements to site circulation and access are depicted on Figure 2.18. The following streets would be closed to pedestrian, bicycle, and vehicular traffic for the duration of proposed project construction, as shown on Figure 2.19 – Street Closures during Project Construction:

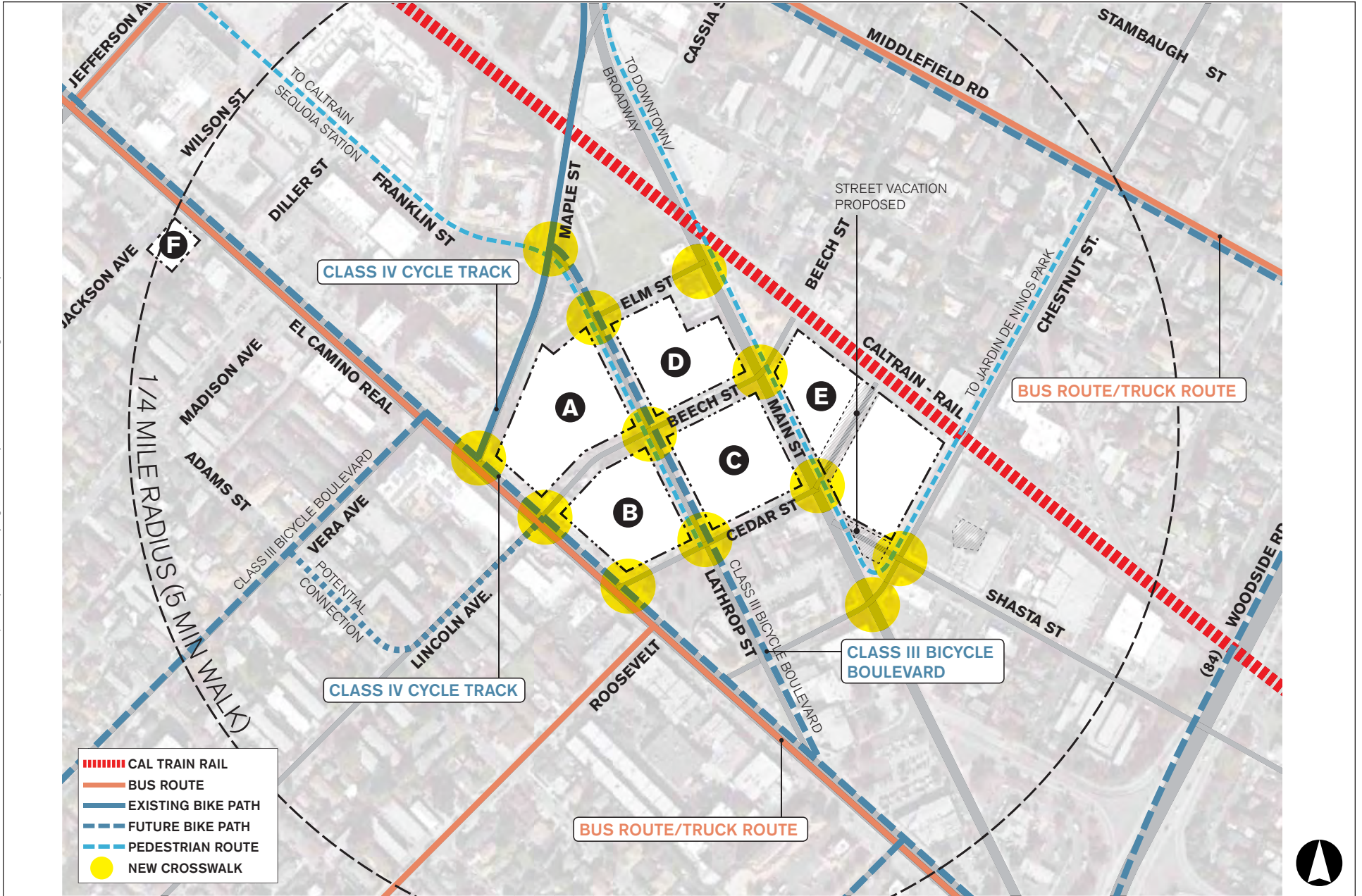
- Beech Street from El Camino Real to Main Street.
- Lathrop Street from Elm Street to Cedar Street.
- Shasta Street from Main Street to Chestnut Street.

The following streets would remain open to pedestrian, bicycle, and vehicular traffic:

- Main Street and El Camino Real.
- Maple Street/Elm Street, Cedar Street, and Chestnut Street.

No residential, commercial, or other entrances or parking entrances would be impacted, and all neighboring building and parking access would be maintained.

Parcel E would be constructed independently, but concurrent with Parcels A through D, and fenced off accordingly. Although construction traffic may need to traverse Main Street, no long-term closure of Main Street is anticipated. Short-term lane closures of Main Street for activities such as utility installation and sidewalk improvements may be requested. Parcel F is self-contained, and separated from Parcels A through E by about 1,000 feet. Construction on this parcel may require temporary lane closures on Jackson Street or El Camino Real. Lane closure procedures would be outlined in the proposed project's construction traffic management plan developed in accordance with the City's standard conditions of approval, as further described in Section 3.5, Transportation. Any temporary lane closures affecting El Camino Real will be subject to issuance of an encroachment permit from the California Department of Transportation (Caltrans) and associated conditions of approval.



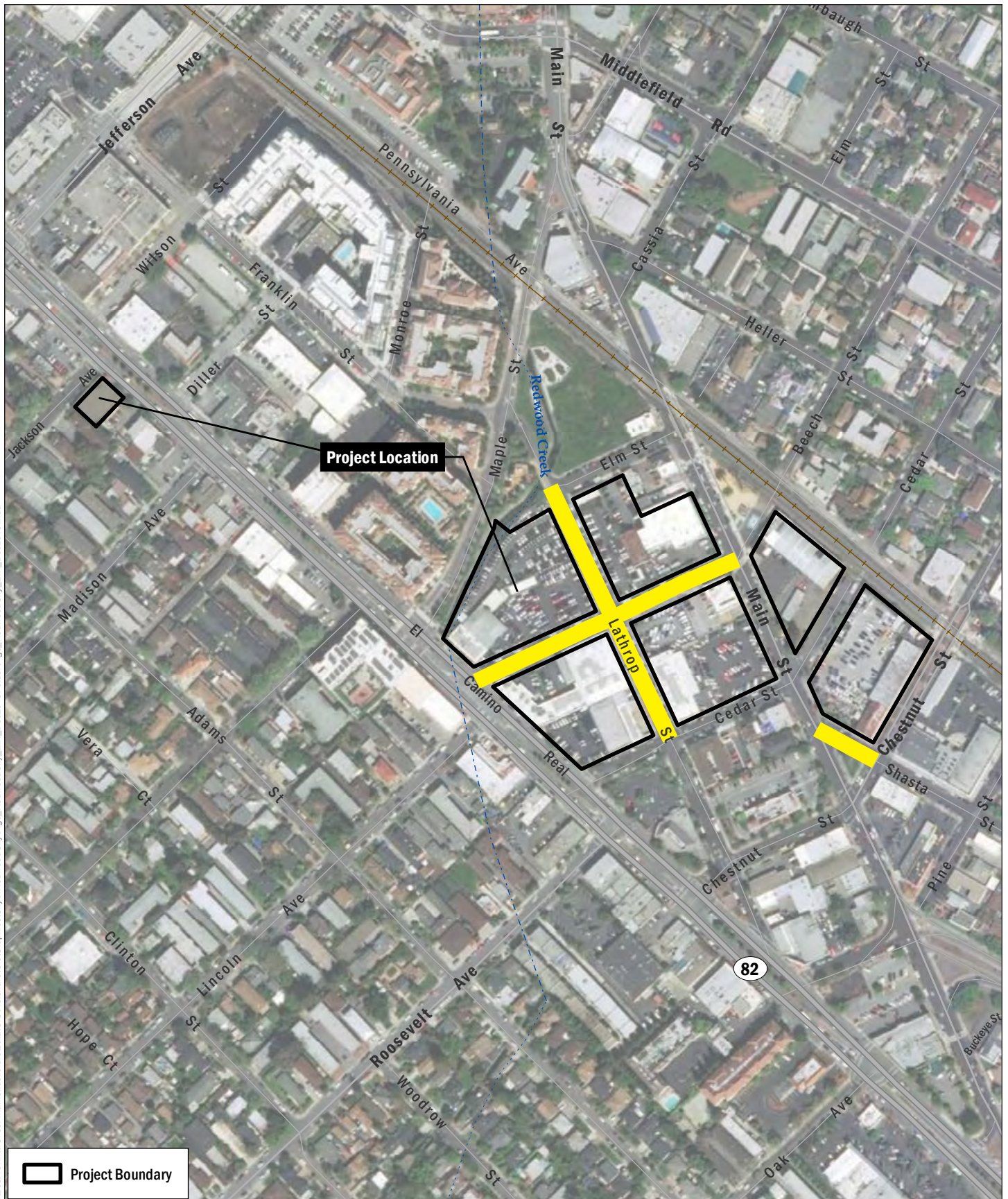
Source: WRNS STUDIO, 2019.

SITE CIRCULATION PLAN

South Main Mixed-Use Development Project
City of Redwood City, California

FIGURE 2.18

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Data Source: ESRI, 2019.

Closed for the duration of construction

Note: All internal streets would be closed to pedestrian, bicycle and vehicular traffic.

STREET CLOSURES DURING PROJECT CONSTRUCTION

South Main Mixed-Use Development Project
City of Redwood City, California

FIGURE 2.19
2-43

2.6.2 Construction Schedule and Phasing

Construction activities would occur during the work week, Monday through Friday, between 7:00 a.m. and 8:00 p.m., consistent with the City's Municipal Code applicable to construction activities. Some activities, like large concrete pours that require extended periods of continuous activity or complex utility relocation efforts, could require continuous work, beyond the permitted hours. Any work outside of the City's construction hours would require special permits. The proposed project construction would commence with site work, including tree removal, demolition, excavation, grading, and utility infrastructure, which would occur over approximately 6 months. Project construction would take place simultaneously on Parcels A through E. Therefore, multiple crews would be constructing parcels at the same time, and construction activities on each parcel would overlap. The residential construction would follow the initial site preparation and overlap with some of the site work. Project construction is expected to last 25 to 27 months, and is anticipated to commence in 2020, with completion in 2022. This project schedule is dependent on market conditions, regulatory approvals, and other factors, and therefore is subject to change.

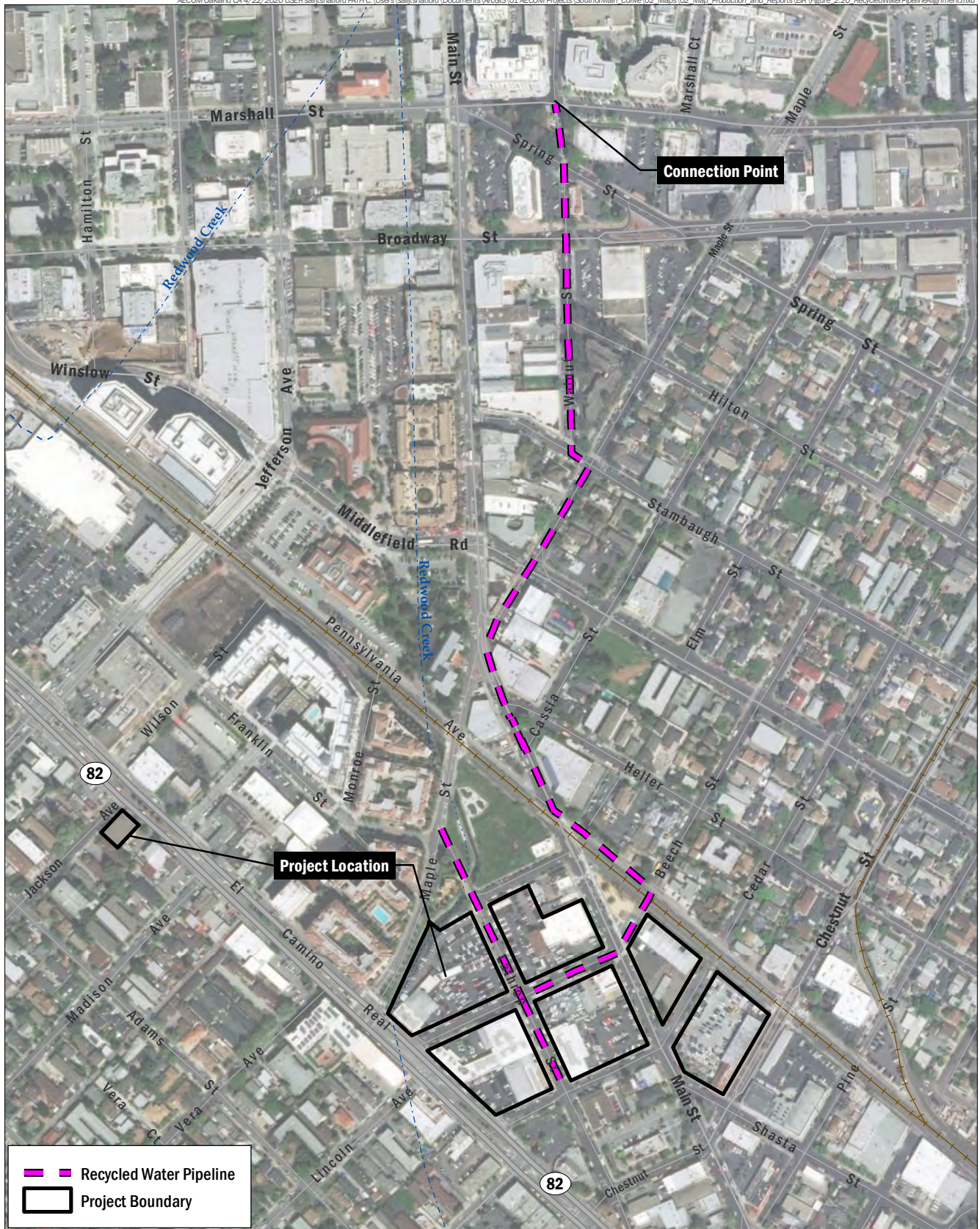
Project construction for Parcel F would take place over 14 months, and would have some overlap with construction on Parcels A through E. Construction on Parcel F would commence in fall 2020 and conclude in winter of 2021.

There would likely be multiple destinations for off-haul materials. Construction workers would also be arriving from different directions. Travel routes for workers, soils export, and material import would be determined in consultation with the City's Engineering and Transportation Division, and included in the construction traffic management plan to be developed in accordance with the City's standard conditions of approval.

2.7 Utilities and Service Connections

Utilities for the proposed project would be provided by the City, including storm, sanitary sewer, water, and recycled water services. Energy and telecommunications would be provided by Pacific Gas and Electric Company (PG&E [gas and electric]), AT&T, and Comcast and Wave (telecommunications). All services except recycled water are available at the project site, and would be upsized during construction as necessary to provide system capacity in accordance with applicable standards, in accordance with the recommendations provided in the Utilities Engineering Report (see Appendix UTIL).

A new recycled water main to serve the site would be installed by the project, from the nearest point of the existing recycled water main connection to the limits of the project area. As provided in the Utilities Engineering Report in Appendix UTIL, the anticipated alignment of the new recycled water pipeline segment is shown on Figure 2.20. The 24-inch-diameter (interior diameter) pipeline would extend from an existing connection point at the corner of Marshall Street and Walnut Street for about 0.60 mile to the project site, following an alignment south on Walnut to Stambaugh Street, east on Stambaugh to Maple Street, southwest on Maple to Main Street, southeast on Main to Pennsylvania Avenue, southeast on Pennsylvania to Beech Street, and southwest on Beech to Lathrop Street. The 24-inch-diameter (interior diameter) pipeline would then extend northwest on Lathrop to the intersection of Lathrop Street and Main Street, approximately 0.10 mile. In addition to serving some of the recycled water demands of the site, this pipeline design would facilitate a future extension across Main Street to provide recycled water to additional land uses to the west and northwest of the project site. An additional 14-inch-interior-diameter pipeline extending southeast on Lathrop Street from Beech Street to Cedar Street would be installed to serve the remaining recycled water demands of the project, and facilitate the future expansion of the recycled water system to the south of the project site.



Data Source: ESRI, 2019.



RECYCLED WATER PIPELINE ALIGNMENT

South Main Mixed-Use Development Project
City of Redwood City, California

FIGURE 2.20

Water system improvements would be installed by the project in accordance with the recommendations provided in the Utilities Engineering Report. Improvements include an 8-inch-diameter water main in Cedar between El Camino Real and Main Street, with the new main connecting to the existing mains on each end. Additionally, 10-inch-diameter water mains would be installed in Lathrop Street between Elm and Cedar, in El Camino Real between Maple and Cedar, and in Beech between El Camino Real and Lathrop. An upgrade of the existing 4-inch-diameter water main in Elm Street between Lathrop and Main would also be installed by the project, unless another development adjacent to this street has already performed this upgrade. Water system upgrades are shown on Figure 2.21.

As provided in the Utilities Engineering Report in Appendix UTIL, upgrades to the City's sanitary sewer system are required to provide capacity for the anticipated sewer discharge from the project.

The most deficient area of the downstream sewer system is located in Bradford Street between Main Street and Walnut Street and in Walnut Street from Bradford Street to approximately 100 feet north of Veterans Boulevard. As part of the project, the applicant would upsize the existing sewer mains in this location, with a 36-inch-diameter pipeline extending approximately 1,030 feet. This alignment is shown on Figure 2.22.

2.8 Standard Development Requirements

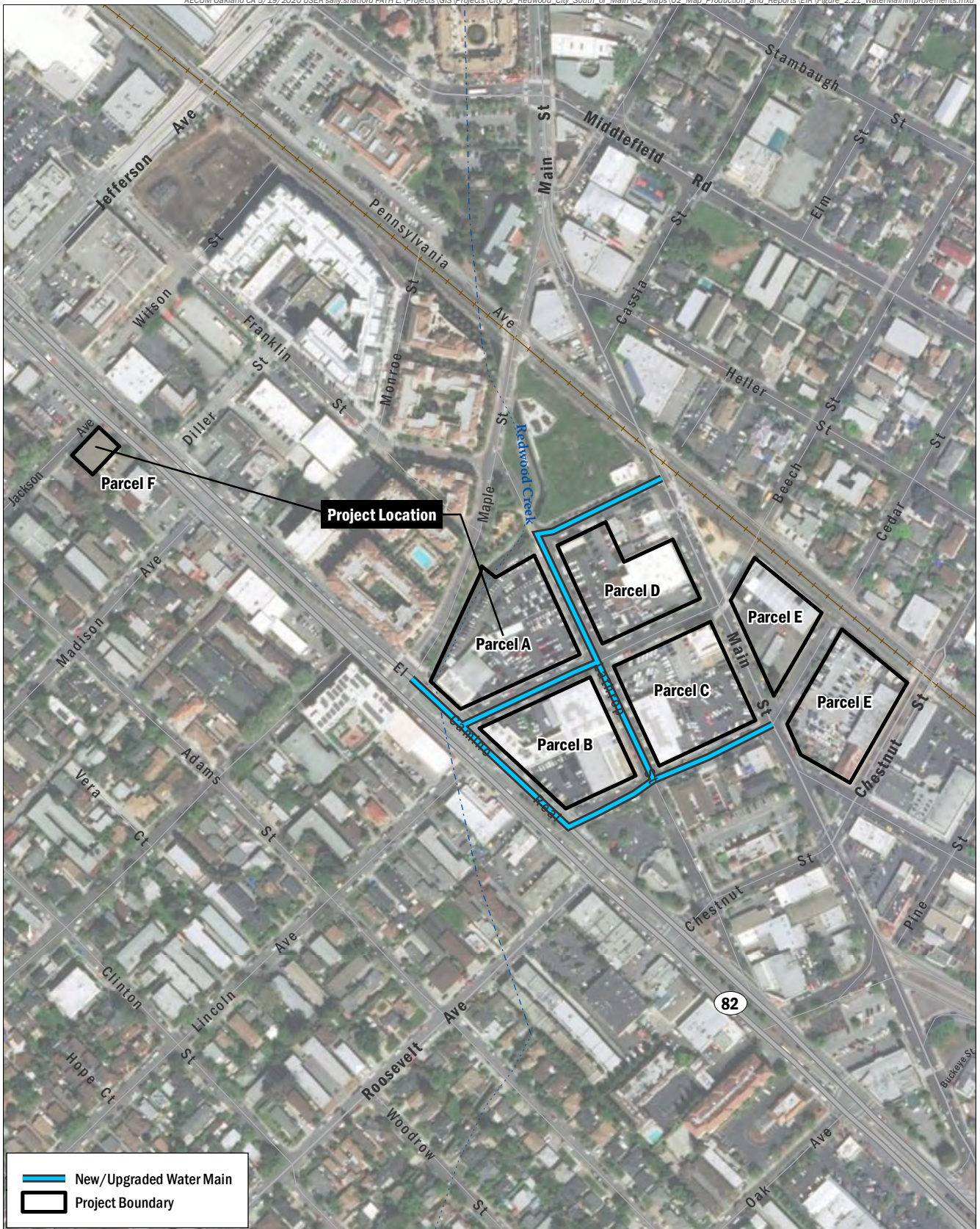
The City has established conditions of approval and standard development requirements to address resource protection. The conditions of approval are specific conditions applicable to the proposed project. The standard development requirements are items which are codified or adopted by resolution and have been included for ease of reference; they may not be appealed or changed. The proposed project would comply with these conditions and standard development requirements, which are described in greater detail where applicable in the relevant topical area of this draft environmental impact report (DEIR), and as attached in Appendix COA.

2.9 Project Approvals

The proposed project is a private development proposal that involves private funds (no city, state, or federal funds). Redwood City is the Lead Agency for the preparation and certification of the environmental impact report (EIR). Where appropriate, responsible, trustee, and other agencies will be consulted during the EIR process. Subsequent development entitlements for the proposed project may require approval of state, federal, and regional responsible and trustee agencies that may rely on this EIR for decisions in their respective jurisdictions. The proposed project would be reviewed and discussed at public hearings before the Historic Resources Advisory Committee, Transportation Advisory Committee, Architectural Advisory Committee, Planning Commission, and City Council. Table 2.7 lists the anticipated discretionary approvals and permits for the proposed project.

2.9.1 State Density Bonus

The proposed project would provide affordable housing on Parcels A, D and F, thereby qualifying the project for certain requests pursuant to the State Density Bonus Law (SDBL) (Government Code Sections 65915 et. seq.). The SDBL was adopted in 1976 to address California's affordable housing needs. As originally enacted, the SDBL sought to increase the production of affordable housing by requiring local agencies to grant an increase to the maximum allowable residential density for eligible projects, and to support the development of eligible projects at greater residential densities by granting incentives, concessions, waivers, and/or reductions to applicable development regulations. An example of a concession or incentive is a reduction in the number of parking spaces that may be required for a project, or an increase in the allowable building height that applies to the project. The SDBL applies to projects providing five or more residential units with a certain percentage of affordability levels, including mixed-use developments. Density bonuses and associated incentives, concessions, waivers, or reductions are intended to offset the financial burden of constructing affordable or specialized units.



MAIN WATER IMPROVEMENTS

South Main Mixed-Use Development Project
City of Redwood City, California

FIGURE 2.21

Table 2-7 Project Approvals

Jurisdiction	Permits/Approvals
City of Redwood City	<ul style="list-style-type: none"> • Use Permits • Downtown Planned Community Permit • Vesting Tentative Tract Map • Abandonment of a segment of a public street (Shasta) • Abandonment of a segment of a public street and conversion to a private street (Cedar) • Acquisition of a City-owned parcel (1306 Main Street) • Architectural Permit • Tree Removal Permit • Grading Permit • State Density Bonus concessions and waivers • Planned Development Permit • Affordable Housing Plan
Regional Water Quality Control Board	<ul style="list-style-type: none"> • Stormwater Pollution Prevention Plan/Construction General Permit • Clean Water Act Section 401 Water Quality Certification
U.S. Army Corps of Engineers	<ul style="list-style-type: none"> • Section 404 and/or Nationwide Permit
California Fish and Wildlife	<ul style="list-style-type: none"> • Notification of Lake or Streambed Alteration
Caltrans	<ul style="list-style-type: none"> • Encroachment Permit for work in El Camino Real right-of-way
Caltrain	<ul style="list-style-type: none"> • Encroachment Permit

The following outlines the general parameters of the SDBL and how it could be applied to the proposed project. To ensure that the potential impacts of the proposed project are sufficiently described and analyzed in this DEIR, the project description provided herein is based on the maximum development scenario that could be permitted consistent with Redwood City zoning requirements and SDBL.

2.9.1.1 Residential Development

The applicant proposes to make 20% of the base allowable residential units on Parcel A and 10% of the base available units on Parcel D available to low-income households, in addition to the affordable units and replacement of existing affordable housing units at Parcel F. Separate from requests for concessions/incentives, SDBL allows a qualifying applicant to request a waiver or reduction of development standards (Government Code §65915(e)), as summarized below.

- Density Bonus – The provision of low-income residential units on Parcels A and D as outlined above entitles the project to a 35% density bonus on Parcel A and a 20% density bonus on Parcel D. The provision of 100% low-income on Parcel F entitles the project to a minimum 35% density bonus on Parcel F (Government Code, Section (§) 65915(f)).
- Concessions/Incentives – Density bonus law grants concessions/incentives for the provision of low-income units (Government Code § 65915(d)(2)(A)(B)).
- Reduced Parking – The SDBL states that upon the request of the developer, no city shall require a vehicular parking ratio that exceeds the parking ratios set forth in Government Code Section 2.65915(p)(2) of 0.5 space per bedroom (inclusive of guest parking and handicapped parking).

2.9.1.2 Commercial Development

No commercial concessions under SDBL are requested. Proposed modifications for reduced parking are being requested under a Planned Development Permit from the City.

Chapter 3. Environmental Evaluation

3.0 Introduction

Chapter 3 presents the environmental impact evaluation in each environmental resource category in which the proposed project may have a potentially significant impact, as determined in the Initial Study (Appendix IS). In accordance with California Environmental Quality Act (CEQA) Guidelines, the following environmental topics are analyzed in this draft environmental impact report (DEIR) for potentially significant impacts:

- Aesthetics
- Air Quality
- Cultural Resources
- Greenhouse Gas Emissions
- Transportation

Pursuant to Section 15143 of the State CEQA Guidelines, a lead agency may limit an environmental impact report's (EIR's) discussion of environmental impacts to specific issue areas where significant impacts on the environment may occur. A copy of the Initial Study may be attached to the EIR to provide the basis for limiting the impacts discussed. The Initial Study for this project, which is included in Appendix IS of this EIR, analyzed the proposed development on Parcels A through E. The Initial Study was originally released with the NOP on July 9, 2019. Subsequently, the project applicant submitted an application that revised the project to include 249 additional residential units and an incremental reduction in office space. Therefore, Chapter 6, Effects Not Found to be Significant, presents each topic previously analyzed in the Initial Study, and reevaluates those topics as they relate to the revised project that is evaluated in this EIR.

The information and analysis presented in the Initial Study and updated in Chapter 6 provide substantial evidence that the proposed project, as revised and subject to the mitigation measures described in the Initial Study, will not have any potentially significant impacts on the environmental resources listed below. As a result, and to avoid unnecessary duplication, the analyses of the project's potential impacts on these resources are not repeated in Chapter 3 of this EIR. Table ES-1 in the Executive Summary of this EIR summarizes the potential impacts identified for the Initial Study topics noted below, including the full text of any applicable mitigation measures.

- Agricultural and Forestry Resources (Less than Significant)
- Biological Resources (Less than Significant with Mitigation)
- Energy (Less than Significant)
- Geology and Soils (Less than Significant with Mitigation)

- Hazards and Hazardous Materials (Less than Significant with Mitigation)
- Hydrology and Water Quality (Less than Significant with Mitigation)
- Land Use and Planning (Less than Significant)
- Mineral Resources (Less than Significant)
- Noise (Less than Significant with Mitigation)
- Population and Housing (Less than Significant)
- Public Services (Less than Significant)
- Recreation (Less than Significant)
- Tribal Cultural Resources (Less than Significant with Mitigation)
- Utilities and Services Systems (Less than Significant with Mitigation)
- Wildfire (Less than Significant)

As further discussed below under Environmental Analysis, Parcel F is within the approved Downtown Precise Plan (DTPP) area, the development of which was previously analyzed in the 2010 DTPP Program EIR. The Parcel F Consistency Analysis provided in Appendix CNA reveals that no new or more severe significant impacts would result from the currently-proposed development of Parcel F beyond those identified and addressed in the 2010 DTPP Program EIR. Therefore, no further analysis of Parcel F is warranted in this DEIR. However, where applicable, any contributions from Parcel F development to potential cumulative impacts are considered in this DEIR (e.g., construction health risks in Section 3.2, Air Quality).

The Consistency Analysis identifies various mitigation measures from the DTPP Program EIR that are applicable to the Parcel F development proposal. Table ES-1 in the Executive Summary of this EIR includes a summary of those Parcel F impacts triggering mitigation, along with the full text of the applicable Program EIR mitigation measures. Mitigation measures that have been recommended in the Initial Study or Parcel F Consistency Analysis to reduce the environmental impacts of the proposed project would be included in the Mitigation Monitoring and Reporting Program that the City would prepare (pursuant to the CEQA Guidelines Section 15097) if the City determines that the proposed project should be approved.

3.0.1 Environmental Analysis

The environmental analysis presented in this DEIR analyzes the potential environmental impacts from proposed project implementation on Parcels A through E. The proposed project also includes Parcel F, which would be developed with affordable housing uses. As described above, Parcel F is in the City's DTPP area, which is analyzed in the City's DTPP Program EIR certified in 2010. The impacts associated with the types of development proposed in the DTPP Implementation Area, proposed zoning and land use designations, development density, and the locations where DTPP development would occur were analyzed in the 2010 DTPP Program EIR.

Section 21083.3 of the Public Resources Code and Section 15183 of the CEQA Guidelines allow streamlined environmental review for projects that are "consistent with the development density established by existing zoning, community plan or general plan policies for which an EIR was certified, except as might be necessary to examine whether there are project specific significant effects which are peculiar to the project or its site." Section 15183(c) specifies that "if an impact is not peculiar to the parcel or to the proposed project, has been addressed as a significant effect in the prior EIR, or can be substantially mitigated by the imposition of uniformly applied development policies or standards..., then an EIR need not be prepared for the project solely on the basis of that impact." Therefore, pursuant to CEQA and the CEQA Guidelines, the City as the lead agency intends to use the 2010 DTPP Program EIR as the primary CEQA document for disclosure of the environmental impacts associated with development of Parcel F, as supported by the DTPP Program EIR Consistency Analysis included in Appendix CNA of this EIR

The Consistency Analysis in Appendix CNA evaluated the potential environmental effects of the proposed project specific to Parcel F to determine whether such impacts were adequately covered under the DTPP Program EIR. The analysis included in Appendix CNA incorporates information from the DTPP Program EIR, and includes an Environmental Checklist and supporting documentation to provide comprehensive review and public information for the basis of determining whether the Program EIR adequately addresses the potential effects of the proposed project.

The Parcel F Consistency Analysis shows that the currently-proposed development of Parcel F will not result in any new or more severe significant impacts beyond those identified in the 2010 DTPP Program EIR. Therefore, based on this environmental evaluation, the proposed development of Parcel F qualifies for several environmental streamlining techniques and is eligible for certain exemptions from CEQA's environmental review requirements, each of which separately and independently provides a basis for CEQA compliance. These streamlining techniques and exemptions are further detailed in Appendix CNA.

3.0.2 Chapter Organization

- **Summary** summarizes the impact findings for the section, and provides a glossary of terms and acronyms used in the section.
- **Environmental Setting** includes a description of the existing environmental conditions by providing a baseline against which the impacts of the proposed project can be compared; and an overview of relevant federal, state, regional, and local laws, regulations, and plans.
- **Thresholds of Significance** lists the criteria for determining the significance of project impacts.
- **Impact Discussion** identifies the project impacts and the potential changes to the existing physical environment that could occur if the proposed project were to be implemented. The exact magnitude, duration, extent, frequency, range, or other parameters of a potential impact are ascertained, to the extent possible, to determine whether impacts could be significant. If the analysis concludes that an impact may be significant, project-specific mitigation measures are identified to reduce those impacts, and an explanation is provided on whether the potential impacts are expected to be significant or less than significant after implementation of the recommended measures.
- **Cumulative Impacts** describes potential environmental changes to the existing physical conditions that may result from implementation of the proposed project, and other reasonably foreseeable, planned, and approved future projects.

3.0.3 Cumulative Impact Analysis

Cumulative impacts do not refer to the direct impacts of a project, but to the impacts of a proposed project when considered with the impacts of past, present, and probable future projects producing related impacts, as required by Section 15130 of the CEQA Guidelines. Other past, present, and future projects that would contribute to environmental impacts of the proposed project are referred to as "related projects."

As stated in CEQA Section 21083(b)(2), a project may have a significant effect on the environment if "its effects are individually limited but cumulatively considerable." According to CEQA Guidelines Section 15355:

"Cumulative impacts" refer to two or more individual effects which, when considered together, are considerable or which 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, which 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.

In addition, as per the CEQA Guidelines: “The mere existence of significant cumulative impacts caused by other projects alone shall not constitute substantial evidence that the proposed project’s incremental effects are cumulatively considerable.” The analysis in this section includes:

- A determination of whether the long-term impacts of all related past, present, and future plans and projects would cause a cumulatively significant impact; and
- A determination as to whether implementation of the proposed project would have a “cumulatively considerable” contribution to any significant cumulative impact. (See CEQA Guidelines Sections 15130[a]-[b], Section 15355[b], Section 15064[h], and Section 15065[c]).

The discussion of cumulative impacts must reflect the severity of the impacts, as well as the likelihood of their occurrence; however, the discussion need not be as detailed as the discussion of environmental impacts attributable to the project alone. The analysis should be guided by the standards of practicality and reasonableness, and it should focus on the cumulative impacts to which the other identified projects contribute to the cumulative impact.

CEQA Guidelines Section 15130(b)(1) identifies two approaches to analyzing cumulative impacts. The first is the “list approach,” which requires a listing of past, present, and reasonably anticipated future projects producing related or cumulative impacts. The second is the projections-based approach, wherein the relevant growth projections contained in an adopted general plan or related planning document designed to evaluate regional or area-wide conditions are summarized.

As explained above, although no additional discussion of the direct impacts from Parcel F is warranted in this EIR, the contribution of Parcel F to potentially significant cumulative impacts is considered where applicable (e.g., health risk impacts in Section 3.5, Air Quality). The projects listed in Table 3-1 (on the following page) are in the vicinity of the proposed project site and were under construction, approved, or pending approval at the time that the January 2020 revised Notice of Preparation was issued for this EIR, and so are considered in the analysis of cumulative impacts:

The following provides a summary of the cumulative impact scope for each impact area:

- **Aesthetics:** The cumulative setting for visual impacts includes the effects of the proposed project, together with other cumulative development projects in the immediate vicinity of the project site.
- **Air Quality:** Cumulative air quality impacts could occur from a combination of the proposed project combined with regional growth in the San Francisco Bay Area Air Basin.
- **Cultural Resources:** The geographic scope for cultural resource impacts includes other projects in Redwood City that may impact historic resources.
- **Greenhouse Gas Emissions:** The geographic scope for greenhouse gas emissions is related to regional growth in the San Francisco Bay Area Air Basin.
- **Transportation:** The geographic scope for transportation impacts includes the transportation facilities (roads, transit, bikeways, pedestrian) affected by project operations.

Table 3-1 Cumulative Projects

Project	Description	Status
929 Main Street	8,002 square feet retail	under construction
601 El Camino Real	33 residential units	under construction
851 Main Street	80,000 square feet office; 6,910 square feet retail	under construction
353 Main	125 residential units	under construction
103 Wilson Street	175 multi-family residential units; 202 parking spaces	built
1409 El Camino Real	350 for-rent residential units	under construction
707 Bradford	117 residential units; 8,000 square feet childcare	under construction
610 Walnut	63,835 square feet, 6-story office building	under construction
1401 Broadway plus Bay Road site	520 residential units; 420,000 square feet office; 18,800 square feet retail; 6,860 square feet commercial/flex	under construction
Stanford in Redwood City	570,000 square feet office; 31,159 square feet recreation; 14,000 square feet childcare; 5,053 square feet storage	under construction
1175 Marshall Street	Kaiser Hospital Phase II: 196,100 square feet medical, 441 parking spaces	under construction
910 Woodside Road	10 condo units	approved
1690 Broadway	112-room Holiday Inn Express hotel	approved
433 Harrison	17 Townhomes	approved
120 El Camino Real	12 residential units	approved
2075 Broadway	80,000 square feet office; 13,515 square feet retail	built
612 Jefferson	20 residential units	under construction
1548 Maple Street	131 residential units	under construction
211/217 Vera Court	10 residential units	under construction
31 Center	7 residential units	approved
150 Charter Street	72 residential units	proposed
690 Veterans	92-unit hotel	proposed
1180 Main	109,375-square-foot office	under construction
320-350 Blomquist	765,150-square-foot high-tech office campus	proposed
1125 Arguello	68 condo townhome units	proposed
YMCA/Veterans Senior Center – Red Morton Park	80,000 recreation	approved
557 East Bayshore Road	480 residential units, 100,000-square-foot sports club	proposed
525 East Bayshore	201,000-square-foot automobile dealership	proposed
455 County Center	200,000-square-foot office	under construction

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3.1 Aesthetics

Public Resources Code Section 21099(d), effective January 1, 2014, provides that “aesthetics (...) impacts of a residential, mixed-use residential, or employment center project on an infill site located within a transit priority area shall not be considered significant impacts on the environment.” Accordingly, aesthetic resources are no longer to be considered in determining if a project has the potential to result in significant environmental effects for projects that meet all of the following three criteria:

1. The project is in a transit priority area.
2. The project is on an infill site.
3. The project is residential, mixed-use residential, or an employment center.

The proposed project meets each of the above three criteria because it (1) is near major transit routes; (2) is on an infill site that is developed with commercial uses, and is surrounded by areas of either recently completed or planned urban development; and (3) would be a mixed-use project with residential, office, retail, and community uses. Therefore, this draft environmental impact report (DEIR) does not consider aesthetic impacts in determining the significance of project impacts under the California Environmental Quality Act (CEQA).

However, the City of Redwood City (City) recognizes that the public and decision-makers may be interested in information pertaining to the aesthetic effects of a proposed project, and may desire that such information be provided as part of the environmental review process. In addition, CEQA Section 21099(d)(2) states that a lead agency maintains the authority to consider aesthetic impacts pursuant to local design review ordinances or other discretionary powers, and that aesthetics impacts do not include impacts on historical or cultural resources (e.g., historic architectural resources).

The aesthetics analysis in this section is for informational purposes only, and not for determining whether the proposed project would result in significant impacts to the environment. The analysis in this DEIR is included to discuss the aesthetics impacts that would occur from the proposed project if Public Resources Code Section 21099(d) was not in effect. Because this section of the Public Resources Code is applicable, the aesthetics impact discussion in this DEIR will not trigger the need for any CEQA findings, CEQA analysis, or CEQA mitigation measures.

3.1.1 Summary

Because the Project's aesthetics impacts are not considered significant impacts on the environment pursuant to Public Resources Code Section 21099, the thresholds of significance listed below are included for informational purposes only and are not applicable to the CEQA impact conclusions for the proposed project. Table 3.1-1 provides a summary of the impact discussion in Sections 3.1.5 and 3.1.6.

3.1.2 Glossary

- **AAC:** Architectural Advisory Committee
- **CEQA:** California Environmental Quality Act
- **City:** City of Redwood City
- **DEIR:** draft environmental impact report
- **DTPP:** Downtown Precise Plan
- **EIR:** environmental impact report
- **HRAC:** Historic Resources Advisory Committee
- **LZ:** lighting zone
- **MU-C:** Mixed-Use-Corridor
- **MUC-ECR:** Mixed-Use Corridor – El Camino Real
- **MUT:** Mixed-Use Transitional

Table 3.1-1 Summary of Impact Findings – Aesthetics

Environmental Issues	Significant and Unavoidable	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Except as provided in Public Resources Code Section 21099, would the project:				
AE-1: In non-urbanized area, substantially degrade the existing visual character or quality of public views of the site and its surroundings? (Public views are those that are experienced from publicly accessible vantage point.) If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
AE-2: Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
AE-3: In combination with past, present, and reasonably foreseeable projects, result in significant cumulative impacts with respect to aesthetics.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

The Initial Study analysis of Parcels A through E provided in Appendix IS concluded that the project has no potential to impact a scenic vista or scenic resources because there are no such resources at the project site and vicinity. Specific to Parcel F, as described in the Consistency Analysis provided in Appendix CNA, the Downtown Precise Plan (DTPP) Program Environmental Impact Report (EIR) concluded that no significant aesthetic impacts would result from development on Parcel F. The Consistency Analysis in Appendix CNA further confirmed that the prior analysis and conclusions from the DTPP EIR remain valid for the current development proposal on Parcel F (i.e., no significant aesthetic impacts would result and no mitigation measures are warranted); therefore, no further analysis of Parcel F is provided in this section.

3.1.3 Environmental Setting

3.1.3.1 Regulatory Framework

No federal plans, policies, regulations, or laws related to aesthetics are applicable to the proposed project.

State

Title 24 Outdoor Lighting Zones

The 2016 Building Energy Efficient Standards became effective under Title 24 of the California Code of Regulations on January 1, 2017. These standards apply to outdoor lighting requirements for residential and non-residential development, and are intended to improve the quality of outdoor lighting and reduce the impacts of light pollution, light trespass, and glare.

The standards specifically regulate lighting characteristics, including maximum power and brightness, shielding, and sensors to control turning lighting on and off. The lighting standards classify areas by lighting zone (LZ) based on population figures in the United States Census. These areas are designated as LZ1 (dark), LZ2 (low), LZ3 (medium), or LZ4 (high). Lighting requirements for dark and rural areas are stricter to protect the areas from new sources of light pollution and light trespass. However, consistent

with the City General Plan the project site is in an urban area designated as LZ3, in accordance with the classification standards of the California Energy Commission.

Local

Redwood City General Plan

The Redwood City General Plan includes policies relevant to aesthetics and visual resources. The Redwood City General Plan identifies two land use designations for the project site: Mixed-Use-Corridor (MU-C); and Mixed-Use Transitional (MUT). The MU-C designation allows for the reinvention of key corridors to support major transit and complementary commercial and residential uses, encouraging transit use, bicycle use, and pedestrian activity. The designation allows for both horizontal and vertical mixed use (City, 2010b).

The MUT designation applies to areas transitioning from lower-density land uses to higher-density mixed-use or commercial uses, and is intended to promote a mix of low-to-moderate scaled buildings. Increased height and density are allowed in the MUT for projects that provide specified community benefits such as affordable housing, child care, open space, and community facilities.

The intent of the General Plan with respect to aesthetics and visual resources is summarized in the relevant goals and policies listed in Table 3.1-2 (on the following page).

El Camino Real Corridor Plan

The El Camino Real Corridor Plan is a policy document that provides a comprehensive approach to land use, transportation, and streetscape (City 2017). The plan area includes the length of El Camino Real between the City's northern and southern borders, and encompasses the project site. The Plan includes visions, goals, and strategies for street improvements to make the El Camino Real Corridor safer and more desirable to pedestrians; and policies to support community benefits, small businesses, and a range of housing choices. The four main areas of focus are mobility, economic vitality, housing, and place-making. Plan objectives pertinent to the visual environment include the following:

- Improve the El Camino Real streetscape with a design to promote walking, transit, bicycling, and economic development;
- Improve the Corridor's relationship with and connections to the Transit Center (Caltrain station), downtown core (DTPP area), and surrounding neighborhoods;
- Consider adjusting the zoning regulations to address inconsistencies, create high-quality public spaces, and produce more affordable housing; and
- Incorporate community benefits for new development that positively impacts the Corridor, adjacent neighborhoods, and Redwood City overall.

In contrast to a specific plan that provides a high level of detail and supersedes the zoning code, the Corridor Plan is a guiding document with recommended actions to be further analyzed following Plan adoption. Recently completed implementation actions include zoning code amendments that revise the zoning at project Parcels C through E to MUT, which allow for stand-alone residential uses in this zone and incorporate a community benefits program.

Table 3.1-2 Policies of the General Plan Relevant to Aesthetics

Policy Number	Policy
BE-1.1	Maintain and enhance the beneficial and unique character of the different neighborhoods, corridors, and centers, and open spaces that define Redwood City.
BE-1.4	Require that buildings and properties be designed to ensure compatibility within and provide interfaces between neighborhoods, corridors, and centers.
BE-1.5	Require that new and renovated buildings be designed to avoid styles, colors, and materials that negatively impact the environment or the design character of the neighborhood, corridor, and center in which they are located.
BE-1.6	Require that new large-scale projects are developed with an interconnected pattern of small blocks to induce walking and create walkable neighborhoods, and to maximize connections between neighborhoods. If a new large-scale development project is able to achieve circulation interconnectedness for all modes and maximize walkability, then the small-block pattern may not be required.
BE-1.7	Require that new large-scale projects consist of buildings primarily oriented to public streets, rather than private drives, walkways, and parking lots.
BE-1.9	Carefully consider new shade, shadow, light, and glare effects from proposed development projects and comprehensive plans.
BE-3.2	Encourage new development to create direct and clear visual relationships between residences and public streets, while minimizing driveways, parking areas, and garage doors in front yard spaces.
BE-3.3	Require new development to provide engaging, well-landscaped outdoor spaces that invite and support outdoor activities for residents, especially areas viewed or accessible by the public.
BE-3.4	Encourage building forms that create coherent and consistent street frontages on blocks that emphasize the visibility of entrance doors, porches, stoops, and/or entrance patios.
BE-3.5	Require building and site frontages that define public streets with high-quality architectural and landscape design, including small-scale architectural elements and plane changes.
BE-11.9	Encourage pedestrian activity by requiring all ground-floor businesses to include transparent window fronts; and, to the greatest degree possible, be oriented toward commerce.
BE-12	<p>All new development and redevelopment within Mixed-Use – Corridor and Mixed-Use – Neighborhood land use designations shall complete a shade and shadow study unless and until implementing zoning incorporates mitigation to address impacts as defined below, unless the City's Zoning Administrator determines, based on the scale and scope of the proposed project and the criteria set forth herein, that no shade and shadow study is necessary. Significant impacts shall be mitigated to the extent feasible. The following impacts will normally be considered significant:</p> <ul style="list-style-type: none"> a. Introduction of landscape that would now or in the future cast substantial shadows on existing solar collectors. b. Casting of shadows that substantially impair the beneficial use of shadow-sensitive public open space. c. Casting of shadows that materially impair the historic significance of an historic resource. d. Casting of shadows from parcels within a major transportation corridor onto adjacent Low, Medium, Medium-High, and High-Density residential parcels that substantially impair the beneficial use of the Low Density or Medium Density residential parcels.
BE-18.4	Require residential, office, and governmental agency buildings and sites to be designed to encourage pedestrian activity, through street character, plazas, and other features and amenities that enhance Downtown's viability.
BE-18.9	Create a network of attractive, interesting public places and spaces that encourage walking and lingering through connections to Broadway, adjacent neighborhoods, transit, and El Camino Real.
BE-20.6	Require that commercial centers, when upgraded by property owners, be subject to design review processes that ensure high-quality architectural treatments and sensible site design.
BE-26.15	Improve the pedestrian experience through the use of landscaping, medians, crosswalks, mid-block crossings, pedestrian-scale lighting, pedestrian traffic signals, appropriate street furniture, orienting new development toward the street, and increased education and enforcement.

Redwood City Zoning Code

The Zoning Code identifies development standards in various districts throughout the City, and describes the purpose, intent, and uses allowed in each district. The relevant development standards related to visual resources in Redwood City include building coverage, height, setbacks, and lighting.

Zoning Code Article 45, Architectural Permits, describes the purpose, applicability, and specific development standards for multi-family residential and non-residential uses. Article 45 designates review authority to the Zoning Administrator for the design quality of developments, or the Planning Commission for buildings three stories in height or taller. Decisions regarding an Architectural Permit are based on predetermined findings. The findings are enumerated in the Redwood City Code of Ordinances Section 45.4 as follows:

- A. The existence of sufficient variety in the design of the structure and grounds to avoid monotony in the external appearance.
- B. The size and design of the structure shall be considered for the purpose of determining that the structure is in proportion to its building site and that it has a balance and unity among its external features so as to present a harmonious appearance.
- C. The extent to which the structure conforms to the general character of other structures in the vicinity insofar as the character can be ascertained and is found to be architecturally desirable.
- D. The extent to which excessive ornamentation is to be used and the extent to which temporary and second-hand materials, or materials which are imitative of other materials, are to be used.
- E. The extent to which natural features, including trees, shrubs, creeks, and rocks, and the natural grade of the site are to be retained.
- F. The accessibility of off-street parking areas and the relation of parking areas with respect to traffic on adjacent streets.
- G. The reservation of landscaping areas for the purposes of separating or screening service and storage areas from the street and adjoining building sites, breaking up large expanses of paved areas, separating or screening parking lots from the street and adjoining building sites, and separating building areas from paved areas to provide access from buildings to open space areas.
- H. In the case of any commercial or industrial structure, the review authority shall consider its proximity to any R District and shall consider the effect of the proposed structure upon the character and value of the adjacent R District area.
- I. The provision of permeable areas and drainage design appropriate to capture and treat stormwater runoff prior to its discharge from the site including, but not limited to, the use of vegetated swales, landscape features, permeable pavement materials, infiltration basins or engineered designs.

Zoning Code Article 53, Mixed-Use Corridor Zoning District, describes development standards for uses in the MU-C zoning district, which is composed of five sub-districts. The parcels fronting El Camino Real are in the Mixed Use-Corridor – El Camino Real (MUC-ECR) sub-district.

A number of development standards have been established in the MU-C district specific to lighting, as listed below:

- Zoning Code 53.2.B.3.d: Lighting Standards. Lighting for nonresidential uses shall be appropriately designed, located, and shielded to ensure that they do not negatively impact the residential uses in the development or any adjacent residential uses.
- Zoning Code 53.3.A.3.c: Lighting. Lighting shall be incorporated along sidewalks or other pedestrian walkways to enhance the pedestrian environment and provide for public safety. Lighting shall be low mounted, downward casting so as to reduce light trespass onto adjacent properties.
- Zoning Code 53.4.A.5.a:
 - Pedestrian Environment. Site planning for sites in excess of 1 acre shall integrate the street pedestrian environment through the use of courtyards, plazas, street furniture, and walkways. Public and private walkways, passages, paseos, and related facilities shall be provided.
 - Seating Options. Pedestrian spaces shall provide a variety of seating options, areas of sun and shade for year-round climatic comfort, shelter, and night lighting to encourage public activity and to provide for safety.
- Zoning Code 53.4.A.5.c. Open Space Regulations: Lighting. Lighting shall be incorporated into plazas, paseos, courtyards, and other common open areas to enhance the pedestrian environment and provide for public safety. Lighting shall be low mounted, downward casting so as to reduce light trespass onto adjacent properties.

Zoning Code Article 55, Mixed-Use Transitional, describes development standards for uses in the MUT zoning district.

A number of development standards have been established in the MUT district specific to lighting, as listed below:

- Zoning Code 55.7.C.1: Enhanced Streetscapes. Streetscapes shall be enhanced with enriched streetscape elements, including but not limited to a variety of landscaping and pedestrian amenities, such as benches, pedestrian-scaled lighting, trash enclosures, and bicycle storage.
- Zoning Code 55.7.C.4: Lighting. Lighting shall be incorporated along sidewalks or other pedestrian walkways to enhance the pedestrian environment and provide for public safety. Lighting shall be low mounted, downward casting so as to reduce light trespass onto adjacent properties.

Redwood City Architectural Advisory Committee

The City's Architectural Advisory Committee (AAC), as established by City Resolution No. 15143, is responsible for reviewing and addressing the enhancement of the natural beauty of the environment, and to provide for the orderly and harmonious appearance of structures and grounds. The AAC advises the City Council, Planning Commission, and Zoning Administrator on matters concerning building architecture, landscape architecture, site design, and signs. The AAC is responsible for addressing only the portion of structures facing a public street or place, and the portions of the sides of a structure that are within 50 feet of any portion that faces a public street or place.

Redwood City Historic Resources Advisory Committee

The Historic Resources Advisory Committee (HRAC) was established in March 1980 by City Ordinance No. 1815, and amended by Ordinance No. 1923 in January 1986. The purpose of the HRAC is to

advocate the preservation and appropriate rehabilitation of historically significant properties and structures, including safeguarding the City's heritage by providing for the protection of landmarks; encouraging public knowledge and understanding of the City's role in local and regional history; fostering civic and neighborhood pride and sense of identity; promoting the enjoyment and use of historic and cultural resources; and strengthening the economy of the City by protecting and enhancing historical features.

3.1.3.2 Existing Conditions

This section describes the existing visual character of the project site and in the vicinity of the site, as well as the scenic resources present in the surrounding area. For this analysis of existing conditions, the process of identifying the project area's aesthetic and visual resources and conditions involved three steps:

1. Objective identification of the visual features (visual resources) of the landscape;
2. Assessment of the character and quality of those resources relative to overall regional visual character; and
3. Determination of the importance to people, or sensitivity of views of visual resources in the landscape.

The aesthetic value of an area is a measure of its visual character and quality, combined with the viewer response to the area (FHWA 1988). For purposes of this analysis, scenic quality is defined as the overall impression that an individual viewer retains after driving or walking through an area. Viewer response is a combination of viewer exposure and viewer sensitivity. Viewer exposure is a function of the number of viewers, number of views seen, distance of the viewers, and viewing duration. Viewer sensitivity relates to the extent of the public's concern for a particular viewshed. These terms and criteria are described in detail below.

Visual Quality

Visual quality is evaluated in this section using the well-established approach to visual analysis adopted by the Federal Highway Administration, employing the concepts of vividness, intactness, and unity (FHWA 1988), which are described below.

- **Vividness** is the visual power or memorability of landscape components as they combine in striking and distinctive visual patterns.
- **Intactness** is the visual integrity of the natural and human-built landscape and its freedom from encroaching elements; this factor can be present in well-kept urban and rural landscapes, and in natural settings.
- **Unity** is the visual coherence and compositional harmony of the landscape considered as a whole; it frequently attests to the careful design of individual components in the landscape.

Visual quality is evaluated based on the relative degree of vividness, intactness, and unity, as modified by its visual sensitivity. High-quality views are highly vivid, relatively intact, and exhibit a high degree of visual unity. Low-quality views lack vividness, are not visually intact, and possess a low degree of visual unity (e.g., are not visually cohesive).

Visual Exposure and Sensitivity

The measure of the quality of a view must consider the overall sensitivity of the viewer. Viewer sensitivity or concern is based on the visibility of resources in the landscape; proximity of viewers to the visual resource; elevation of viewers relative to the visual resource; frequency and duration of views; number of viewers; and type and expectations of individuals and viewer groups.

Visual sensitivity is also modified by viewer activity, awareness, and visual expectations in relation to the number of viewers and viewing duration. For example, visual sensitivity is generally higher for views seen by people who are driving for pleasure; people engaging in recreational activities, such as hiking, biking or camping; and homeowners. Sensitivity tends to be lower for views seen by people driving to and from work or as part of their work (USFS 1995; FHWA 1988).

Existing Visual Character

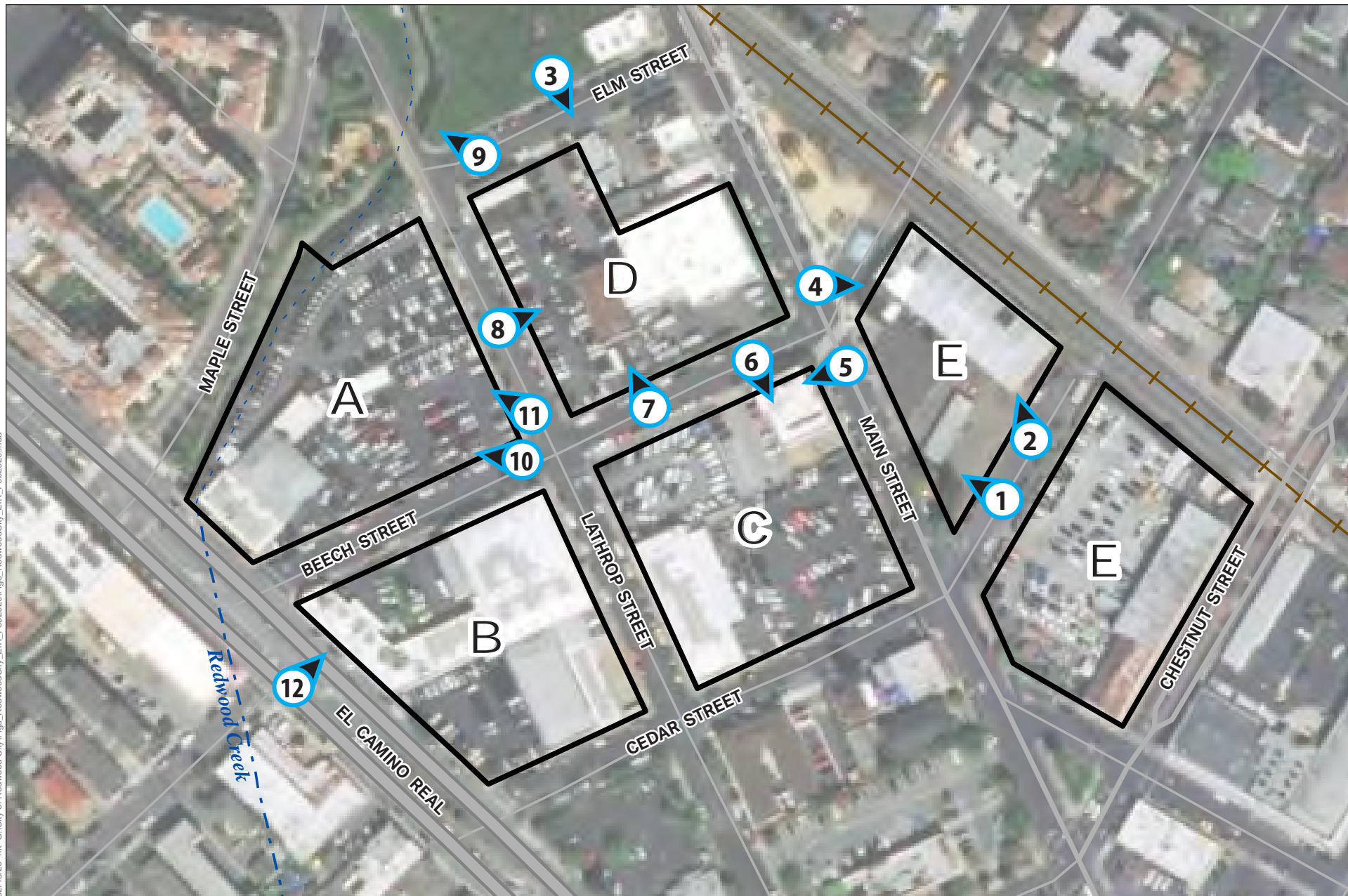
Redwood City is on the western side of the San Francisco Bay, with San Carlos to the north and Atherton to the south. Redwood City is characterized as a diverse urban community with a variety of land uses, including waterfront development, small residential neighborhoods, and mixed-use districts. The project site is just outside of the City's Downtown core, and totals 8.30 acres encompassing five blocks.⁵ The primary project site is bounded by El Camino Real, Maple Street, Elm Street, Main Street, Caltrain right-of-way, Chestnut Street, Shasta Street, and Cedar Street. Lathrop Street, and Main Street run through the project site in a north-south direction.



The project site is developed with existing uses, including auto sales, repair, and warehouse space; one multi-tenant residential building; and a former indoor roller rink. The project area includes the project site and immediately adjacent streets and structures. The 21 existing buildings on Parcels A through E, are predominantly single-story structures, including numerous single-level warehouse structures that are more than 20 feet in height. The tallest existing structure at the project site is the three-story residential structure at 1306 Main Street, which is approximately 30 feet high. The surrounding urbanized area includes low-rise automobile-oriented commercial uses along the El Camino Real corridor, multi-family residential development to the north and south of the project site, and single-family residential development farther to the east across the Caltrain railway. Representative photographs of the project site are provided on Figures 3.1-1A, B, C, and D.

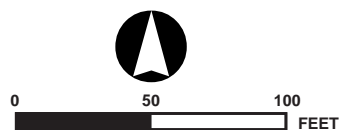
The project site is at the edge of the Redwood City Stambaugh/Heller Redwood Village neighborhood; more specifically, in the Eastern Addition portion of the City. In accordance with the City's General Plan DEIR, the Eastern Addition is the City's second-oldest subdivision. Although a portion of the neighborhood is characterized by historic structures, the project site is in an area generally developed with bulky, rectangular three-story buildings with parking on the ground floor, representative of the 1950s and 1960s apartment building-type architectural style (City 2010b). The General Plan DEIR concludes that "[T]he streetscapes are lined with overhead power lines, broken and narrow sidewalks, and very few street trees or areas of landscaping. The railroad tracks also add a notable manmade visual feature to the neighborhood" (City 2010b). The project site's visual character is that of an urbanized area developed with commercial uses.

⁵ The non-contiguous project Parcel F encompasses approximately 0.15 acre in the DTPP area; visual resources effects at Parcel F are addressed in the Consistency Analysis provided in Appendix CNA of this DEIR.

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-  Project Boundary
-  Photo Number and Direction



REPRESENTATIVE PROJECT SITE PHOTOGRAPHS

South Main Mixed-Use Development Project
City of Redwood City, California

FIGURE 3.1-1a



Photo 1: Parcel E facing northwest from Cedar Street



Photo 2: Parcel E facing northeast from Cedar Street



Photo 3: Parcel D facing south from Elm Street



Photo 4: Parcel E facing east from Main Street/Beech Street intersection

REPRESENTATIVE PROJECT SITE PHOTOGRAPHS

South Main Mixed-Use Development Project
City of Redwood City, California

FIGURE 3.1-1b



Photo 5: Parcel C facing west from Main Street/Beech Street intersection



Photo 6: Parcel C facing south from Beech Street



Photo 7: Parcel D facing north from Beech Street



Photo 8: Parcel D facing east from Lathrop Street

REPRESENTATIVE PROJECT SITE PHOTOGRAPHS

South Main Mixed-Use Development Project
City of Redwood City, California

FIGURE 3.1-1c



Photo 9: 1180 Main Street project facing northwest from Parcel D



Photo 10: Parcel A facing northwest from Lathrop Street/Beech Street intersection



Photo 11: Parcel A facing north from Lathrop Street/Beech Street intersection



Photo 12: Parcel B facing east from El Camino Real/Lincoln Avenue intersection

REPRESENTATIVE PROJECT SITE PHOTOGRAPHS

South Main Mixed-Use Development Project
City of Redwood City, California

FIGURE 3.1-1d

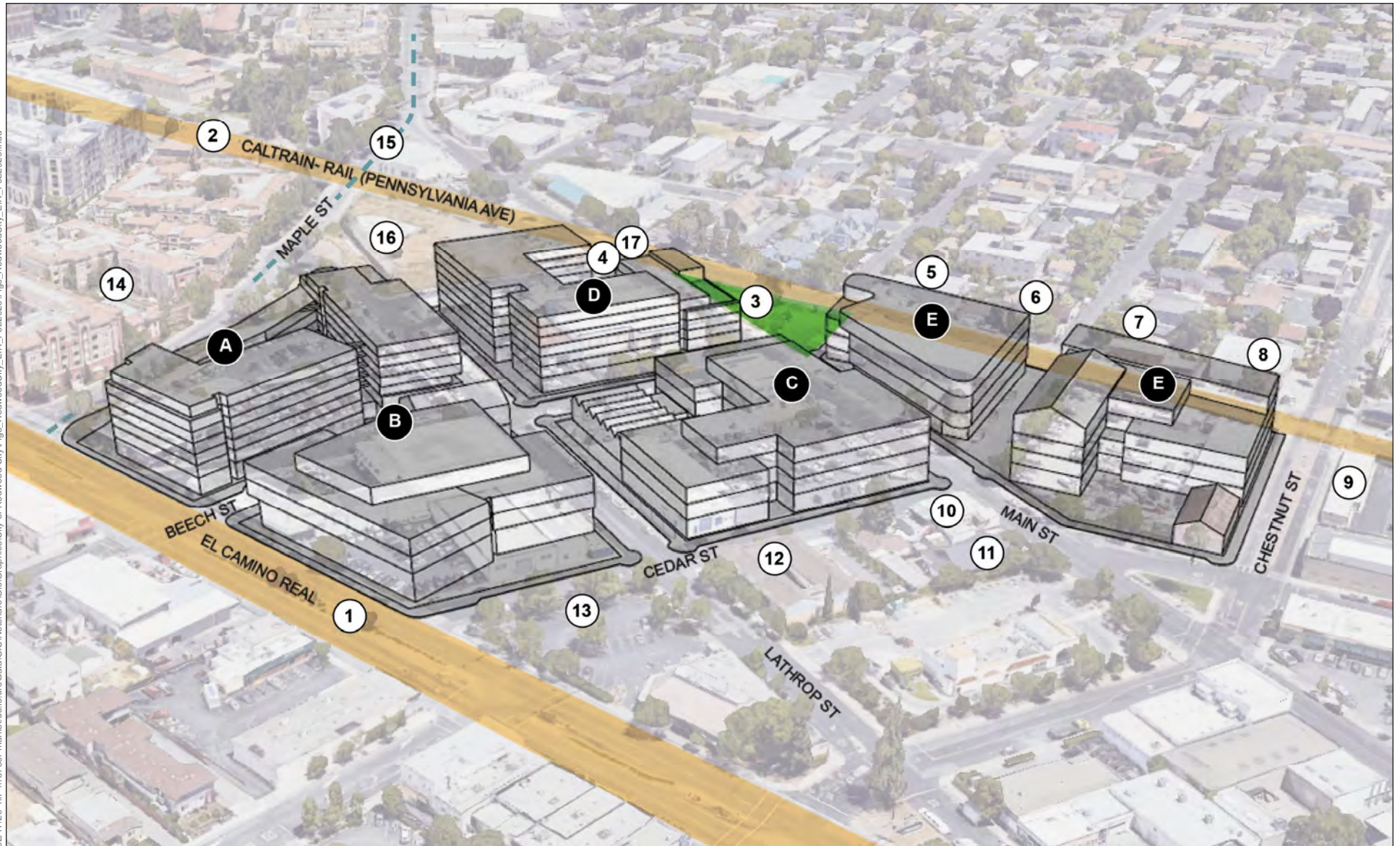
Table 3.1-3 below and Figure 3.1-2 list the properties adjacent to the project site, their zoning classification, 2010 General Plan designation, and if applicable, building height and use.

Table 3.1-3 Properties Adjacent to Project Site

No.	Name/Address	Zoning	2010 General Plan	Height (feet)
1	El Camino Real Streetscape	N/A	Mixed-Use Corridor – El Camino Real	N/A
2	Caltrain Rail	N/A	N/A	N/A
3	Main Street Dog Agility Park	Public Facilities	Park	N/A
4	1202 Main Street	Mixed-Use Transitional	Mixed-Use Transitional	27
5	306 Beech Street	Multi-Family Residential Medium Density	Residential High Density	20
6	303 Cedar Street	Multi-Family Residential Medium Density	Residential High Density	23
7	304 Cedar Street	Multi-Family Residential Medium Density	Residential High Density	19
8	305 Chestnut Street	Multi-Family Residential Medium Density	Residential High Density	28
9	725 Shasta Street	Mixed Use Live/Work – Shelter	Mixed-Use Live/Work	26
10 ^a	1402/1406 Main Street	Mixed-Use Transitional	Mixed-Use Transitional	23
11 ^a	1414 Main Street	Mixed-Use Transitional	Mixed-Use Transitional	22
12	104 Cedar Street	Mixed-Use Transitional	Mixed-Use Transitional	23
13	1745 El Camino Real	Mixed-Use Corridor – El Camino Real	Mixed Use Corridor – El Camino Real	32
14	Irvine Apartments 1 Maple Street	Planned Community	Mixed-Use – Downtown	73
15	Maple Street Bike Route	N/A	N/A	N/A
16	1180 Main Street (under construction)	Mixed-Use Live/Work	Mixed-Use Live/Work	40
17	Caltrain Grade Crossing Improvement	N/A	N/A	N/A

Note:

^a The two properties at 1404/1406 Main Street and 1414 Main Street are non-designated historic resources and are considered sensitive for purposes of this analysis.



- A** Proposed Parcel
- 1** Existing Properties in the Project Vicinity



PROJECT VICINITY MAP

South Main Mixed-Use Development Project
City of Redwood City, California

FIGURE 3.1-2

Due to type of development at the project site, the site overall is considered to have low-quality views, because it lacks vividness and possesses a low degree of visual unity. As outlined below, the structures present in the project site are on small lots with one- to two-story structures, surrounded by broken and narrow sidewalks, surface parking lots, and overhead power lines. Visual unity is broken by the overhead power lines and lack of cohesiveness in the types of structures (e.g., adjacent light industrial and multi-family residential). In addition, the project site contains vacant structures (the roller-skating rink), as well as automobile-oriented uses such as mechanics shops, which do not have a high level of visual quality.

Major Gateways and Corridors

The City's General Plan identified several gateways and high-traffic-volume corridors in the area that are either on the project site or in the vicinity, as follows (City 2010b):

- **El Camino Real:** The central segment of El Camino Real, which extends from Brewster Avenue to Woodside Road, is on the northwestern border of the project site. This segment of the El Camino Real corridor is lined with relatively dense commercial developments compared to other segments of the corridor; narrow concrete sidewalks; and inconsistent street tree planting. Overall, the central segment of the El Camino Real corridor represents an urban visual environment, with the greatest density of urban visual features in the central Downtown area (City 2010b). At the project site, the corridor is lined with small-lot urban development, one- to three-story buildings, and expansive paved parking lots that are visible between the street frontage and adjacent buildings. Along the project site, El Camino Real serves as a transition zone between newer development to the north, and smaller one-story structures with commercial uses. Due to the lack of visual cohesiveness, the segment of El Camino Real that borders the project site is considered to have low-quality views.
- **Main Street:** Main Street crosses the project site from El Camino Real to the Caltrain railway tracks. The Main Street corridor in the project site is characterized by overhead powerline street trees, and fronts onto one- to two-story buildings. As a result, it is considered to have low-quality views as it traverses the project site.
- **Middlefield Road:** Middlefield Road is east of the project site, and is separated by the existing railroad lines from the project site. Middlefield Road is considered an important southern entrance to Downtown from Woodside Road and the unincorporated portion of the City, and beyond (City 2010b). The Middlefield Road corridor is a mix of older one- and two-story structures, including small multi-family residential buildings. Due to overhead power lines crossing Middlefield Road and the lack of streets trees, views of the corridor near the project site are considered low quality.
- **Woodside Road:** Woodside Road is just south of the project site. Woodside Road is the major northeast-southwest corridor through the City, and serves as a significant "gateway" connecting U.S. 101 to Interstate 280. From U.S. 101 to about El Camino Real, the corridor is relatively open, with adjacent heavy commercial and residential areas influencing the corridor's visual character (City 2010b). In this segment, the corridor is marked by roadway signage, overhead street lamps, and highway landscaping, primarily rows of oleander bushes and Caltrans chain-link fencing. There are no sidewalks on this section of Woodside Road (City 2010b). Because of these features, views of the corridor are considered low quality.

Existing Viewer Groups and Viewer Sensitivity

The following viewer groups have visual access to the project area: residents, motorists, pedestrians, bicyclists, and those using nearby open space (Main Street Dog Agility Park). The general sensitivity of these viewer groups to visual changes is characterized as follows:

- **Residents:** Residents are individuals whose residences are near the project area. Residential development is north and west of the project site. Viewer sensitivity is moderately high among residents because they are likely to value their local visual resources highly, appreciate the visual experience, and are more sensitive to changes in views. Although residential viewer sensitivity is high, because the project site lacks visually cohesive development that is further characterized by overhead power lines, auto-oriented land uses and damaged sidewalks, views of the project site from surrounding residential units are considered low quality.
- **Motorists:** Motorists on El Camino Real have views of the project site. Motorists who frequently travel in the area generally possess low visual sensitivity to their surroundings; the passing landscape becomes familiar to these viewers, and their attention typically is not focused on the passing views, but on the roadway, roadway signs, and surrounding traffic.
- **Bicyclists:** Viewer sensitivity is moderate, because bicyclists need to pay attention to the roadway conditions, as well as the traffic flow around them; however, they can enjoy the scenery as conditions allow.

Shadow

Shadows are a common and expected aspect of the built environment. As areas develop and redevelop, new buildings alter the dynamics of urban shade by changing the location and extent of shadows cast onto public spaces and other buildings. As discussed in Appendix SHDW (Shadow Study), the project site includes several commercial retail and warehouse buildings surrounded by surface parking areas. Of the 21 existing buildings on the project site at Parcels A through E, most are single-story structures. The maximum building height of these existing structures is approximately 30 feet. Due the height and density of the existing buildings, the existing shadow on properties adjacent to the project site is relatively limited.

There are no solar collectors in the project site, but the nearby building at 1500 El Camino Real at Vera Avenue includes a rooftop solar installation. However, due to the location of this building in relation to the project site, it is not subject to any new shadows from the proposed project, and thus is outside the study area. Similarly, San Jose Obrero Catholic Church is an officially Historic Designated property in the project vicinity; because it is approximately 300 feet north of the project site, it is not subject to any new shadows from the project, and not included in the study area. Perry's Feed Shed, which is considered a historic property for this DEIR, would be demolished as part of the proposed project, and therefore is not considered as part of the affected environment. Two structures adjacent to the southern boundary of the project site at Cedar Street and Main Street (1402/1406 Main Street and 1414 Main Street) are considered historic properties and are included in the study area.

Light and Glare

The project site has nighttime security lighting for several buildings and parking lots. The current car dealership includes nighttime lighting throughout the site. Glare is typical in the project area from existing buildings, as well as windshields of parked cars. As described in the City's General Plan EIR, the project site is defined as an urban area, and is therefore designated as LZ3 (medium level of lighting regulation) in accordance with the California Energy Commission's classification standards (City, 2010a).

3.1.4 Standards of Significance

Based on Appendix G of the State CEQA Guidelines and City's established standards, a project would result in a significant impact related to aesthetics if the following occurred:

1. If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality; in addition, the Redwood City General Plan defines significant shade and shadow as:
 - Introducing landscaping that would now or in the future cast substantial shadows on existing solar collectors;
 - Casting shadows that substantially impair the beneficial use of shadow-sensitive public open space;
 - Casting shadows that materially impair the historic significance of a historic resource; and
 - Casting shadows from parcels within a major transportation corridor onto adjacent Low, Medium, Medium-High, and High Density residential parcels that substantially impair the beneficial use of residential parcels.
2. Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area; or
3. In combination with past, present, and reasonably foreseeable projects, result in significant cumulative impacts with respect to aesthetics.

Specific to the analysis of new shadows that would be cast by the proposed project, shadows affecting only a small portion of an adjacent property, on a seasonal rather than daily basis, are considered to have a low impact. Shadows impacting a sensitive use area of an adjacent property, shading areas for an hour or more per day during multiple seasons, or that potentially impair the beneficial use of existing properties during certain times of day are considered to be medium impact. Shadows affecting an adjacent property year-round, covering a large portion of an adjacent property, or impairing a beneficial use are classified as high impact. This analysis of the proposed project's shadow impacts is based on the shadow study provided in Appendix SHDW.

However, as discussed previously, the project falls under the purview of Public Resources Code Section 21099(d); due to the transit-oriented nature of the project site, aesthetic impacts of the proposed project are not considered significant under CEQA. The aesthetics analysis that follows is for informational purposes only.

3.1.5 Impact Discussion

AE-1	The project would not conflict with applicable zoning and other regulations governing scenic quality.
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Design and Development Standards

The proposed project would include one building each on Parcels A, D, and F,⁶ developed with primarily residential uses; and four additional buildings on Parcels B, C, and E, where the primary use would be commercial office space (refer to Figure 2.4 – Proposed Project Site Plan, in Chapter 2, Project Description of this DEIR). The proposed project would develop 540 multi-family residential units and approximately 530,000 square feet of office uses, an 8,400-square-foot childcare facility (not including

⁶ The non-contiguous project Parcel F encompasses approximately 0.15 acre in the DTPP area and was analyzed previously in the DTPP EIR; visual resources effects at Parcel F are addressed in the Consistency Analysis provided in Appendix CNA of this DEIR.

5,800 square feet of dedicated outdoor space), 28,800 square feet of retail uses, and approximately 40,000 square feet of public open space proposed throughout the project site.

The proposed project would demolish all existing buildings on the six project Parcels A through F. A description of proposed site design and project renderings are included in this DEIR in Chapter 2, Section 2.5, Project Characteristics. A summary is provided below to provide context for the impact discussion. Parcels A through D would be developed with one structure each, and Parcel E would have two structures as follows:

- Parcel A would be developed with a seven-story, 85-foot-tall building. The proposed building would include a corner plaza at Maple Street and El Camino Real. The interior courtyard would include private green space, as well as a pool and other amenities.
- Parcel B would be developed with a four-story, 75-foot-high building. The building would have two entrances: one at the corner of El Camino Real and Beech Street; and an entry court at Lathrop Street. The main entertainment space would be along El Camino Real.
- Parcel C would be developed with a four-story, 62-foot-high building. The primary building entrance would be along Main Street, with a private tenant entrance along Lathrop Street. Parking lot access would be via Cedar Street. Private open space would be available on the ground-floor inner courtyard of the proposed building.
- Parcel D would be developed with a seven-story, 85-foot-high building. The main entry to the building would be along Lathrop Street. The one-story structures at the corner of Elm and Main Streets are outside the project scope, and are assumed to remain in their current configuration. A secondary entry plaza would be provided along Beech Street. Parking garage entry would be available via Elm Street.
- Parcel E would be developed with two four-story buildings, each 62 feet high. The existing Perry's Feed Shed would be replaced with a similar one-story shed structure that would support the proposed public open space with retail uses. The main entrances for both buildings would be along Main Street, with entry plazas and pedestrian facilities. Parking access would be available at the terminus of Cedar Street.

Parcels A and B are designated by the General Plan and zoned MUC-ECR. Parcels C, D, and E are designated and zoned MUT. The Zoning Code allows a maximum bonus height of 85 feet and six stories in the MUC-ECR District with the provision of community benefits, or by demonstrating street frontage constraints (Zoning Code, Table 53-3). As outlined above, the project proposes a height of 85 feet on Parcel A and 75 feet on Parcel B. The proposed project includes ground-floor retail space, childcare facilities, and affordable housing to qualify for this bonus height in the MUC District. The Zoning Code allows for a maximum bonus height of 60 feet in the MUT District with the provision of community benefits (Zoning Code, Table 55-3). The proposed project includes public open space, affordable housing, and new pathways to qualify for this bonus height in the MUT district. In addition, the project applicant is seeking the approval of concessions and incentives as allowed by the Density Bonus Law for heights and setback requirements to be able to accomplish the project's goals of providing affordable housing (Govt. Code § 65915(d)(2)(B)). With approval of the requested concessions and the application of state density bonus requirements, the proposed project would not conflict with existing zoning height requirements.

In addition, the proposed project would comply with the development standards and City goals outlined in Section 3.1.3.1, Regulatory Framework. The proposed project would comply with Zoning Code Article 45 by integrating an architectural style that is intended to be contemporary, modern, and context-sensitive to the surrounding area; and that features residential buildings with a neutral color palette. The resulting

buildings would therefore blend with existing development bounding the project site along El Camino Real and Maple Street. In addition, proposed landscaping and trees would visually “soften” the comparative newness and prominence of the proposed buildings compared to lower-scaled development on surrounding parcels. The project is designed to maximize connectivity to public streets by including plaza entries, open space accessible to the public, and street-level commercial uses, thereby further activating public space, and implementing Policy BE-1.7 and Zoning Code Article 55. The use of subterranean parking throughout the project site would further de-emphasize the visual prominence of parking. The building heights would partially step down to provide a transition between residential uses in the Downtown Core and commercial uses along Lathrop Street and El Camino Real.

The proposed structures would be over 50 feet in height, and therefore would be subject to review by the AAC, which would assess the proposed project for compliance with applicable design regulations. Regardless, because the proposed project would comply with General Plan and zoning code policies established to enhance aesthetic resources, the proposed project would not conflict with City design and development standards.

Visual Character

As described above in Section 3.1.3.3, the project site is characterized by urban uses and surface parking lots. The proposed project would develop the project site with mixed uses that would include residential, retail, office, and open space uses. Changes to the existing visual character would occur during both project construction and operation.

Construction: Construction activities at the project site would mostly be visible from the surrounding uses, including sensitive viewers at the adjacent residential uses. Project construction is expected to last 25 to 27 months. Project construction would involve three basic activities: (1) demolition of existing structures; (2) excavation and grading; and (3) construction of proposed buildings. Construction activity would vary on a weekly basis, depending largely on the number of workers and construction trucks needed for the activities during each time period. Construction staging would be on the project site, and internal roads to the site would be closed.

Construction activities would remove all existing land uses at the project site, and temporarily introduce new visual features, including construction equipment, vehicles, and materials storage areas. Although construction activities under the proposed project would be visible from adjacent public and private vantage points, changes to the appearance of the project site would be temporary in nature. Furthermore, sensitive viewers at adjacent residences would have limited views of construction activities due to the temporary perimeter fencing that would be placed around the site that would screen most views from street or ground-floor levels. Construction activities could involve periods of activity that extend beyond daytime hours into early evening. However, lighting used during nighttime work would be generally focused on the project site and away from sensitive residential uses, and would not operate beyond 8 p.m., consistent with the Redwood City Municipal Code. Potential nighttime work for the upgraded sewer pipeline crossing at Veterans Boulevard would be limited to several nights and would not occur near any sensitive receptors. Due to the limited scenic value that currently exists at the project site, and because of the temporary nature of project activities, no substantial degradation of the existing visual environment would result.

Operation: As discussed above under Design and Development Standards, the proposed project's site design program includes architectural elements that would be context-sensitive to the surrounding area. The proposed buildings would include building setbacks, pedestrian plazas, and open space to provide for visually interesting features at the pedestrian level, thereby enhancing the visual character of the project site. The building setback would be both at the street level and at the upper levels. The upper-level setback would reduce the apparent mass of the building, and thereby create visual interest and reduce shadows (see discussion below). The lower building heights proposed for Parcel E would also

provide a transition zone to the lower-height buildings east of the Caltrain tracks. In addition, the proposed project would underground utilities and provide for continuous sidewalks, bike lanes, and open space. These improvements would generally result in an improvement of the visual character in the project site compared to existing conditions.

The proposed project would demolish the existing structures at the project site. However, as described in Section 3.1.3.2, Existing Site, the existing project site is considered to have low-quality views. Because the proposed project would provide a unified building form and improve the existing pedestrian environment, it would generally result in an improved visual environment compared to existing conditions. Therefore, sensitive viewers like occupants of adjacent residential uses would generally experience an improvement to the existing urban form. Similarly, pedestrians, motorists, and bicyclists that pass through or along the project site would generally experience an improved visual environment due to the updated architectural and landscape elements.

Project implementation would alter the existing visual character of the existing area. However, because the proposed project meets the applicable zoning requirements, provides various high-quality visual resources such as landscaping and open space, and would be subject to City review standards of the AAC that promote high-quality design and construction, the visual change resulting from the proposed project would not be adverse.

Shade and Shadow

This analysis of potential shadow impacts from the proposed project is based on the shadow study provided in Appendix SHDW. Using a digital 3D model of the proposed project and the surrounding context, the shadow analysis simulates the sun's position and resulting shadows on the Summer and Winter solstices (June 21 and December 21), and the Vernal and Autumnal equinoxes (March 20 and September 23). These solar positions are commonly used as the basis for shadows studies because they represent the full range of shade throughout the year. For each of the representative days, shadow positions are modeled in 3-hour increments: 9:00 a.m., noon, 3:00 p.m., and 6:00 p.m. The resulting diagrams depict how the proposed buildings' shadows move throughout the day on each of the representative days, as shown on Figure 3.1-3. These shadow diagrams show a three-dimensional oblique perspective of the proposed buildings' massing, and typical shadows cast onto adjacent properties.

Due to general orientation of the project site to the path of the sun, areas shaded by the proposed project would occur along El Camino Real to the west, Maple and Elm Streets to the northwest, and Pennsylvania Avenue to the northeast. The interior streets in the project site would also be impacted by shade from the proposed buildings. Table 3.1-4 summarizes the results of the shadow analysis on each property adjacent to the project site.

Due to the wide corridors on three sides of the project site—El Camino Real to the southwest, Maple Street and channelized Redwood Creek to the northwest, and Caltrain tracks along Pennsylvania Avenue to the northeast—the proposed project would only affect adjacent properties along these three corridors in the winter. During the winter, the sun is lower in the sky, so that the proposed project buildings would cast longer shadows than in the summer, when the sun is higher in the sky, and the shadows cast by the buildings would be shorter.

Based on the shadow diagrams on Figure 3.1-3, the hours of daylight at two historic structures (Property Nos. 10 and 11) would be slightly shortened during late afternoon hours in spring, summer, and fall season due to the shade cast from buildings in Parcel B and Parcel C. Because the additional shadows cast on these properties would be limited, the project would not substantially impair the historic character of these buildings. Therefore, shadows from the proposed project would not exceed the applicable standard of significance (i.e., casting shadows that materially impair the historic significance of a historic resource).

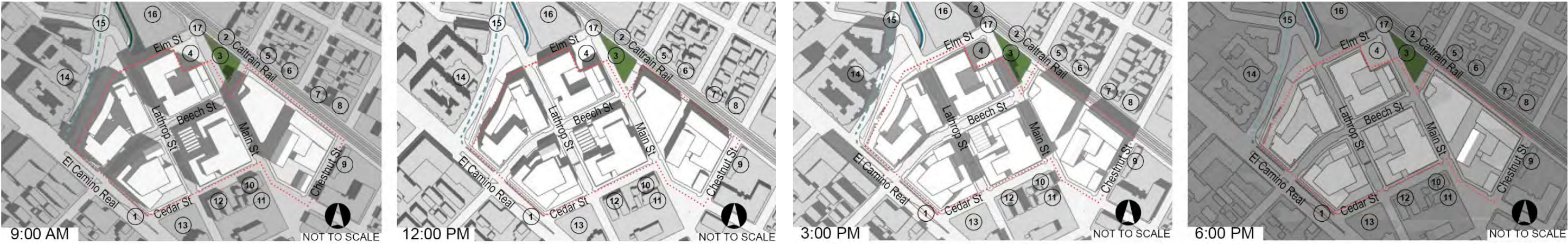
Table 3.1-4 Shadow Impact Analysis Results

No.	Address	Shadow Impact	Impact Evaluation
1	El Camino Real	The northeastern side of the sidewalk adjacent to Parcel A and Parcel B would be partially in shade during morning hours.	Medium
2	Caltrain Rail	The portion of tracks adjacent to Parcel D and Parcel E would be shaded in the afternoon hours.	Medium
3	Main Street Dog Agility Park	In spring and fall, a small portion of the park adjacent to Beech Street would be in shade in the early-morning hours; and a small portion adjacent to Main Street would be shaded in the afternoon hours. In winter, the park would be mostly shaded during early morning and afternoon hours.	Medium
4	1202 Main Street	Except for summer, buildings would be partially in shade during the day, and mostly in shade in winter. In summer, the building would be shaded in the afternoon.	Medium
5	306 Beech Street	Only in winter, the facade facing Pennsylvania Avenue would be in shade in the afternoon hours.	Low
6	303 Cedar Street	Only in winter, the facade facing Pennsylvania Avenue would be in shade in the afternoon hours.	Low
7	304 Cedar Street	Only in winter, the facade facing Pennsylvania Avenue would be in shade in the afternoon hours.	Low
8	305 Chestnut Street	Only in winter, the facade facing Pennsylvania Avenue would be in shade in the afternoon hours.	Low
9	725 Shasta Street	The daylight during summer would be slightly shortened due to the shadow cast by the building at Parcel E in the late-afternoon hours.	Low
10	1402/1406 Main Street ^a	The daylight during spring, summer, and fall would be slightly shortened due to the shadow cast from buildings at Parcel B and Parcel C in the late-afternoon hours.	Low
11	1414 Main Street ^a	The daylight during spring, summer, and fall would be slightly shortened due to the shadow cast from the building at Parcel C in the late-afternoon hours.	Low
12	104 Cedar Street	The daylight during summer would be slightly shortened due to the shadow cast by the building at Parcel C in the late-afternoon hours.	Low
13	1745 El Camino Real	The existing building would not be impacted by the shadow cast from the proposed project, but the surface parking lot would partially be in shade in summer during the late-afternoon hours.	Low
14	Irvine Apartments 1 Maple Street	Only the southeast-facing facade would be impacted in winter in the morning by the shadow cast from Parcel A.	Low
15	Maple Street Bike Route	The southeastern side of the bike route adjacent to Parcel A would be in shade during morning hours year-round.	Medium
16	1180 Main Street (under construction)	A small portion of the building facing Elm Street would be in shade only in the early morning of spring and fall. In winter, a small portion of the southeast-facing facade would be in shade during most hours in a day.	Medium
17	Caltrain Grade-Crossing Improvement	In winter, the western side of the crossing would be in shade in the afternoon hours.	Low

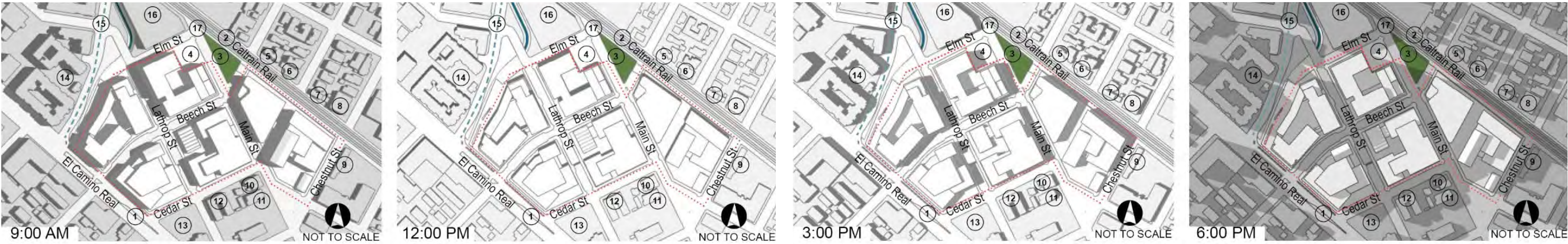
Note:

^a The two properties at 1402/1406 Main Street and 1414 Main Street are non-designated historic resources and are considered sensitive for purposes of this analysis.

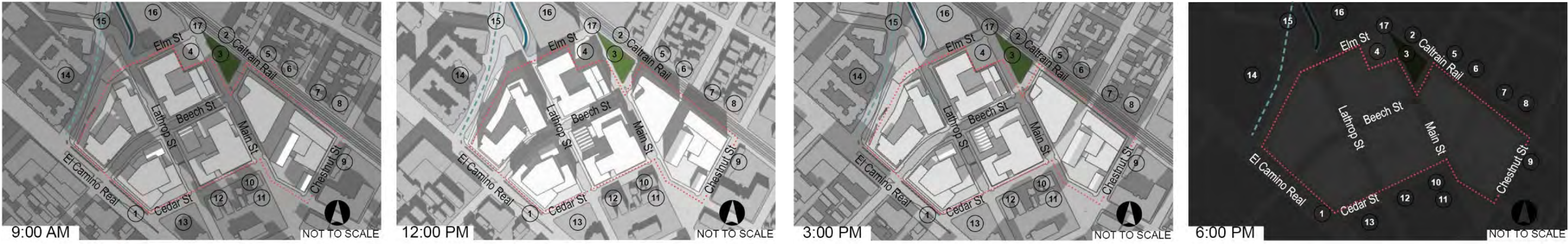
Equinox (MARCH 21/SEPTEMBER 21)



Summer Solstice (June 21)



Winter Solstice (December 21)



SHADOW DIAGRAMS

South Main Mixed-Use Development Project
City of Redwood City, California

FIGURE 3.1-3

The shadows would affect five adjacent residential properties during the winter months: Property Nos. 5, 6, 7, 8, and 14, as shown in Table 3.1-4. The shadow impacts on residential properties are limited to one season, and do not affect the entire property; therefore, the new shadows introduced by the proposed project would not exceed the applicable standard of significance (i.e., casting shadows from parcels within a major transportation corridor onto adjacent Low, Medium, Medium-High, and High-Density residential parcels that substantially impair the beneficial use of residential parcels). During the winter months, shade cast by the building at Parcel D would fall onto a portion of the adjacent property to the north that includes future commercial development at 1180 Main Street (Property No. 16).

The shadow impact on the adjacent mixed-use properties abutting the southeastern side of the project site, Property Nos. 9, 12, and 13, is considered low, because the existing buildings would be shaded in the later summer hours. The mixed-use building abutting the northeastern portion of Parcel D, property No. 4, would be entirely shaded in winter, and have a dark southwestern facade in afternoon hours in spring, fall, and winter. Because the existing building casts shadow during the same hours, shadows from the proposed project would not substantially impair the beneficial uses of these properties. Furthermore, because these existing property uses are not considered shadow-sensitive, the proposed project shadows would not exceed the applicable standards of significance.

The proposed buildings on Parcels A and B would cast shadows on portions of the El Camino Real sidewalk in the morning throughout the year on property No. 1. For the Maple Street bike route and the Caltrain Grade-Crossing Improvement, property Nos. 15 and 17, year-round shadows would be cast for a portion of the day.

The Main Street Dog Agility Park currently receives shadows from existing buildings. During spring and fall, the southeastern side of the park would be slightly shaded by the building on Parcel E in the early morning, and by the building on Parcel D in the afternoon. In the shaded area from the Parcel E building, there is an existing shade structure; therefore, the use of the park would not be negatively affected by the morning shade. The afternoon shadow by the Parcel D building would affect a small portion of the park abutting Main Street and Beech Street, but would not substantially impair use of the park. In the winter months, the park would be partially shaded by the Parcel E building during early-morning hours; and by Parcel D building during afternoon hours (see Table 3.1-4, property No. 3, and Figure 3.1-3). The shadow in the winter would cover more than half of the park. There are existing shadows cast by existing buildings during the same hours, and the shaded area is not a substantial increase that would impair the use of the park. Therefore, the additional shadows that would be cast by the proposed project would not exceed the applicable standard of significance (i.e., casting shadows that substantially impair the beneficial use of shadow-sensitive open space).

AE-2	The project would not create a new source of substantial light or glare that would adversely affect day or nighttime views in the area.
-------------	--

The proposed project is in an urbanized area of the City. Land uses in the immediate project site vicinity include multi-family residential, commercial, and retail uses. All of these land uses produce light and glare from indoor and outdoor lighting and surfaces, which is typical of such land uses. The proposed project includes demolition and removal of the existing land uses from the project site, and development of the site with mixed residential/retail/office buildings. Proposed project development would create nighttime spill light and glare from building lights, open space area lights, pedestrian lights, and vehicle lights. Proposed lighting would be designed to provide pedestrian-scaled lighting, and to enhance public safety in compliance with the applicable development regulations (e.g., Title 24 requirements or Redwood City Zoning Code requirements). Additionally, the potential increase in nighttime light from the project would not be bright enough to substantially affect nearby sensitive uses, because it would be consistent with

residential and office use lighting. Proposed project construction materials, such as brick, were chosen to minimize daytime glare (as detailed in Appendix PLNS, Project Plans).

The proposed project would include interior and exterior lighting that would comply with City's Zoning Code, Section 53.3.A.3.c, which requires that lighting in plazas, paseos, courtyards, sidewalks, and pedestrian walkways must be incorporated with low-mounted, downward-casting features that reduce light trespass onto adjacent properties. In addition, the proposed project would be required to meet the lighting power allowances for LZ3 for newly installed outdoor lighting equipment, contained in Title 24, Parts 1 and 6, Building Energy Efficiency Standards.

The proposed project would install windows with low-emissivity (Low-E) glass that is designed to reduce heat gain without reducing the amount of visible light that passes through the window, consistent with Title 24 energy efficiency standards (California Energy Commission 2019). By maximizing the visible light that passes through the window, limited light would be reflected off the glass, thereby limiting the amount of glare. Because the proposed project would comply with the above lighting standards and Title 24 energy efficiency standards, and incorporate building materials that are not highly reflective (refer to Chapter 2, Project Description, and the project plans provided in Appendix PLNS), the resulting light and glare introduced by the proposed project would not exceed the applicable standards of significance (i.e., create a substantial new source of light and glare).

3.1.6 Cumulative Impacts

AE-3	The project, in combination with past, present, and reasonably foreseeable projects, would not result in substantial cumulative impacts with respect to aesthetics.
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The geographic context for the analysis of cumulative impacts on visual character include the cumulative development projects in view of the proposed project site. Other foreseeable projects that would not be visible from the project site, or from which the proposed project would not be visible, would not typically have the potential to combine with the proposed project, and result in a cumulative impact on visual character. Similarly, the geographic context for the analysis of cumulative impacts related to shade and shadows, and light and glare, would include the cumulative development projects located in a position to create shading or potential light and glare impacts on the same properties as the proposed project.

The proposed project would intensify urban uses in the project site; therefore, together with cumulative development projects, the proposed project would modify the visual characteristics of the project area. Of the cumulative projects listed in Section 3.3, Cumulative Impact Analysis, most would not be visible from the project site; either during construction, or following project development, due to distance and intervening features such as structures and trees. Furthermore, sensitive viewers that could be affected by project implementation, primarily occupants of residential uses adjacent to the project site, would have little or no exposure to visual changes resulting from the related cumulative projects. In addition, the proposed project and other development projects in the area would comply with the comprehensive development standards and design guidelines of the City. Compliance with design standards, including review by the AAC, would ensure that approved projects would serve to promote a more cohesive visual environment that would be similar in scale and form. Therefore, even with the increased development intensity, the proposed project, in combination with cumulative projects, would not result in a cumulative impact that would exceed the applicable standard of significance (e.g., in combination with past, present, and reasonably foreseeable projects result in significant cumulative impacts with respect to aesthetics).

With respect to light and glare, proposed project development, in combination with related projects, would result in an intensification of land uses in an already urbanized area of the City that has light and glare typical of urban areas. Due to its scale in relation to existing development in the area, light generated

from the proposed project could be seen from more distant areas around the project site. Thus, the proposed project and related projects would contribute to ambient light levels in the surrounding area. However, because this is an existing urbanized area, the presence of additional nighttime illumination from the proposed and related projects would not represent a substantial alteration to the existing nighttime visual environment. Daytime glare resulting from the related projects would have limited potential to cause a substantial cumulative effect, due to the limited area affected by potential glare from individual projects. Moreover, as indicated previously, the proposed project would incorporate building materials including Low-E window glass that would minimize potential glare, and therefore would not substantially contribute to potential cumulative glare impacts.

3.1.7 References

- California Energy Commission. 2019. 2019: Building Energy Efficiency Standards for Residential and Nonresidential Buildings. For the 2019 Building Energy Efficiency Standards. Title 24, Part 6, and associated administrative regulations in Part 1. Available online at: <https://ww2.energy.ca.gov/2018publications/CEC-400-2018-020/CEC-400-2018-020-CMF.pdf>.
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- United States Forest Service (USFS). 1995. Landscape Aesthetics: A Handbook for Scenery Management. Agriculture Handbook Number 701. Available online at: https://www.fs.fed.us/cdt/carrying_capacity/landscape_aesthetics_handbook_701_no_append.pdf. Accessed November 2019.

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3.2 Air Quality

This section describes the regulatory framework and existing conditions on the project site related to air quality, and the potential impacts of the proposed project on air quality. This analysis is based on the methodology recommended by the Bay Area Air Quality Management District (BAAQMD) for project-level review, using information available. It focuses on air pollution from regional emissions, and localized pollutant concentrations from construction and buildout of the proposed project. Transportation-sector emissions are based on trip generation estimates provided in Section 3.5, Transportation.

Emissions of the proposed project were modeled using the California Emissions Estimator Model (CalEEMod), version 2016.3.2. Criteria air pollutant emissions modeling data for the construction and operational phases of the proposed project are included in Appendix AQTR of this DEIR.

3.2.1 Summary

Table 3.2-1 provides a summary of the impact discussion in Sections 3.2.5 and 3.2.6.

Table 3.2-1 Summary of Impact Findings – Air Quality

Environmental Issues		Significant and Unavoidable	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
III. Air Quality.					
Where available, the significance criteria established by the applicable air quality management district or air pollution control district may be relied on to make the following determinations.					
Would the project:					
AQ-1	Conflict with or obstruct implementation of the applicable air quality plan?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
AQ-2	Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
AQ-3	Expose sensitive receptors to substantial pollutant concentrations?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
AQ-4	Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
AQ-5	Would the project, in combination with past, present, and reasonably foreseeable projects, result in significant cumulative impacts with respect to air quality?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

As indicated above, the proposed project would not create or result in significant impacts relating to the generation of objectionable odors. Project-related construction activities could result in potentially significant air quality impacts on a project and cumulative level. Operation of off-road construction equipment and construction, vendor, and truck-haul trips could generate emissions that exceed the BAAQMD average daily regional significance thresholds for fugitive dust (coarse and fine particulate

matter) and nitrogen oxides (NO_x) (see Impact AQ-2). Therefore, construction of the proposed project could also conflict with the applicable air quality management plan (see Impact AQ-1). Additionally, operation of diesel-powered off-road construction equipment, worker vehicles, and haul trucks could also generate toxic air contaminant (TAC) emissions that could result in exposing nearby residents to fine particulate matter concentrations and cancer risk levels that exceed the BAAQMD significance thresholds (see Impact AQ-3). However, implementation of Mitigation Measures AQ-2a and AQ-2b would require actions to reduce NO_x and particulate matter emissions from construction equipment and fugitive dust during construction activities, which would reduce these impacts to less-than-significant levels.

Specific to the proposed development on Parcel F, the analysis provided in Appendix CNA determined that the current development proposal on Parcel F would be consistent with the analysis and conclusion provided previously in the Downtown Precise Plan (DTPP) Program Environmental Impact Report (EIR). As required in the DTPP EIR, development on Parcel F is subject to implementation of Mitigation Measure 12-1 in the DTPP EIR. This mitigation measure requires the analysis of sensitive receptors through a health risk assessment and the implementation of project modifications, if necessary to comply with BAAQMD standards. The analysis provided under Impact AQ-3 below, as supported by the health risk assessment in Appendix AQTR, complies with Mitigation Measure 12-1 from the DTPP EIR. Furthermore, due to the cumulative and regional nature of air quality impacts, the analysis in this section of criteria pollutants (Impact AQ-2) and human health risks (Impact AQ-3), and the associated mitigation measures, applies to project Parcels A through E as well as the non-contiguous Parcel F.

3.2.2 Glossary

The following are definitions for terms used throughout this section.

- **AAQS:** Ambient Air Quality Standards
- **AB:** Assembly Bill
- **ABAG:** Association of Bay Area Governments
- **ADT:** average daily trip
- **AERMOD:** EPA's air dispersion modeling program
- **ARB:** California Air Resources Board
- **BAAQMD:** Bay Area Air Quality Management District
- **BMPs:** best management practices
- **CAA:** Clean Air Act
- **C/CAG:** City/County Association of Governments of San Mateo
- **CCR:** California Code of Regulations
- **CalEEMod:** California Emissions Estimator Model
- **CalMod:** Caltrain Modernization Program
- **CalEPA:** California Environmental Protection Agency

- **CARE:** Community Air Risk Evaluation
- **CEQA:** California Environmental Quality Act
- **CMP:** congestion management plan
- **Concentrations:** Refers to the amount of pollutant material per volumetric unit of air. Concentrations are measured in parts per million (ppm), parts per billion (ppb), or micrograms per cubic meter ($\mu\text{g}/\text{m}^3$).
- **Criteria Air Pollutants:** Those air pollutants specifically identified for control under the federal Clean Air Act (i.e., carbon monoxide, nitrogen oxides, lead, sulfur oxides, ozone, and particulates).
 - **CO:** Carbon monoxide, a common product of incomplete combustion. A criteria pollutant with state and federal standards. Not a primary photochemical reaction compound but involved in photochemical reactions. Dissipates rapidly and is therefore only important on a local scale near sources.
 - **NO_x:** Nitrogen oxides, a common product of combustion in the presence of nitrogen. Includes nitrogen dioxide (NO₂), which is a criteria pollutant with state and federal standards. Locally and regionally important due to its involvement in the photochemical formation of ozone (O₃).
 - **O₃:** Ozone, a gas mainly produced by a photochemical reaction between reactive organic gases and oxides of nitrogen in the presence of sunlight (also produced by molecular oxygen in the presence of ultraviolet light or electrical discharge). A strong oxidant that is damaging at ground level but necessary at high altitude (in the stratosphere, where it absorbs dangerous ultraviolet light). Also considered an important greenhouse gas. A criteria pollutant with state and federal standards.
 - **Pb:** Lead is a heavy metal, present in the environment mainly due to historical use in motor vehicle fuel. Primarily associated with lead smelting operations. A criteria pollutant with state and federal standards. Primarily of concern near sources.
 - **PM₁₀/PM_{2.5}:** Coarse particulate matter/fine particulate matter, that portion of particulate matter that tends to penetrate into the human lung. The subscript refers to aerodynamic diameter in microns. Criteria pollutants with state and federal standards. Locally and regionally important.
 - **SO_x:** Sulfur oxides, a common product of combustion in the presence of sulfur. Associated primarily with diesel and coal burning. Includes SO₂, a criteria pollutant with state and federal standards.
 - **ROGs/VOCs:** Reactive organic gases/volatile organic compounds, a portion of total organic compounds or gases, excludes methane, ethane, and acetone (due to low photochemical reactivity). “ROG” is generally used by the California Air Resources Board; “VOC” is generally used by the United States Environmental Protection Agency, but the terms are interchangeable for most uses.
- **DPM:** Diesel particulate matter
- **DTPP:** Downtown Precise Plan
- **EIR:** environmental impact report

- **Emissions:** Refers to the actual quantity of pollutant, measured in pounds per day or tons per year.
- **EPA:** United States Environmental Protection Agency
- **GHG:** greenhouse gas
- **HAP:** hazardous air pollutant
- **HRA:** health risk assessment
- **MTC:** Metropolitan Transportation Commission
- **NAAQS:** National Ambient Air Quality Standards
- **ppb:** parts per billion
- **ppm:** parts per million
- **ROG:** reactive organic gases
- **Sensitive receptor:** Land uses that are considered more sensitive to air pollution compared to others due to the types of population groups or activities involved. These land uses include residential, retirement facilities, hospitals, and schools.
- **SFBAAB:** San Francisco Bay Area Air Basin
- **SIP:** State Implementation Plan
- **SCAQMD:** South Coast Air Quality Management District
- **TAC:** toxic air contaminant
- **Technical Advisory:** Strategies to Reduce Air Pollution Exposure Near High-Volume Roadways
- **TRU:** Transport Refrigeration Units
- VMT: vehicle miles traveled
- **µg/m³:** micrograms per cubic meter

3.2.3 Environmental Setting

3.2.3.1 Regulatory Framework

Ambient air quality standards have been adopted at federal and state levels for criteria air pollutants. In addition, both the federal and state governments regulate the release of TACs. The City of Redwood City is in the San Francisco Bay Area Air Basin (SFBAAB), and is subject to the rules and regulations imposed by the BAAQMD, the national Ambient Air Quality Standards (AAQS) adopted by the United States Environmental Protection Agency (EPA), and the California AAQS adopted by the California Air Resources Board (ARB). Federal, state, regional, and local laws, regulations, plans, or guidelines that are potentially applicable to the proposed project are summarized below.

Federal and State Regulations and Standards

Ambient Air Quality Standards

The Clean Air Act (CAA) was passed in 1963 by the United States Congress and has been amended several times. The 1970 CAA amendments strengthened previous legislation, and laid the foundation for the regulatory scheme of the 1970s and 1980s. In 1977, Congress again added several provisions, including nonattainment requirements for areas not meeting national AAQS and the Prevention of Significant Deterioration program. The 1990 amendments represent the latest in a series of federal efforts to regulate the protection of air quality in the United States. The CAA allows states to adopt more stringent standards or to include other pollutants. The California CAA, signed into law in 1988, requires all areas of the state to achieve and maintain the California AAQS by the earliest practical date. The California AAQS tend to be more restrictive than the national AAQS.

The purpose of the National Ambient Air Quality Standards (NAAQS) is two-tiered: primarily to protect public health; and secondarily to prevent degradation to the environment (i.e., impairment of visibility; damage to vegetation and property). The standards are designed to protect “sensitive receptors” most susceptible to further respiratory distress, such as asthmatics, the elderly, very young children, people already weakened by other disease or illness, and people engaged in strenuous work or exercise. Healthy adults can tolerate occasional exposure to air pollutant concentrations considerably above these minimum standards before adverse effects are observed.

Under the CAA, EPA has established the NAAQS for six potential air pollutants: CO, O₃, NO₂, PM₁₀ and PM_{2.5}, SO₂, and lead (as shown below in Table 3.2-2). In addition, the State has set standards for sulfates, hydrogen sulfide, vinyl chloride, and visibility-reducing particles.

California has also adopted a host of other regulations that reduce criteria pollutant emissions, including:

- Assembly Bill (AB) 1493: Pavley Fuel Efficiency Standards
- Title 20 California Code of Regulations (CCR): Appliance Energy Efficiency Standards
- Title 24, Part 6, CCR: Building Energy Efficiency Standards
- Title 24, Part 11, CCR: Green Building Standards Code

Regulations and Guidance on Toxic Air Contaminants

Public exposure to TACs is a significant environmental health issue in California. TACs in California are regulated primarily through the Tanner Air Toxics Act (Chapter 1047, Statutes of 1983) and the Air Toxics Hot Spots Information and Assessment Act (AB 2588; Chapter 1252, Statutes of 1987). A total of 243 substances has been designated TACs under California law; they include the 189 (federal) hazardous air pollutants (HAPs) adopted in accordance with AB 2728, which required the state to identify the federal HAPs as TACs to make use of the time and costs the EPA had already invested in evaluating and identifying hazardous/toxic substances. The Air Toxics Hot Spots Information and Assessment Act seeks to identify and evaluate risks from air toxics sources, but does not regulate air toxics emissions. Under AB 2588, TAC emissions from individual facilities are quantified and prioritized by the air quality management district or air pollution control district. High-priority facilities are required to perform a health risk assessment, and if specific thresholds are exceeded, are required to communicate the results to the public through notices and public meetings. TACs are generally regulated through statutes and rules that require the use of Maximum Achievable Control Technology or Best Achievable Control Technology to limit TAC emissions.

Table 3.2-2 National and California Ambient Air Quality Standards

Pollutant	Averaging Time	CAAQS ^{1,3)}	NAAQS ^{2,3)}	
			Primary	Secondary
CO	1-Hour	20 ppm (23,000 µg/m ³)	35 ppm (40,000 µg/m ³)	NA
	8-Hour	9.0 ppm (10,000 µg/m ³)	9 ppm (10,000 µg/m ³)	NA
NO ₂	1-hour	0.18 ppm (339 µg/m ³)	100 ppb (188 µg/m ³)	NA
	Annual Arithmetic Mean	0.030 ppm (57 µg/m ³)	0.053 ppm (100 µg/m ³)	Same as Primary
O ₃	1-hour	0.09 ppm (180 µg/m ³)	NA	NA
	8-hour	0.070 ppm (137 µg/m ³)	0.070 ppm (137 µg/m ³)	Same as Primary
PM ₁₀	24-hour	50 µg/m ³	150 µg/m ³	Same as Primary
	Annual Arithmetic Mean	20 µg/m ³	NA	NA
PM _{2.5}	24-hour	NA	35 µg/m ³	Same as Primary
	Annual Arithmetic Mean	12 µg/m ³	12 µg/m ³	15.0 µg/m ³
SO ₂	1-hour	0.25 ppm (655 µg/m ³)	0.075 ppm (196 µg/m ³)	NA
	3-hour	NA	NA	0.5 ppm (1,300 µg/m ³)
	24-hour	0.04 ppm (105 µg/m ³)	0.14 ppm	NA
	Annual Arithmetic Mean	NA	0.030 ppm	NA
Sulfates	24-hour	25 µg/m ³	NA	NA
H ₂ S	1-hour	0.03 ppm (42 µg/m ³)	NA	NA
Lead	30-day Average	1.5 µg/m ³	NA	NA
	Calendar quarter	NA	1.5 µg/m ³	Same as Primary
	Rolling 3-month Average	NA	0.15 µg/m ³	
Vinyl Chloride	24-hour	0.01 ppm (26 µg/m ³)	NA	NA
Visibility-Reducing Particles	8-hour	Extinction of 0.23 per kilometer	NA	NA

Source: ARB 2016

Key: µg/m³ = micrograms per cubic meter; CO = carbon monoxide; NO₂ = nitrogen dioxide; O₃ = ozone; PM₁₀ = particulate matter 10 microns in diameter or less; PM_{2.5} = particulate matter 2.5 microns in diameter or less; ppm = parts per million; ppb = parts per billion; SO₂ = sulfur dioxide; H₂S = hydrogen sulfide

¹ The California Ambient Air Quality Standards for O₃, CO, SO₂ (1-hour and 24-hour), NO₂, PM_{2.5}, PM₁₀, and visibility reducing particles are values that are not to be exceeded. All others are not to be equaled or exceeded.

² Primary standards provide public health protection, including protecting the health of "sensitive" populations such as asthmatics, children, and the elderly. Secondary standards provide public welfare protection, including protection against decreased visibility and damage to animals, crops, vegetation, and buildings. The methodology for interpreting the NAAQS and determining when a violation has occurred is set forth in Title 40 of the U.S. Code of Regulations, Part 50, Primary and Secondary Ambient Air Quality Standards, and varies by pollutant.

³ Standards are expressed first in the units in which the standard was promulgated. Equivalent units in parentheses are based upon a reference temperature of 25 degrees Celsius and a reference pressure of 760 torr.

According to the California Almanac of Emissions and Air Quality (ARB 2013), most of the estimated health risk from TACs is attributed to relatively few compounds, the most dominant being diesel particulate matter (DPM). In 2000, ARB approved a comprehensive diesel risk reduction plan to reduce emissions from both new and existing diesel-fueled vehicles and engines. The regulation is anticipated to result in an 85% decrease in statewide diesel health risk by 2020 relative to the diesel health risk in the year 2000 (ARB 2000). Additional regulations apply to new trucks and diesel fuel. Subsequent ARB regulations on diesel emissions include the On-Road Heavy Duty Diesel Vehicle (In-Use) Regulation, the On-Road Heavy Duty (New) Vehicle Program, the In-Use Off-Road Diesel Vehicle Regulation, and the New Off-Road Compression Ignition Diesel Engines and Equipment Program. All of these regulations and programs have timetables by which manufacturers must comply and existing operators must upgrade their diesel-powered equipment.

The ARB has promulgated the following specific rules to limit TAC emissions:

- **13 CCR Chapter 10, Section 2485**, Airborne Toxic Control Measure to Limit Diesel-Fueled Commercial Motor Vehicle Idling.
- **13 CCR Chapter 10, Section 2480**, Airborne Toxic Control Measure to Limit School Bus Idling and Idling at Schools.
- **13 CCR Section 2477 and Article 8**, Airborne Toxic Control Measure for In-Use Diesel-Fueled Transport Refrigeration Units (TRU) and TRU Generator Sets and Facilities Where TRUs Operate.

The Air Quality and Land Use Handbook: A Community Health Perspective, published by ARB, provides guidance on land use compatibility with sources of TACs (ARB 2005). The handbook is not a law or adopted policy, but offers advisory recommendations for the siting of sensitive receptors near uses associated with TACs, such as freeways and high-traffic roads, commercial distribution centers, rail yards, ports, refineries, dry cleaners, gasoline stations, and industrial facilities. The handbook indicates that land use agencies have to balance other considerations, including housing and transportation needs, economic development priorities, and other quality-of-life issues. The recommendations relevant to the proposed project include avoiding siting new sensitive land uses within 500 feet of a freeway, urban roads with 100,000 vehicles per day, or rural roads with 50,000 vehicles per day. In response to new research demonstrating benefits of compact infill development along transportation corridors, ARB released a technical supplement, Technical Advisory: Strategies to Reduce Air Pollution Exposure Near High-Volume Roadways (Technical Advisory), to the 2005 Air Quality and Land Use Handbook (ARB 2017). This Technical Advisory was developed to identify strategies that can be implemented to reduce exposure at specific developments, or as recommendations for policy and planning documents. It is important to note that it is not intended as guidance for a specific project, and does not discuss the feasibility of mitigation measures for the purposes of compliance with the California Environmental Quality Act (CEQA). The benefits of compact infill development along transportation corridors include encouragement for physical activity by facilitating active transportation, such as biking and walking; density of development that helps support transit operations; and reduction in greenhouse gas (GHG) emissions associated with the car trips that are shortened or replaced by other modes of transportation (GHG emissions are discussed in Section 3.4, Greenhouse Gas Emissions). Some of the strategies identified in the Technical Advisory include implementation of speed reduction mechanisms, including roundabouts, traffic signal management, speed limit reductions, design that promotes air flow and pollutant dispersion along street corridors, solid barriers, vegetation for pollutant dispersion, and indoor high-efficiency filtration (ARB 2017).

Regional Regulations

Bay Area Air Quality Management District

The BAAQMD is the agency responsible for assuring that the National and California AAQS are attained and maintained, and prepares air quality management plans to attain ambient air quality standards in the in the SFBAAB. The BAAQMD prepares these air quality management plans in coordination with the Association of Bay Area Governments (ABAG) and the Metropolitan Transportation Commission (MTC). BAAQMD adopted the 2017 Clean Air Plan: Spare the Air, Cool the Climate, on April 19, 2017 (BAAQMD 2017b). This plan provides a regional strategy to attain state and federal air quality standards by reducing O₃, PM, and toxic air contaminants.

BAAQMD 2017 Clean Air Plan

The 2017 Clean Air Plan updates the most recent Bay Area O₃ plan, the 2010 Clean Air Plan, in fulfillment of State O₃ planning requirements. Over the next 35 years, the plan will focus on the three following goals:

- Attain all state and national air quality standards;
- Eliminate disparities among Bay Area communities in cancer health risk from toxic air contaminants; and
- Reduce Bay Area GHG Emissions to 40% below 1990 levels by 2030, and 80% below 1990 levels by 2050.

The plan includes 85 distinct control measures to help the region reduce air pollutants, and has a long-term strategic vision that forecasts what a clean air Bay Area will look like in the year 2050. The control measures aggressively target the largest source of GHGs, O₃ pollutants, and PM emissions – transportation. The 2017 plan includes more incentives for electric vehicle infrastructure, off-road electrification projects such as Caltrain and shore power at ports, and reducing emissions from trucks, school buses, marine vessels, locomotives, and off-road equipment (BAAQMD, 2017b).

BAAQMD Community Air Risk Evaluation Program

The BAAQMD Community Air Risk Evaluation (CARE) program was initiated in 2004 to evaluate and reduce health risks associated with exposure to outdoor TACs in the Bay Area. Based on findings of the latest report, DPM was found to account for approximately 85% of the cancer risk from airborne toxics. Carcinogenic compounds from gasoline-powered cars and light-duty trucks were also identified as significant contributors: 1,3-butadiene contributed 4% of the cancer risk-weighted emissions, and benzene contributed 3%. Collectively, five compounds—DPM, 1,3-butadiene, benzene, formaldehyde, and acetaldehyde—were found to be responsible for more than 90% of the cancer risk attributed to emissions. All of these compounds are associated with emissions from internal combustion engines. The most important sources of cancer risk-weighted emissions were combustion-related sources of DPM, including on-road mobile sources (31%), construction equipment (29%), and ships and harbor craft (13%). A 75% reduction in DPM was predicted between 2005 and 2015, when the inventory accounted for the ARB's diesel regulations. Overall, cancer risk from TAC dropped by more than 50% between 2005 and 2015, when emissions inputs accounted for State diesel regulations and other reductions (BAAQMD 2014).

Modeled cancer risks from TAC in 2005 were highest near sources of DPM: near core urban areas, along major roadways and freeways, and near maritime shipping terminals. Peak modeled risks were found to

be located east of San Francisco, near West Oakland, and near the Maritime Port of Oakland. The BAAQMD has identified seven impacted communities in the Bay Area; however, Redwood City lies outside of these seven impacted communities.

The major contributor to acute and chronic non-cancer health effects in the SFBAAB is acrolein. Major sources of acrolein are on-road mobile sources and aircraft, and there are relatively high acrolein emissions in areas near freeways and commercial and military airports (BAAQMD 2006). Because the appropriate tools needed to implement and enforce acrolein emission limits are not available, BAAQMD determined that acrolein emissions may be included in health risk assessment (HRAs) for screening or informational purposes, but BAAQMD will exclude them from final health risk assessment results (BAAQMD 2016).

In April 2018, the BAAQMD released a Measurement Study to Evaluate Controls for Reducing In-Home Pollutant Exposures at Homes near High Trafficked Roadways (BAAQMD 2018). The purpose of the limited study was to investigate the effectiveness of providing air filtration equipment to reduce fine particulate in homes near US 101 and I-280 freeways, and in two districts of San Francisco: Bayview Hunters Point and Potrero Hill. The following recommendations were derived based on the pilot study investigation: tighten building envelopes; reduce indoor emission events; educate residents; use of stand-alone air cleaning devices; upgrades to central forced air systems; and a focus on vulnerable subpopulations, such as infants, people with asthma, and elderly (BAAQMD 2018).

BAAQMD Rules and Regulations

Regulation 7, Odorous Substances

BAAQMD's Regulation 7, Odorous Substances, places general limitations on odorous substances and specific emission limitations on certain odorous compounds. Odors are also regulated under BAAQMD Regulation 1, Rule 1-301, Public Nuisance, which states that "no person shall discharge from any source whatsoever such quantities of air contaminants or other material which cause injury, detriment, nuisance or annoyance to any considerable number of persons or the public; or which endangers the comfort, repose, health or safety of any such persons or the public, or which causes, or has a natural tendency to cause, injury or damage to business or property." Under BAAQMD's Rule 1-301, a facility that receives three or more violation notices within a 30-day period can be declared a public nuisance.

Other Air Regulations

In addition to the plans and programs described above, BAAQMD administers a number of specific regulations on various sources of pollutant emissions that would apply to the proposed project, including:

- Regulation 2, Rule 2, New Source Review
- Regulation 2, Rule 5, New Source Review of Toxic Air Contaminants
- Regulation 6, Rule 1, General Requirements
- Regulation 6, Rule 2, Commercial Cooking Equipment
- Regulation 8, Rule 3, Architectural Coatings
- Regulation 8, Rule 4, General Solvent and Surface Coatings Operations
- Regulation 11, Rule 2, Asbestos, Demolition, Renovation and Manufacturing

City/County Association of Governments of San Mateo

The City/County Association of Governments of San Mateo (C/CAG) is the designated congestion management agency for the county. C/CAG's congestion management plan (CMP) identifies strategies to respond to future transportation needs, identifies procedures to alleviate and control congestion, and

promotes countywide solutions (San Mateo County 2018). Pursuant to the EPA's transportation conformity regulations and the Bay Area Conformity State Implementation Plan (also known as the Bay Area Air Quality Conformity Protocol), the CMP is required to be consistent with the MTC planning process, including regional goals, policies, and projects for the regional transportation improvement program. MTC cannot approve any transportation plan, program, or project unless these activities conform to the State Implementation Plan (SIP).

Plan Bay Area

Plan Bay Area is the Bay Area's Regional Transportation Plan/Sustainable Community Strategy. *Plan Bay Area 2040* was adopted jointly by the ABAG and MTC on July 26, 2017. *Plan Bay Area 2040* serves as a limited and focused update to *Plan Bay Area 2013*, with updated planning assumptions that incorporate key economic, demographic, and financial trends from the last several years (MTC and ABAG 2017). It lays out a development scenario for the region that, when integrated with the transportation network and other transportation measures and policies, would reduce GHG emissions from transportation (excluding goods movement) beyond the per-capita reduction targets identified by the ARB. *Plan Bay Area 2040* is discussed in greater detail in this DEIR in Chapter 3.3, Greenhouse Gas Emissions.

3.2.3.2 Air Pollutants of Concern

Criteria Air Pollutants

As discussed previously, the EPA and the ARB have identified six air pollutants as being indicators of ambient air quality: ozone, CO, NO₂, SO₂, particulate matter (PM₁₀, PM_{2.5}), and lead. Because the ambient air quality standards for these air pollutants are regulated using human health and environmentally based criteria, they are commonly referred to as "criteria air pollutants." Reactive organic gas (ROG) and NO_x are criteria pollutant precursors that form ozone through chemical and photochemical reactions in the atmosphere. In general, the State of California's standards, particularly those for ozone and PM (PM₁₀ and PM_{2.5}), are more stringent than the federal standards.

This section provides a brief description of criteria air pollutants and health effects of exposure:

- **Ozone (O₃)** is a colorless gas that is odorless at ambient levels. Ozone is the primary component of urban smog. It is not emitted directly into the air, but is formed through a series of reactions involving ROG and NO_x in the presence of sunlight. ROG and NO_x are referred to as "ozone precursors." Because ozone is not directly emitted, air quality regulations focus on reducing the ozone precursors of ROG and NO_x. Meteorology and terrain play a major role in ozone formation. Generally, low wind speeds or stagnant air coupled with warm temperatures and clear skies provide the optimum conditions for formation. As a result, summer is generally the peak ozone season. Because of the reaction time involved, peak ozone concentrations often occur far downwind of the precursor emissions. Therefore, ozone is a regional pollutant that often affects large areas. Individuals exercising outdoors, children, and people with lung disease, such as asthma and chronic pulmonary lung disease, are considered to be the most susceptible subgroups for ozone effects. Short-term ozone exposure (lasting for a few hours) can result in changes in breathing patterns, reductions in breathing capacity, increased susceptibility to infections, inflammation of lung tissue, and some immunological changes. Chronic exposure to high ozone levels can permanently damage lung tissue (BAAQMD 2017a).
- **Carbon Monoxide (CO)** is a colorless and odorless gas that, in the urban environment, is produced primarily by the incomplete burning of carbon in fuels; primarily, from mobile (transportation) sources. Relatively high concentrations are typically found near crowded

intersections and along heavily used roadways carrying slow-moving traffic. Even under the most severe meteorological and traffic conditions, high concentrations of CO are limited to locations within a relatively short distance (300 to 600 feet) of heavily traveled roadways. Vehicular traffic emissions can cause localized CO impacts, and severe vehicle congestion at major signalized intersections can generate elevated CO levels, called “hot spots,” which can be hazardous to human receptors adjacent to the intersections. CO enters the bloodstream through the lungs by combining with hemoglobin, which normally supplies oxygen to the cells. However, CO combines with hemoglobin much more readily than oxygen does, drastically reducing the amount of oxygen available to the cells. Adverse health effects from exposure to high CO concentrations, which typically can occur only indoors or within similarly enclosed spaces, include dizziness, headaches, and fatigue. CO exposure is especially harmful to individuals who suffer from cardiovascular and respiratory diseases (EPA 2019a).

- **Nitrogen Dioxide (NO₂)** is one of a group of highly reactive gases known as oxides of nitrogen, or NO_x. NO₂ is formed when ozone reacts with nitric oxide (i.e., NO) in the atmosphere, and is listed as a criteria pollutant because NO₂ is more toxic than nitric oxide. The major human-made sources of NO₂ are combustion devices, such as boilers, gas turbines, and mobile and stationary reciprocating internal combustion engines. Inhalation is the most common route of exposure to NO₂. Breathing air with a high concentration of NO₂ can lead to respiratory illness. Short-term exposure can aggravate respiratory diseases, particularly asthma, resulting in respiratory symptoms (such as coughing, wheezing, or difficulty breathing), hospital admissions, and visits to emergency rooms. Longer exposures to elevated concentrations of NO₂ may contribute to the development of asthma, and potentially increase susceptibility to respiratory infections (EPA 2019b).
- **Sulfur Dioxide (SO₂)** is one component of the larger group of gaseous oxides of sulfur (SO_x). SO₂ is used as the indicator for the larger group of SO_x because it is the component of greatest concern and found in the atmosphere at much higher concentrations than other gaseous SO_x. SO₂ is typically produced by such stationary sources as coal and oil combustion facilities, steel mills, refineries, and pulp and paper mills. The major adverse health effects associated with SO₂ exposure pertain to the upper respiratory tract. On contact with the moist mucous membranes, SO₂ produces sulfurous acid, a direct irritant. Concentration rather than duration of exposure is an important determinant of respiratory effects. Children, the elderly, and those who suffer from asthma are particularly sensitive to effects of SO₂ (EPA 2019c).
- **Suspended Particulate Matter (PM₁₀ and PM_{2.5})** is a complex mixture of extremely small particles and liquid droplets made up of a number of components, including acids (such as nitrates and sulfates), organic chemicals, metals, and soil or dust particles. Natural sources of particulates include windblown dust and ocean spray. The major areawide sources of PM_{2.5} and PM₁₀ are fugitive dust, especially from roadways, agricultural operations, and construction and demolition. Other sources of PM₁₀ include crushing or grinding operations. PM_{2.5} sources also include all types of combustion, including motor vehicles, power plants, residential wood burning, forest fires, agricultural burning, and some industrial processes. Exhaust emissions from mobile sources contribute only a very small portion of directly emitted PM_{2.5} and PM₁₀ emissions; however, they are a major source of ROG and NO_x, which undergo reactions in the atmosphere to form PM, known as secondary particles. These secondary particles make up the majority of PM pollution. Effects from short- and long-term exposure to elevated concentrations of PM₁₀ include respiratory symptoms, aggravation of respiratory and cardiovascular diseases, and cancer (WHO 2018). PM_{2.5} poses an increased health risk because these very small particles can be inhaled deep in the lungs and may contain substances that are particularly harmful to human health.

- **Lead** is a highly toxic metal that may cause a range of human health effects. Lead is found naturally in the environment and is used in manufactured products. Previously, the lead used in gasoline anti-knock additives represented a major source of lead emissions to the atmosphere. Metal processing is currently the primary source of lead emissions. The highest levels of lead in air are generally found near lead smelters. Other stationary sources are waste incinerators, utilities, and lead-acid battery manufacturers. Although the ambient lead standards are no longer violated, lead emissions from stationary sources still pose “hot spot” problems in some areas. Fetuses, infants, and children are more sensitive than others to the adverse effects of lead exposure. Exposure to low levels of lead can adversely affect the development and function of the central nervous system, leading to learning disorders, distractibility, inability to follow simple commands, and lower intelligence quotients. In adults, increased lead levels are associated with increased blood pressure. Lead poisoning can cause anemia, lethargy, seizures, and death, although it appears that lead does not directly affect the respiratory system.
- **Reactive Organic Gases (ROGs)/Volatile Organic Compounds (VOCs)** are compounds composed primarily of hydrogen and carbon atoms. Internal combustion associated with motor vehicle usage is the major source of ROGs. Other sources of ROGs include evaporative emissions from paints and solvents, the application of asphalt paving, and the use of household consumer products such as aerosols. Adverse effects on human health are not caused directly by ROGs, but rather by reactions of ROGs to form secondary pollutants such as O₃. There are no AAQS established for ROGs. However, because they contribute to the formation of O₃, the BAAQMD has established a significance threshold for this pollutant.

Toxic Air Contaminants

At the time of the last update to the TAC list in December 1999, the ARB had designated 243 compounds as TACs (ARB 1999). Additionally, the ARB has implemented control measures for a number of compounds that pose high risks and show potential for effective control. TACs are separated into carcinogens and noncarcinogens based on the nature of the physiological effects associated with exposure to a particular TAC. Carcinogens are assumed to have no safe threshold below which health impacts would not occur. Cancer risk is typically expressed as excess cancer cases per million exposed individuals, typically over a lifetime exposure or other prolonged duration. For noncarcinogenic substances, there is generally assumed to be a safe level of exposure below which no negative health impact is believed to occur. These levels may vary depending on the specific pollutant. Acute and chronic exposure to noncarcinogens is expressed as a hazard index, which is the ratio of expected exposure levels to an acceptable reference exposure level.

Diesel Particulate Matter

The majority of the estimated health risks from TACs can be attributed to relatively few compounds, the most important being particulate matter from diesel-fueled engines. In 1998, CARB identified DPM as a TAC based on evidence of a relationship between diesel exhaust exposure and lung cancer and other adverse health effects. Almost all diesel exhaust particles are 10 microns or less in diameter. Because of their extremely small size, these particles can be inhaled, and eventually trapped in the bronchial and alveolar regions of the lungs.

3.2.3.3 Existing Conditions

San Francisco Bay Area Air Basin

California is divided geographically into air basins for the purpose of managing the air resources of the state on a regional basis. An air basin generally has similar meteorological and geographic conditions throughout. The state is divided into 15 air basins. As mentioned previously, Redwood City is in the SFBAAB.

Air Basin Area Designations

EPA and ARB designate attainment status for criteria air pollutants based on the national AAQS and California AAQS, respectively. The purpose of these designations is to identify areas with air quality problems and thereby initiate planning efforts for improvement.

The three basic designation categories are “attainment,” “nonattainment,” and “unclassified”:

- **Attainment:** This designation signifies that pollutant concentrations in the area do not exceed the established standard. In most cases, a maintenance plan is required for a region after it has attained an air quality standard and is designated as an attainment or maintenance area after previously being designated as nonattainment. Maintenance plans are designed to ensure continued compliance with the standard.
- **Nonattainment:** This designation indicates that a pollutant concentration has exceeded the established standard. Nonattainment may differ in severity. To identify the severity of the problem and the extent of planning and actions required to meet the standard, nonattainment areas are assigned a classification that is commensurate with the severity of their air quality problem (e.g., moderate, serious, severe, extreme).
- **Unclassified:** This designation indicates that insufficient data exist to determine attainment or nonattainment.

The California designations also include a subcategory called “nonattainment-transitional,” which is given to nonattainment areas that are progressing and nearing attainment. The SFBAAB is currently designated a nonattainment area for the California and national O₃ standard, California and national PM_{2.5} standard, and California PM₁₀ standard, as shown in Table 3.2-3.

Existing Emissions

Table 3.2-4 shows the emissions associated with the existing land uses currently operating on Parcels A through E and Parcel F. The existing uses on site include auto sales, repair, and warehouse space, including one multi-tenant residential building owned by the City of Redwood City, and a former indoor roller rink. The analysis conservatively assumed there are no existing stationary sources.⁷

⁷ Because an existing source of emissions would reduce the net emissions resulting from the proposed project, this analysis provides the more conservative assumption of no existing stationary sources of emissions.

Table 3.2-3 SFBAAB Attainment Status

Pollutant	State Attainment Status	Federal Attainment Status
CO (1-hour and 8-hour)	Attainment	Attainment
O ₃ (1-hour)	Nonattainment	--
O ₃ (8-hour)	Nonattainment	Nonattainment
NO ₂ (1-hour)	Attainment	--
NO ₂ (Annual)	--	Attainment
PM ₁₀ (24-hour)	Nonattainment	Unclassified
PM ₁₀ (Annual)	Nonattainment	--
PM _{2.5} (24-hour)	--	Nonattainment ¹
PM _{2.5} (Annual)	Nonattainment	Unclassified/Attainment
SO ₂ (1-hour and 24-hour)	Attainment	Unclassified/Attainment ²
Lead (30-Day)	Attainment	Attainment
Lead (Quarter)	--	Attainment
Lead (3-month)	--	--
H ₂ S (1-hour)	Unclassified	--
Vinyl Chloride	No information available	--
Visibility Reducing Particles	Unclassified	--

Source: BAAQMD 2017a

¹ On January 9, 2013, EPA issued a final rule to determine that the Bay Area attains the 24-hour PM_{2.5} national standard. Despite this action, the Bay Area will continue to be designated as “non-attainment” for the national 24-hour PM_{2.5} standard until such time as the BAAQMD submits a “redesignation request” and a “maintenance plan” to EPA, and EPA approves the proposed redesignation.

² On June 2, 2010, the EPA established a new 1-hour SO₂ standard, effective August 23, 2010, which is based on the 3-year average of the annual 99th percentile of 1-hour daily maximum concentrations. The existing 0.030 ppm annual and 0.14 ppm 24-hour SO₂ NAAQS, however, must continue to be used until 1 year following EPA initial designations of the new 1-hour SO₂ NAAQS.

Table 3.2-4 Existing Average Daily and Annual Operational Criteria Air Pollutant Emissions

Source	ROG	NO_x	PM₁₀	PM_{2.5}
Annual Emissions (tons/year)				
Area	0.43	0.00	0.00	0.00
Energy	0.01	0.13	0.01	0.01
Mobile	0.47	1.25	0.91	0.25
Total Annual Emissions (tons/year)	0.91	1.38	0.92	0.26
Average Daily Emissions (pounds/day)				
Area	2.37	0.02	<0.01	<0.01
Energy	0.08	0.69	0.05	0.05
Mobile	2.55	6.84	4.97	1.39
Total Average Daily Emissions (lb/day)	5.0	7.5	5.03	1.45

Notes: Estimated by AECOM in 2019. Totals may not add due to rounding. Average daily emissions are based on the annual operational emissions divided by 365 days.

ROG = reactive organic gases; NO_x = nitrogen oxides; PM₁₀ = particulate matter less than 10 microns in diameter; PM_{2.5} = particulate matter less than 2.5 microns in diameter; lb/day = pounds per day

Sensitive Receptors

The BAAQMD defines sensitive receptors to be facilities or land uses that include members of the population that are particularly sensitive to the effects of air pollutants, such as children, the elderly, and people with illnesses (BAAQMD 2017a). Accordingly, land uses that are typically considered sensitive receptors include schools, daycare centers, parks and playgrounds, and medical facilities.

Residential areas are considered sensitive to air pollution because residents (including children and the elderly) tend to be at home for extended periods of time, resulting in sustained exposure to the pollutants present. Recreational land uses are considered moderately sensitive to air pollution. Exercise places a high demand on respiratory functions, which can be impaired by air pollution, even though exposure periods during exercise are generally short. In addition, noticeable air pollution can detract from the enjoyment of recreation. Industrial and commercial areas are considered the least sensitive to air pollution. Exposure periods are relatively short and intermittent, because the majority of the workers tend to stay indoors most of the time.

The nearest sensitive receptors to the project site are the immediately adjacent residential dwelling units to the north and south of project Parcels A through E. (Refer to impact discussion AQ-3 and Figures 3.2-1 and 3.2-2 for location of sensitive receptors.)

3.2.4 Standards of Significance

The proposed project would result in a significant impact related to air quality if it would:

1. Conflict with or obstruct implementation of the applicable air quality plan;
2. Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard;
3. Expose sensitive receptors to substantial pollutant concentrations;
4. Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people; or
5. Result in a cumulatively considerable contribution to a significant cumulative impact with respect to air quality.

The BAAQMD has prepared CEQA Air Quality Guidelines to assist in the evaluation of air quality impacts of projects and plans proposed in the SFBAAB. The guidelines provide recommended procedures for evaluating potential air impacts during the environmental review process, consistent with CEQA requirements; and include recommended thresholds of significance, mitigation measures, and background air quality information. They also include recommended assessment methodologies for air toxics, odors, and GHG emissions. In June 2010, the BAAQMD's Board of Directors adopted CEQA thresholds of significance and an update of the CEQA Guidelines. These thresholds are designed to establish the level at which the BAAQMD believed air pollution emissions would cause significant environmental impacts under CEQA.

In May 2011, the updated BAAQMD CEQA Air Quality Guidelines were amended to include a risk and hazards threshold for new receptors and modified procedures for assessing impacts related to risk and hazard impacts; however, this later amendment regarding risk and hazards was the subject of the December 17, 2015 California Supreme Court decision *California Building Industry Association v BAAQMD*, which clarified that CEQA does not require an evaluation of impacts of the environment on a project. The Supreme Court also found that CEQA requires the analysis of exposing people to

environmental hazards in specific circumstances, including the location of development near airports, schools near sources of toxic contamination, and certain exemptions for infill and workforce housing. The Supreme Court also held that public agencies remain free to conduct this analysis regardless of whether it is required by CEQA. To account for these updates, the BAAQMD published a newer version of the Guidelines dated May 2017, which includes revisions made to address the Supreme Court's opinion. The BAAQMD is also currently in the process of updating the Guidelines.

The following sections describe the BAAQMD thresholds of significance to analyze the proposed project's impact with respect to air quality per the BAAQMD May 2017 CEQA Guidelines. BAAQMD has stated that the CEQA Guidelines are for informational purposes only, and should be followed by local governments at their own discretion (BAAQMD 2017a). The BAAQMD CEQA Guidelines may inform environmental review for development projects in the Bay Area, but do not commit local governments or the BAAQMD to any specific course of regulatory action. The thresholds for criteria pollutants were developed through a quantitative examination of the efficacy of fugitive dust mitigation measures and a quantitative examination of statewide nonattainment emissions, and are used for the analysis of project-generated emissions.

3.2.4.1 Criteria Air Pollutant Emissions and Precursors

Table 3.2-5 presents the BAAQMD recommended thresholds of significance for construction-related and operational criteria air pollutant and precursor emissions. These thresholds represent the levels at which a project's individual emissions of criteria air pollutants or precursors would result in a cumulatively considerable contribution to the SFBAAB's existing air quality conditions. If daily average or annual emissions of construction-related or operational criteria air pollutants or precursors would exceed any applicable threshold listed in Table 3.2-5, the project would result in a cumulatively significant impact.

Table 3.2-5 Average Daily and Annual Criteria Air Pollutant Emissions Thresholds

Pollutant	Construction Phase	Operational Phase	
	Average Daily Emissions (lb/day)	Average Daily Emissions (lb/day)	Maximum Annual Emissions (tons/year)
ROG	54	54	10
NO _x	54	54	10
PM ₁₀	82 (exhaust)	82	15
PM _{2.5}	54 (exhaust)	54	10

Source: BAAQMD 2017a

Notes: ROG = reactive organic gases; NO_x = nitrogen oxides; PM₁₀ = particulate matter less than 10 microns in diameter; PM_{2.5} = particulate matter less than 2.5 microns in diameter.; lb/day = pounds per day

As shown in Table 3.2-5, the thresholds for PM₁₀ and PM_{2.5} during construction apply to exhaust emissions only. The BAAQMD CEQA thresholds of significance for fugitive dust emissions is application of Best Management Practices (BMPs).

3.2.4.2 CO Hotspots

Congested intersections have the potential to create elevated concentrations of CO, referred to as CO hotspots. The significance criteria for CO hotspots are based on the California AAQS for CO, which are 9.0 ppm (8-hour average) and 20.0 ppm (1-hour average). With the turnover of older vehicles, introduction of cleaner fuels, and implementation of control technology, the SFBAAB is in attainment of the California and national AAQS, and CO concentrations in the SFBAAB have steadily declined. There

have been no exceedances of the California and national CO AAQS since 1991 (BAAQMD 2017a). Because CO concentrations have improved, the BAAQMD has the following screening criteria to provide lead agencies and project applicants with a conservative indication of whether the implementation of the proposed project would result in CO emissions that exceed the significance criteria for CO hotspots (9.0 ppm [8-hour average] and 20.0 ppm [1-hour average]). The project would result in a less-than-significant impact to localized CO concentrations if the following screening criteria are met:

- The project is consistent with an applicable congestion management program established by the County Congestion Management Agency for designated roads or highways, the regional transportation plan, and local congestion management agency plans.
- The project would not increase traffic volumes at affected intersections to more than 44,000 vehicles per hour.
- The project traffic would not increase traffic volumes at affected intersection 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).

3.2.4.3 Community Risk and Hazards

The BAAQMD's significance thresholds for local community risk and hazard impacts apply to both the siting of a new source and to the siting of a new receptor. Local community risk and hazard impacts are associated with TACs and PM_{2.5} because emissions of these pollutants can have significant health impacts at the local level.

Because neither the City of Redwood City nor San Mateo County currently has a qualified risk reduction plan, this DEIR includes a site-specific analysis of TACs and PM_{2.5} impacts. Project-level emissions of TACs or PM_{2.5} from individual sources that exceed any of the thresholds listed below for an existing or new receptor are considered a potentially significant community health risk:

- An excess cancer risk level of more than 10 in a million, or a noncancer (i.e., chronic or acute) hazard index greater than 1.0 would be a significant cumulatively considerable contribution.
- An incremental increase of greater than 0.3 microgram per cubic meter (µg/m³) annual average PM_{2.5} from a single source would be a significant cumulatively considerable contribution.

These thresholds are applied to the construction and operational phases of the proposed project.

3.2.4.4 Odors

The BAAQMD's thresholds for odors are qualitative, based on BAAQMD Regulation 7, Odorous Substances. This rule places general limitations on odorous substances, and specific emission limitations on certain odorous compounds. Odors are also regulated under BAAQMD's Regulation 1, Rule 1-301, Public Nuisance, which states that no person shall discharge from any source whatsoever such quantities of air contaminants or other material which cause injury, detriment, nuisance, or annoyance to any considerable number of persons or the public; or which endangers the comfort, repose, health, or safety of any such persons or the public, or which cause, or has a natural tendency to cause, injury, or damage to business or property.

BAAQMD has established odor screening thresholds for land uses that have the potential to generate substantial odor complaints, including wastewater treatment plants, landfills or transfer stations, composting facilities, confined animal facilities, food manufacturing, and chemical plants.

3.2.5 Impact Discussion

This air quality impact discussion evaluates the impacts related to air quality and health risks and hazards that could result from short-term construction and long-term operation of the proposed project. The analysis identifies both project-level and cumulative environmental impacts, as well as feasible mitigation measures that could reduce or avoid the identified impacts. Detailed modeling methodology and emission estimates are provided in Appendix AQTR.

AQ-1	The project could conflict with or obstruct implementation of the applicable air quality plan.
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Air quality plans describe air pollution control strategies to be implemented by a city, county, or region. The primary purpose of an air quality plan is to bring an area that does not attain the California and national AAQS into compliance with the requirements of the CAA and California CAA requirements. As discussed previously, the most recent air quality plan is the BAAQMD 2017 Clean Air Plan. The proposed project during construction and operation is consistent with the 2017 Clean Air Plan if it supports the goals of the Clean Air Plan, includes applicable control measures from the Clean Air Plan, and would not disrupt or hinder implementation of any control measures from the Clean Air Plan (BAAQMD 2017a).

The 2017 Clean Air Plan identifies potential control measures and strategies, including rules and regulations that could be implemented to reduce air pollutant emissions from industrial facilities, commercial processes, on- and off-road motor vehicles, and other sources. BAAQMD implements these strategies through rules and regulations, grant and incentive programs, public education and outreach, and partnerships with other agencies and stakeholders.

Construction

Consistency with the air quality plan is also determined through evaluation of project-related air quality impacts and demonstration that project-related emissions would not result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable California or national AAQS. As discussed in more detail in AQ-2, project construction activities could result in NO_x emissions that exceed the thresholds and generate fugitive dust emissions. Because the Clean Air Plan is a strategy to attain the ozone and PM AAQS, construction activities could conflict with the BAAQMD Clean Air Plan.

Significance without Mitigation: Significant

Implementation of Mitigation Measures AQ-2a and AQ-2b, identified below in the analysis of Impact AQ-2, would reduce emissions of criteria pollutants during project construction. Mitigation Measures AQ-2a and AQ-2b would reduce ROG, NO_x, PM₁₀, and PM_{2.5} emissions from off-road equipment and construction activities that generate fugitive dust. With implementation of Mitigation Measures AQ-2a and AQ-2b, construction-related emissions would not exceed the applicable thresholds of significance. These mitigation measures would also be consistent with control measures identified in the 2017 Bay Area Clean Air Plan. For example, Control Measures TR22: Construction, Freight and Farming Equipment, and MSM-C1: Construction and Farming Equipment, call for incentives to retrofit construction equipment with DPM filters or upgrade to Tier 3 or 4 engines and use renewable alternative fuels in applicable equipment. Per Mitigation Measure AQ-2b, the proposed project would be consistent with TR22 and MSM-C1, because construction activities would use construction equipment equipped with Tier 4 final engines. Therefore, construction of the proposed project would not conflict with the BAAQMD Clean Air Plan.

Significance with Mitigation: Less than significant. Implementation of Mitigation Measure AQ-2a would reduce fugitive dust emissions to less than significant. Implementation of Mitigation Measure AQ-2b would reduce construction-related NO_x emissions below the BAAQMD's average daily threshold, as detailed below under the analysis of Impact AQ-2. Therefore, with implementation of proposed mitigation, project-related construction impacts associated would not conflict with the BAAQMD Clean Air Plan and would be less than significant.

Operations

Operation of the proposed project would support the goals of the Clean Air Plan, because it includes applicable control measures from the Clean Air Plan. For example, consistent with control measures TCM-D1 and TCM-D2, which call for expansion and improvement of bicycle and pedestrian facilities serving employment sites, educational and cultural facilities, residential areas, shopping districts, and other activity centers, the project would include improvement of pedestrian and bicycle connections to support the circulation network, and thereby facilitate the implementation of the El Camino Real Corridor Plan's visions, goals, and strategies to make the Corridor safer and more desirable to walk and bike along and across; and related policies from that plan supporting community benefits, small businesses, local retail, and a range of housing choices along the Corridor. Furthermore, consistent with control measure TCM-D3 from the Clean Air Plan, which calls for the promotion and support for land use patterns and infrastructure investments that support high-density, mixed-use, residential and employment development to facilitate walking, bicycling, and transit use, the proposed project would create a mixed-use environment that increases vibrancy of the existing area, encourages the reduction of automobile use, and supports activities within Downtown and the El Camino Corridor.

Projects that are consistent with the assumptions used in development of the air quality plan are considered to not conflict with or obstruct the attainment of air quality levels identified in the plan. Assumptions for emission estimates are based on population, employment, and land use projections taken from local and regional planning documents. As discussed in more detail in the Initial Study (Appendix IS), the proposed project would be consistent with the Redwood City General Plan, El Camino Real Corridor Plan, and Zoning Ordinances. For example, the project site is designated as MUC-C (Mixed-Use Corridor) and MU-T (Mixed Use – Transitional) per the Redwood City General Plan (City 2010). Consistent with the project design and project objectives, the intent of the Mixed-Use Corridor designation is to provide access to a mix of uses and services, including transportation options; and provide higher-density residential and commercial development. The goal of the MU-T designation is to facilitate a mix of residential, industrial, and commercial uses in areas transitioning from lower-density land uses. According to the Redwood City Zoning Ordinance, the project site is zoned as MUC-ECR (Mixed Use Corridor – El Camino Real) and MUT (Mixed-Use Transitional). The proposed project has been designed to be consistent with the Redwood City Zoning Code. In addition, per the Redwood City El Camino Real Corridor Plan, the proposed project would be consistent with the uses allowed, which include a mix of live/work, and other uses such as residential, office, retail, and light industrial, to be designed in a pedestrian-oriented manner. The project site is also within an activity node of the El Camino Real Corridor Plan, which calls for active ground floor uses to support adjacent neighborhoods. Because the proposed project would be consistent with the development assumptions for land uses provided in the General Plan land use designation of the site, including the El Camino Real Corridor Plan, the intensity of operational emissions has been accounted for in the air quality plan.

In addition, the proposed project would be consistent with the Bay Area's Transportation Plan/Sustainable Community Strategy (Plan Bay Area). The proposed project is consistent with the comprehensive strategy of the Plan Bay Area to reduce motor vehicle travel on a per-capita basis by improving the region's public transit network; and promoting bicycling, walking, and ridesharing. The proposed project would produce housing (while relocating and replacing existing housing or residents); redevelop an existing underused site

instead of developing on the region's undeveloped periphery; and locate jobs near housing and transit. As discussed in Section 3.5, Transportation, the proposed project would generate vehicle miles traveled (VMT) per service population lower than the San Mateo County averages. Therefore, operation of the proposed project would not conflict with or obstruct implementation of the 2017 Bay Area Clean Air Plan.

Significance without Mitigation: Less than significant.

AQ-2 The project could result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard.

Construction Emissions

Construction emissions are described as "short-term" or temporary; however, they have the potential to represent a significant impact with respect to regional and localized air quality. Construction of the proposed project would temporarily generate emissions of ROG, NO_x, PM₁₀, and PM_{2.5}. ROG and NO_x emissions are associated primarily with mobile equipment exhaust, including off-road construction equipment and on-road motor vehicles. Fugitive PM dust emissions are associated primarily with site preparation, and vary as a function of parameters such as soil silt content, soil moisture, wind speed, acreage of disturbance area, and VMT by construction vehicles on- and off-site. Earthmoving and material-handling operations would be the primary sources of fugitive PM dust emissions from project construction activities.

Fugitive Dust

Site preparation activities produce fugitive PM dust emissions (PM₁₀ and PM_{2.5}) from demolition and soil-disturbing activities, such as grading and excavation. Fugitive dust emissions are considered to be significant unless the project implements the BAAQMD's BMPs for fugitive dust control during construction. The grading phase would involve approximately 373,000 and 1,200 cubic yards of material export for Parcels A through E and F, respectively. Additional modeling methodology and details are provided in Appendix AQTR. The amount of dust generated during construction would be highly variable, and would be dependent on the amount of material being disturbed, the type of material, moisture content, and meteorological conditions on a given day.

Significance without Mitigation: Significant

Implementation of the BAAQMD BMPs would reduce fugitive dust emissions to less than significant.

Mitigation Measure AQ-2a: The construction contractor shall comply with the following BAAQMD BMPs for reducing construction emissions of uncontrolled fugitive dust (PM₁₀ and PM_{2.5}):

- (A) All exposed surfaces (e.g., parking areas, staging areas, soil piles, stockpiles, graded areas, and unpaved access roads) shall be watered twice daily, or as often as needed, treated with non-toxic soil stabilizers, or covered to control dust emissions. Watering should be sufficient to prevent airborne dust from leaving the site. Increased watering frequency may be necessary whenever wind speeds exceed 15 miles per hour. Reclaimed water shall be used whenever possible.
- (B) All haul trucks transporting soil, sand, or other loose material off site shall be covered, or required to maintain at least 2 feet of freeboard (i.e., the minimum required space between the top of the load and the top of the trailer).
- (C) All visible mud or dirt track-out onto adjacent public roads and paved access roads shall be removed using wet power (with reclaimed water, if possible) vacuum street sweepers at least once per day, or as often as needed. The use of dry power sweeping is prohibited.

- (D) Hydroseed or apply non-toxic soil stabilizers to inactive construction areas.
- (E) All vehicle speeds on unpaved roads shall be limited to 15 miles per hour.
- (F) Install sandbags or other erosion control measures to prevent silt runoff from public roadways.
- (G) Pave all roadways, driveways, and sidewalks as soon as possible, or apply water twice daily or as often as necessary to control dust. Building pads shall be laid as soon as possible after grading, unless seeding or soil binders are used.
- (H) Idling times shall be minimized either by shutting equipment off when not in use or by reducing the maximum idling time to 5 minutes (as required by California airborne toxics control measure Title 13, Section 2485 of the California Code of Regulations). Clear signage shall be provided for construction workers at all access points.
- (I) All construction equipment shall be maintained and properly tuned in accordance with manufacturer's specifications. All equipment shall be checked by a certified mechanic and determined to be running in proper condition prior to operation.
- (J) A publicly visible sign shall be posted with the telephone number and person to contact regarding dust complaints. This person shall respond and take corrective action within 48 hours. BAAQMD's phone number also shall be visible to ensure compliance with applicable regulations.

The City of Redwood City Building Inspection & Code Enforcement Division official or his/her designee shall verify compliance that these measures have been implemented during normal construction site inspections.

Significance with Mitigation: Less than significant. Implementation of Mitigation Measure AQ-2a would require implementation of the BAAQMD's BMPs to minimize fugitive dust emissions from project-related construction activities. Therefore, impacts related to fugitive dust would be less than significant.

Construction Exhaust Emissions

Construction activities would generate exhaust emissions of criteria air pollutants during the demolition, grading, building construction, paving, and architectural coating phases. Construction would span approximately 27 months for Parcels A through E and 14 months for Parcel F. It is anticipated that construction of Parcels A through E and Parcel F would overlap. The primary source of emissions during construction would be associated with mobile equipment exhaust, including off-road equipment and hauling trips during the grading phase. It is anticipated that construction would begin in 2020. The analysis assumed construction activities would involve a maximum of 350 workers per day, and would include approximately 25 truck trips per day during the building construction phases. Emissions associated with construction of Parcels A through E and F are shown in Table 3.2-6. Additional modeling methodology and details are provided in Appendix AQTR.

As shown in Table 3.2-6, emissions of NO_x associated with construction of Parcels A through E and F would exceed the average daily threshold of significance. Therefore, construction emissions could result in a cumulatively considerable net increase of any criteria pollutant for which the project region is in nonattainment under an applicable federal or state AAQS. Implementation of Mitigation Measure AQ-2b would reduce NO_x emissions to the greatest extent feasible.

Table 3.2-6 Unmitigated Construction-Related Annual and Average Daily Criteria Air Pollutant Emissions

Construction Year	ROG	NO _x	PM ₁₀ (Exhaust)	PM _{2.5} (Exhaust)
2020 Emissions (tons/year)	0.9	12.8	0.32	0.30
2021 Emissions (tons/year)	1.4	12.1	0.44	0.42
2022 Emissions (tons/year)	7.3	3.4	0.13	0.12
Total Emissions (tons)	9.6	28.3	0.89	0.84
Average Daily Emissions (lb/day) ¹	32.2	95.1	3.0	2.8
BAAQMD Thresholds ²	54	54	82	54
Exceeds Threshold?	No	Yes	No	No

Notes: Estimated by AECOM in 2019. See Appendix AQTR for detailed modeling assumptions, outputs, and results.

Totals may not add due to rounding.

¹ Average daily emission estimates are based on the total construction emissions divided by the total number of active construction days.

² BAAQMD 2017a

lb/day = pounds per day; ROG = reactive organic gases; NO_x = oxides of nitrogen; PM₁₀ = particulate matter less than 10 microns in diameter; PM_{2.5} = particulate matter less than 2.5 microns in diameter.

Significance without Mitigation: Significant.

Mitigation Measure AQ-2b: Construction contractors shall use equipment that meets the ARB's and/or EPA's Tier 4 Final emissions standards for off-road diesel-powered construction equipment with more than 50 horsepower for all construction activities, unless it can be demonstrated to the City of Redwood City Planning & Housing Division that such equipment is not available. Documentation shall consist of signed written statements from at least two construction equipment rental firms. Any emissions control device used by the contractor shall achieve emissions reductions that are no less than what could be achieved by Tier 4 Final emissions standard for a similarly sized engine, as defined by ARB or EPA regulations. For any substitute emissions control device employed, the contractor shall provide documentation that the associated emissions reductions are no less than what could be achieved by Tier 4 Final emissions standards for a similarly sized engine.

Prior to construction, the project engineer shall ensure that all construction (e.g., demolition and grading) plans clearly show the requirement for EPA Tier 4 Final emissions standards for construction equipment over 50 horsepower. During construction, the construction contractor shall maintain a list of all operating equipment in use on the construction site for verification by the City of Redwood City.

The construction equipment list shall state the makes, models, and numbers of construction equipment on site in addition to the engine tier rating and California ARB engine identification number for each piece of construction equipment.

As shown in Table 3.2-7, implementation of Mitigation Measure AQ-2b would reduce construction-related NO_x emissions to below the BAAQMD average daily threshold. Therefore, with implementation of proposed mitigation, project-related construction emissions would not result in a cumulatively considerable net increase of any criteria pollutant for which the project region is in nonattainment under an applicable federal or state AAQS.

Table 3.2-7 Mitigated Construction-Related Annual and Average Daily Criteria Air Pollutant Emissions

Construction Year	ROG	NO _x	PM ₁₀ (Exhaust)	PM _{2.5} (Exhaust)
2020 Emissions (tons/year)	0.4	7.3	0.04	0.04
2021 Emissions (tons/year)	0.8	4.7	0.07	0.07
2022 Emissions (tons/year)	7.1	1.3	0.02	0.02
Total Emissions (tons)	8.3	13.3	0.13	0.13
Average Daily Emissions (lb/day)¹	27.8	45.0	0.4	0.4
BAAQMD Thresholds ²	54	54	82	54
Exceeds Threshold?	No	No	No	No

Notes: Estimated by AECOM in 2019. See Appendix AQTR for detailed modeling assumptions, outputs, and results.

Totals may not add due to rounding.

¹ Average daily emission estimates are based on the total construction emissions divided by the total number of active construction days.

² Average daily emissions are based on the total construction emissions divided by the total number of active construction days. lb/day = pounds per day; ROG = reactive organic gases; NO_x = oxides of nitrogen; PM₁₀ = particulate matter less than 10 microns in diameter; PM_{2.5} = particulate matter less than 2.5 microns in diameter.

Significance with Mitigation: Less than significant. As shown above in Table 3.2-7, implementation of Mitigation Measure AQ-2b would reduce construction-related NO_x emissions to below the BAAQMD average daily threshold. Therefore, with implementation of proposed mitigation, project-related construction emissions would not result in a cumulatively considerable net increase of any criteria pollutant.

Operational Emissions

After construction, long-term emissions of criteria air pollutants would be generated from stationary, area, energy, and mobile sources during operation of the proposed project. Stationary sources would include emissions from operation of emergency generators and boilers. Area sources would include emissions from use of consumer products, periodic architectural coatings, and landscape equipment. Energy sources would include emissions from natural gas combustion for space and water heating. Mobile sources would involve vehicle trips associated with residential, recreational, and visitor activities (e.g., work, shopping, and other trips).

Project-generated vehicle trips would be the primary source of long-term criteria air pollutant emissions. The proposed project would generate a net total of 6,645 average daily trips for Parcels A through E and F. Stationary sources would include emissions from operation of eight emergency generators, fire water pumps, and two small boilers. Area and energy source emissions were based on CalEEMod defaults. Additional modeling details are provided in Appendix AQTR. As shown in Tables 3.2-8 and 3.2-9, the net increase in operational emissions generated by the proposed project would not exceed the BAAQMD daily or annual thresholds.

Therefore, operational emissions would not result in a cumulatively considerable net increase of any criteria pollutant for which the project region is in nonattainment under an applicable federal or state AAQS. Therefore, operational activities associated with the proposed project would be less than significant.

Significance without Mitigation: Less than significant.

Table 3.2-8 Annual Operational Criteria Air Pollutant Emissions

Category	ROG	NO _x	PM ₁₀	PM _{2.5}
Annual Project Emissions (tons/year)	7.09	7.24	6.20	1.81
Existing Annual Emissions (tons/year)	0.91	1.38	0.92	0.26
Net Project Annual Emissions (tons/year) ¹	6.18	5.86	5.28	1.54
BAAQMD Threshold (tons/year) ²	10	10	15	10
Exceeds Threshold?	No	No	No	No

Notes: Estimated by AECOM in 2019. See Appendix AQTR for detailed modeling assumptions, outputs, and results.

¹ Net project annual emissions calculated by subtracting the existing annual emissions from the uses that would be demolished from the project emissions.

² BAAQMD 2017a

ROG = reactive organic gases; NO_x = oxides of nitrogen; PM₁₀ = particulate matter less than 10 microns in diameter; PM_{2.5} = particulate matter less than 2.5 microns in diameter.

Table 3.2-9 Average Daily Operational Criteria Air Pollutant Emissions

Category/Source	ROG	NO _x	PM ₁₀	PM _{2.5}
Project Average Daily Emissions (lb/day)				
Area	29.04	0.36	0.13	0.13
Energy	0.46	4.12	0.32	0.32
Mobile	8.85	27.14	33.19	9.11
Stationary	0.51	8.06	0.34	0.34
Waste	0.00	0.00	0.00	0.00
Water	0.00	0.00	0.00	0.00
Total Average Daily Project Emissions (lb/day)¹	38.9	39.7	34.0	9.9
Existing Average Daily Emissions (lb/day)				
Area	2.37	0.02	<0.01	<0.01
Energy	0.08	0.69	0.05	0.05
Mobile	2.55	6.84	4.974	1.388
Waste	0.00	0.00	0.000	0.000
Water	0.00	0.00	0.000	0.000
Total Average Daily Project Emissions (lb/day)¹	5.0	7.5	5.03	1.5
Net Project Average Daily Emissions (lb/day)				
Area	26.67	0.34	0.12	0.12
Energy	0.39	3.43	0.27	0.27
Mobile	6.30	20.30	28.22	7.73
Stationary	0.51	8.06	0.34	0.34
Waste	0.00	0.00	0.00	0.00
Water	0.00	0.00	0.00	0.00
Total Net Project Emissions (lb/day)	33.9	32.1	28.9	8.5
BAAQMD Threshold (lb/day)³	54	54	82	54
Exceeds Threshold?	No	No	No	No

Notes: Estimated by AECOM in 2019. See Appendix AQTR for detailed modeling assumptions, outputs, and results.

¹ Average daily emission estimates are based on the annual operational emissions divided by 365 days.

² Net project emissions calculated by subtracting operational emissions from the existing uses that would be demolished from the project's operational emissions.

³ BAAQMD 2017a

lb/day = pounds per day; ROG = reactive organic gases; NO_x = oxides of nitrogen; PM₁₀ = particulate matter less than 10 microns in diameter; PM_{2.5} = particulate matter less than 2.5 microns in diameter.

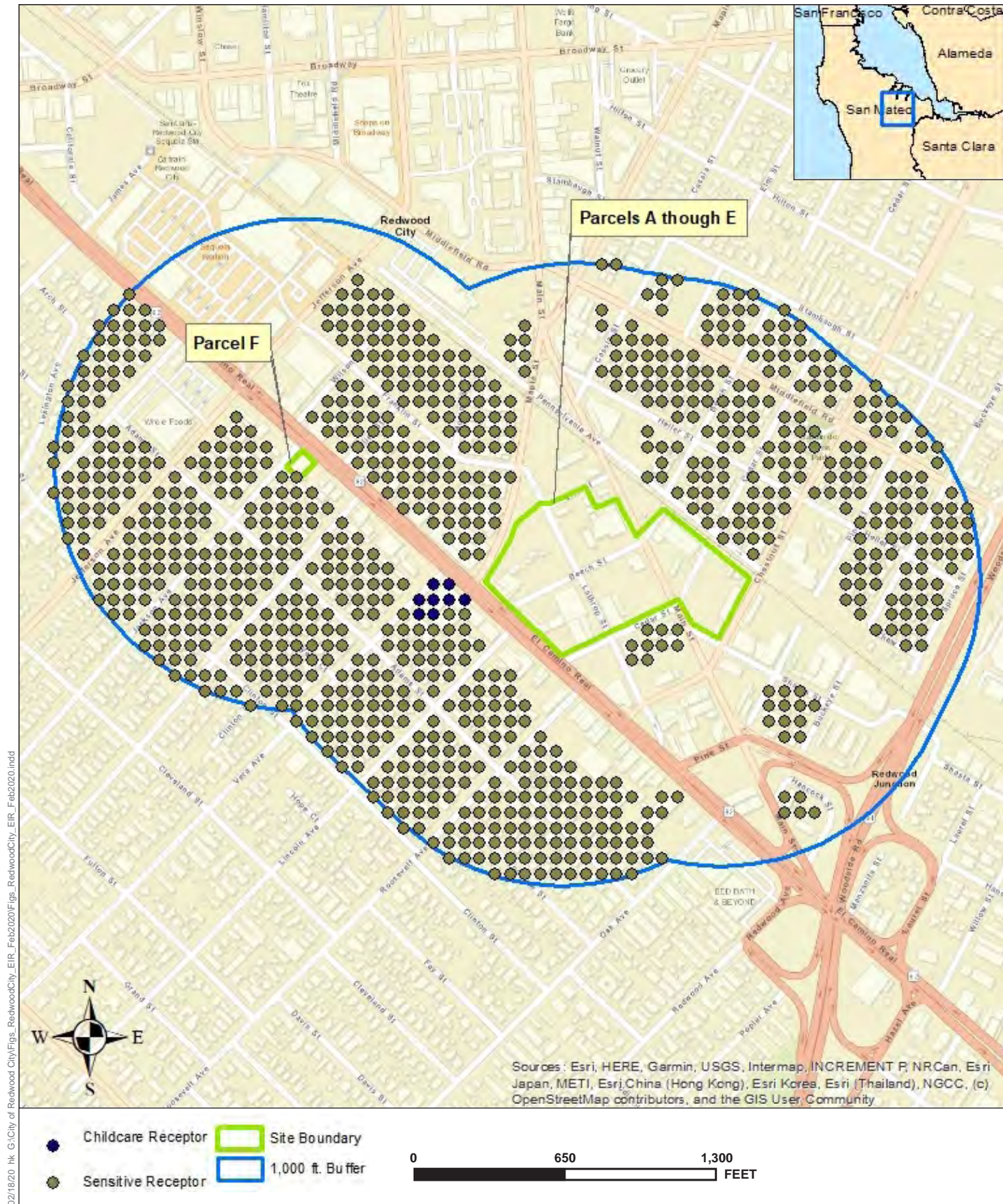
AQ-3 The project could expose sensitive receptors to substantial pollutant concentrations.

The project site is in an area with nearby sensitive receptors, such as residences and a childcare facility, as shown on Figure 3.2-1. In addition, the proposed project would develop residential units and a childcare facility that would be occupied by sensitive receptors, as shown on Figure 3.2-2. During construction of the proposed project, construction-related emissions of criteria pollutants and TACs could expose these sensitive receptors shown on Figure 3.2-1 to substantial pollutant concentrations. It is anticipated that the on-site residential units and childcare would not be occupied or used until after completion of the construction phase. After construction, operational emissions generated during day-to-day activities (i.e., new stationary sources and vehicle trips) could expose the on-site and nearby sensitive receptors to substantial pollutant concentrations.

Criteria Pollutants

As shown in Table 3.2-6, construction-related and operational activities would result in emissions of ROG, PM₁₀, and PM_{2.5} that would not exceed BAAQMD thresholds of significance. However, NO_x emissions during construction would exceed the BAAQMD threshold of significance. NO_x emissions would not exceed the BAAQMD thresholds during operations. The thresholds of significance were designed to identify those projects that would result in significant levels of air pollution and to assist the region in attaining the applicable state and national AAQS, which were established using health-based criteria to protect the public with a margin of safety from adverse health impacts due to exposure to air pollution. Therefore, projects that would not exceed the thresholds of significance would not impede attainment and maintenance of the standards, which can inform the project's impacts to regional air quality and health risks associated from criteria pollutants under CEQA.

The health effects of NO_x, which is a precursor to ozone, are discussed in the amicus brief filed by the South Coast Air Quality Management District (SCAQMD) in the *Sierra Club v. County of Fresno* (2014) 26 Cal.App.4th 704. The brief states that it “takes a large amount of additional precursor emissions to cause a modeled increase in ambient ozone levels” (SCAQMD 2015). In addition, the SCAQMD explained that it may be technically infeasible to accurately quantify ozone-related health impacts caused by NO_x or ROG emissions from relatively small projects, due to photochemistry and regional model limitations (SCAQMD 2015). Furthermore, the SCAQMD brief stated that a project emitting only 10 tons per year of NO_x or VOC/[ROG] (same order of magnitude as the unmitigated emissions generated during construction by the proposed project) is small enough that its regional impact on ambient ozone levels may not be detected in the regional air quality models used to determine ozone levels” (SCAQMD 2015). Therefore, in this case, it would not be feasible to directly correlate project emissions of NO_x with specific health impacts from ozone. The SCAQMD explains that this is in part because ozone formation is not linearly related to emissions; ozone impacts vary depending on the location of the emissions, the location of other precursor emissions, meteorology, and seasonal impacts (SCAQMD 2015). In addition, as stated above in Impact AQ-2, Mitigation Measure AQ-2b would reduce emissions of NO_x below the BAAQMD threshold of significance. Mitigation Measure AQ-2b requires implementation of Tier 4 Final engines, which reduce NO_x and PM emissions more than 90% compared to Tier 1, 2, and 3 engines (SCAQMD 2014). Because the thresholds were developed to assist the region in attaining the applicable state and national AAQS, which are established using health-based criteria, construction and operation of the proposed project would not expose sensitive receptors to substantial criteria pollutant concentrations.

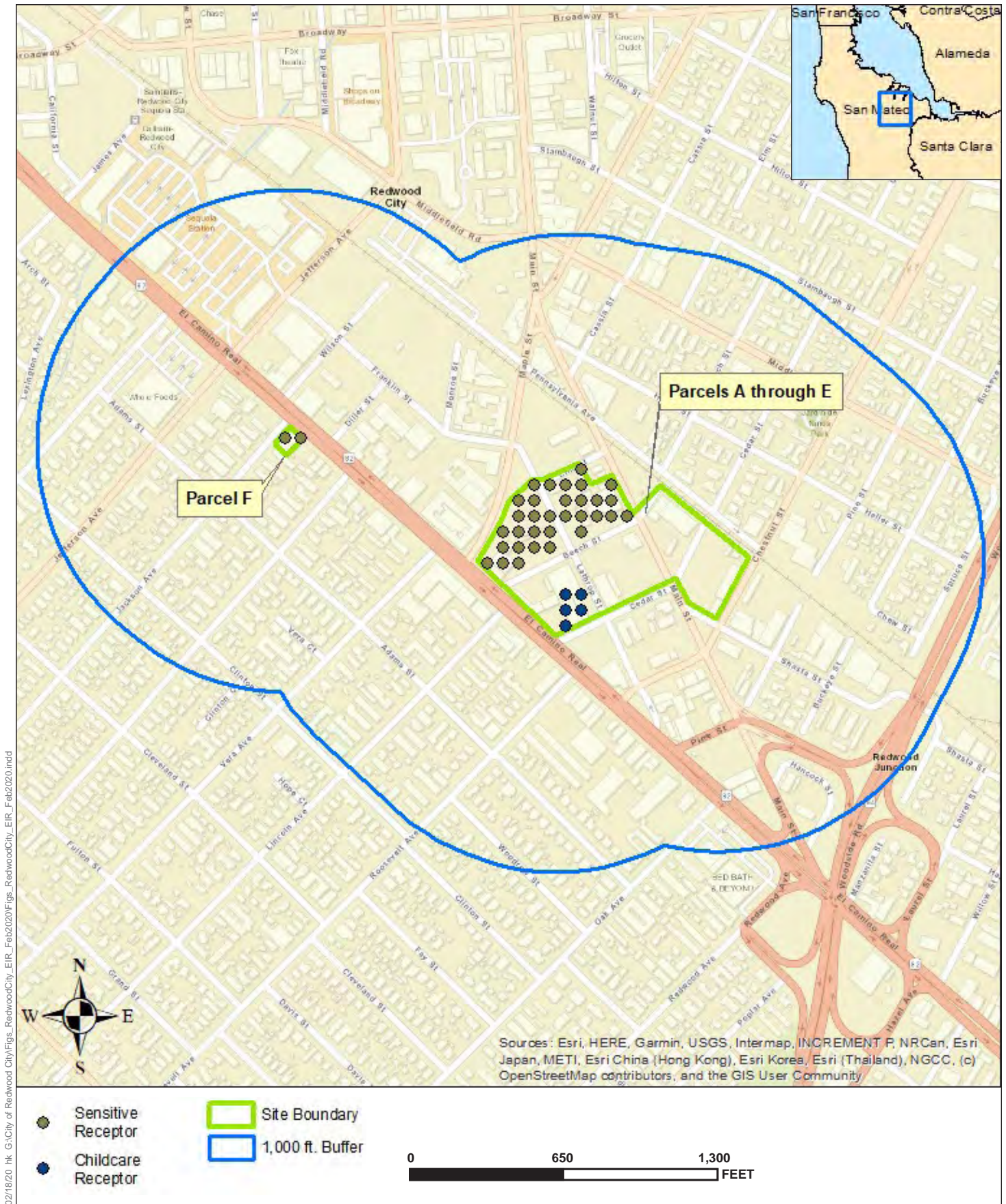


Source: AECOM 2020

SENSITIVE RECEPTORS – CONSTRUCTION PHASE

South Main Mixed-Use Development Project
City of Redwood City, California

FIGURE 3.2-1



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Source: AECOM 2020

SENSITIVE RECEPTORS – OPERATIONS PHASE

South Main Mixed-Use Development Project
City of Redwood City, California

FIGURE 3.2-2

3-2-27

Construction Community Risk and Hazards

The greatest potential for exposure during construction would be related to TAC emissions, including DPM, associated with heavy-duty equipment operations and on-road motor vehicles. Construction of the proposed project would occur in the vicinity of sensitive land uses (i.e., receptors). The nearest off-site sensitive receptors proximate to the project site include the immediately adjacent residential dwelling units and childcare center, as shown on Figure 3.2-1.

Consequently, an HRA of TACs, construction exhaust PM_{2.5}, and total organic gases was prepared for the proposed project, and is included in Appendix AQTR of this DEIR. Sources evaluated in the HRA include off-road construction equipment and heavy-duty diesel trucks along the truck route based on the approximate 30-month construction duration and off-road equipment list provided by the project applicant. This analysis uses the EPA's AERMOD air dispersion modeling program and the latest HRA guidance from the Office of Environmental Health Hazard Assessment to estimate excess lifetime cancer risks and PM_{2.5} annual concentrations within a 1,000-foot boundary of the project site. Tables 3.2-10 and 3.2-11 summarize the unmitigated construction-related maximum PM_{2.5} annual concentrations and excess cancer risk, respectively, on the off-site residential receptors for Parcels A through F.

Table 3.2-10 Unmitigated Construction-Related Maximum PM_{2.5} Concentrations on Off-Site Residential Receptors

Year	Parcels A-E Annual PM _{2.5} Concentration (µg/m ³) ¹	Parcel F Annual PM _{2.5} Concentration (µg/m ³) ²
2020	0.51	0.25
2021	0.80	0.59
2022	0.21	< 0.01
BAAQMD Threshold ³	0.3	0.3
Exceeds Threshold?	Yes⁴	Yes⁴

Notes: Estimated by AECOM in 2019. See Appendix AQTR for detailed modeling assumptions, outputs, and results.

¹ Receptor location: X (UTM) = 568,560.65, Y (UTM) = 4,148,382.33.

² Receptor location: X (UTM) = 568,100.65, Y (UTM) = 4,148,582.33.

³ BAAQMD 2017a

⁴ Pipeline Construction not included, because the threshold is already exceeded and mitigation is required.

µg/m³ = micrograms per cubic meter; PM_{2.5} = particulate matter less than 2.5 microns in diameter; UTM = Universal Transverse Mercator

Table 3.2-11 Unmitigated Construction-Related Maximum Excess Cancer Risk on Off-Site Residential Receptors

Year	Years of Age	Parcels A-E (in a million) ¹	Parcel F (in a million) ²
2020	Third trimester to 1	33.50	25.00
2021	1–2	41.80	54.70
2022	2–3	1.89	---
Total Excess Cancer Risk	3 years	77.19	79.70
BAAQMD Threshold ³	---	10	10
Exceeds Threshold?	---	Yes⁴	Yes⁴

Notes: Estimated by AECOM in 2019. See Appendix AQTR for detailed modeling assumptions, outputs, and results.

¹ Receptor location: X (UTM) = 569,560.65, Y (UTM) = 4,148,382.33.

² Receptor location: X (UTM) = 568,100.65, Y (UTM) = 4,148,582.33.

³ BAAQMD 2017a

⁴ Pipeline Construction not included, because the threshold is already exceeded and mitigation is required.

UTM = Universal Transverse Mercator

As shown in Tables 3.2-10 and 3.2-11, maximum annual PM_{2.5} concentrations and excess cancer risk would exceed the BAAQMD thresholds of significance. Therefore, construction-related emissions of TACs could expose sensitive receptors to substantial pollutant concentrations. Implementation of Mitigation Measure AQ-2b would reduce PM_{2.5} concentrations and excess cancer risks.

Significance without Mitigation: Significant.

As shown in Tables 3.2-12 and 3.2-13, implementation of Mitigation Measure AQ-2b would reduce construction-related maximum PM_{2.5} annual concentrations and excess cancer risk below the BAAQMD thresholds of significance. Implementation of Mitigation Measure AQ-2b would reduce the overall construction-related concentration of PM_{2.5} emissions generated during construction. Therefore, with implementation of proposed mitigation, project-related construction emissions would not expose sensitive receptors to substantial pollutant concentrations of TAC emissions.

Table 3.2-12 Mitigated Construction-Related Maximum PM_{2.5} Concentrations on Off-Site Residential Receptors

Year	Parcels A through E Annual PM _{2.5} Concentration (µg/m ³) ¹	Parcel F Annual PM _{2.5} Concentration (µg/m ³) ²
2020	0.04	0.02
2021	0.12	0.06
2022	0.04	<0.01
BAAQMD Threshold ³	0.3	0.3
Exceeds Threshold?	No	No

Notes: Estimated by AECOM in 2019. See Appendix AQTR for detailed modeling assumptions, outputs, and results.

¹ Receptor location: X (UTM) = 568,560.65, Y (UTM) = 4,148,382.33.

² Receptor location: X (UTM) = 568,100.65, Y (UTM) = 4,148,582.33.

³ BAAQMD 2017a

µg/m³ = micrograms per cubic meter; PM_{2.5} = particulate matter less than 2.5 microns in diameter; UTM = Universal Transverse Mercator

Table 3.2-13 Mitigated Construction-Related Maximum Excess Cancer Risk on Off-Site Residential Receptors

Year	Years of Age	Parcels A-E (in a million) ¹	Parcel F (in a million) ²
2020	Third trimester to 1	2.72	2.02
2021	1–2	6.06	5.76
2022	2–3	0.29	---
Total Excess Cancer Risk	3 years	9.07	7.78
BAAQMD Threshold ³	---	10	10
Exceeds Threshold?	---	No	No

Notes: Estimated by AECOM in 2019. See Appendix AQTR for detailed modeling assumptions, outputs, and results.

¹ Receptor location: X (UTM) = 569,560.65, Y (UTM) = 4,148,382.33.

² Receptor location: X (UTM) = 568,100.65, Y (UTM) = 4,148,582.33.

³ BAAQMD 2017a

UTM = Universal Transverse Mercator

Significance with Mitigation: Less than significant. Implementation of Mitigation Measure AQ-2b would reduce construction-related maximum PM_{2.5} annual concentrations and excess cancer risk below the BAAQMD thresholds of significance. Implementation of Mitigation Measure AQ-2b would reduce the overall construction-related concentration of PM_{2.5} emissions generated during construction. Therefore, with implementation of proposed mitigation, project-related construction emissions would not expose sensitive receptors to substantial pollutant concentrations of TAC emissions.

Operational Phase On-Site Community Risk and Hazards

After construction, operation of the proposed project would also result in TAC emissions from day-to-day activities (i.e., new stationary sources and vehicle trips). Because the proposed project involves residential uses, the nearest sensitive receptors during operations would be the future on-site project users. The proposed project also includes a childcare center; therefore, a 9-year child cancer risk exposure period was also assessed using a starting year of the third trimester of pregnancy. Figure 3.2-2 shows the on-site sensitive receptors.

As described in further detail in Appendix AQTR, the HRA included TAC emissions from project-generated, on-road traffic within 1,000 feet of the project site. The analysis used the EMFAC Gasoline Total Organic Gases Speciation to model TACs from non-diesel vehicles. The analysis used emission factors and methods prescribed by ARB and EPA (e.g., AP-42, Compilation of Air Pollutant Emission Factors) to estimate emissions from the stationary sources. Each emergency generator was assumed to meet a minimum of Tier 2 emission standards when they are installed in 2022, and to comply with BAAQMD Regulation 2, Rule 5, New Source Review for Toxic Air Contaminants. Each emergency generator was assumed to comply with BAAQMD testing limits of no more than 50 hours per year. In addition to the emergency generators, the HRA also included 2 small boilers in Parcel A and Parcel D (1 boiler in each) for the residential complexes to be built on those sites. The proposed size of each boiler is assumed to be 0.5 million British thermal units per hour (MMBtu/hr). The boilers were assumed to operate 8,760 hours per year.

Due to the proposed project's proximity to the Caltrain rail (approximately 100 feet away at the closest distance) and on-site childcare, the HRA also included TAC impacts from the Caltrain rail operations. The analysis incorporated Caltrain's recent efforts to electrify the Caltrain's commuter rail service and phase out diesel locomotives. As of November 2019, the first passenger service with electric trains would begin in 2022. The existing funding for the Caltrain Modernization Program (CalMod) would replace 75% of the Caltrain passenger fleet with electrified cars by 2023 (CalMod 2019). Additional funding would be needed to reach 100% electrification. Therefore, the analysis assumed that 75% of the passenger trains would be electric, and the remaining 25% would be diesel-fueled.

Tables 3.2-14 and 3.2-15 summarize the operational maximum PM_{2.5} annual concentrations and excess cancer risk, respectively, on the future on-site and off-site receptors for Parcels A through E and Parcel F.

As shown in Tables 3.2-14 and 3.2-15, the maximum annual PM_{2.5} concentrations and maximum excess cancer risk on the future on-site and off-site receptors would not exceed the BAAQMD thresholds, with the exception of one off-site receptor for excess cancer risk. Implementation of Mitigation Measure AQ-3, as described below, would reduce excess cancer risk for the off-site receptor to less than significant.

Significance without Mitigation: Significant.

Table 3.2-14 Unmitigated Operational Maximum PM_{2.5} Concentrations on On-Site and Off-Site Receptors

Scenario	Parcels A through E ($\mu\text{g}/\text{m}^3$) ¹	Parcel F ($\mu\text{g}/\text{m}^3$) ²
Operations – On-site Receptors	0.25	0.05
Operations – Off-Site Receptors	0.22	0.22
BAAQMD Threshold	0.3	0.3
Exceed Threshold?	No	No

Notes: Estimated by AECOM in 2019. See Appendix AQTR for detailed modeling assumptions, outputs, and results.

¹ Receptor location: X (UTM) = 568,360.65, Y (UTM) = 4,148,442.33.

² Receptor location: X (UTM) = 568,120.65, Y (UTM) = 4,148,602.33.

³ Receptor location: X (UTM) = 568,540.65, Y (UTM) = 4,148,342.33.

$\mu\text{g}/\text{m}^3$ = micrograms per cubic meter; PM_{2.5} = particulate matter less than 2.5 microns in diameter; UTM = Universal Transverse Mercator

Table 3.2-15 Unmitigated Operational Maximum Excess Cancer Risk on On-Site and Off-Site Receptors

Scenario	Years of Age	Parcels A through E (in a million)	Parcel F (in a million) ³
On-Site Receptors			
Operations – Residential	Third trimester – 30 (30 years)	5.55 ¹	1.21
Operations – Childcare	Third trimester – 9 (9 Years)	7.90 ²	---
BAAQMD Threshold	---	10	10
Exceeds Threshold?	---	No	No
Off-Site Receptors			
Operations – Residential ⁴	Third trimester – 30 (30 years)	11.30	
BAAQMD Threshold	---	10	
Exceeds Threshold?	---	Yes	
Operations – Childcare ⁵	Third trimester – 9 (9 Years)	1.82	
BAAQMD Threshold	---	10	
Exceeds Threshold?	---	No	

Notes: Estimated by AECOM in 2019. See Appendix AQTR for detailed modeling assumptions, outputs, and results.

¹ Receptor location: X (UTM) = 568,460.65, Y (UTM) = 4,148,542.33.

² Receptor location: X (UTM) = 568,460.65, Y (UTM) = 4,148,402.33.

³ Receptor location: X (UTM) = 568,120.65, Y (UTM) = 4,148,602.33.

⁴ Receptor location: X (UTM) = 568,600.65, Y (UTM) = 4,148,382.33.

⁵ Receptor location: X (UTM) = 568,320.65, Y (UTM) = 4,148,622.33.

UTM = Universal Transverse Mercator

Mitigation Measure AQ-3: The project applicant shall ensure one of the following two requirements will be fulfilled as the emergency generators are installed or permitted:

- (a) The ground-level generator adjacent to building E (south) will meet the EPA's Tier 4 Final emissions standards; or
- (b) The four emergency generators at building E will be permitted to operate up to 26 hours per year for maintenance and testing, which is below the BAAQMD requirement of 50 hours per year.

Table 3.2-16 summarizes the excess cancer risk under the two mitigation scenarios (Mitigation Measure AQ-3[a] or AQ-3[b]). Under both scenarios, project operational emissions would not exceed the applicable BAAQMD threshold of significance. Therefore, project operational emissions would not expose sensitive receptors (on-site and off-site) to substantial pollutant concentrations of TAC emissions with implementation of Mitigation Measure AQ-3[a] or AQ-3[b].

Table 3.2-16 Mitigated Operational Maximum Excess Cancer Risk on On-Site and Off-Site Receptors

Scenario	Years of Age	Parcels A-E (in a million)	Parcel F (in a million) ³
On-Site Receptors			
Mitigated Scenario AQ-3(a)			
Operations – Residential	Third trimester – 30 (30 years)	5.45 ¹	1.19
Operations – Childcare	Third trimester – 9 (9 Years)	7.85 ²	---
BAAQMD Threshold	---	10	10
Exceeds Threshold?	---	No	No
Mitigated Scenario AQ-3(b)			
Operations – Residential	Third trimester – 30 (30 years)	5.32 ¹	1.14
Operations – Childcare	Third trimester – 9 (9 Years)	7.66 ²	---
BAAQMD Threshold	---	10	10
Exceeds Threshold?	---	No	No
Off-Site Receptors			
Mitigated Scenario AQ-3(a)			
Operations ⁴	Third trimester – 30 (30 years)	9.76	
Operations – Childcare ⁵	Third trimester – 9 (9 Years)	1.80	
BAAQMD Threshold	---	10	
Exceeds Threshold?	---	No	
Mitigated Scenario AQ-3(b)			
Operations ⁴	Third trimester – 30 (30 years)	6.72	
Operations – Childcare ⁵	Third trimester – 9 (9 Years)	1.72	
BAAQMD Threshold	---	10	
Exceeds Threshold?	---	No	

Notes: Estimated by AECOM in 2019. See Appendix AQTR for detailed modeling assumptions, outputs, and results.

¹ Receptor location: X (UTM) = 568,460.65, Y (UTM) = 4,148,542.33.

² Receptor location: X (UTM) = 568,460.65, Y (UTM) = 4,148,402.33.

³ Receptor location: X (UTM) = 568,120.65, Y (UTM) = 4,148,602.33.

⁴ Receptor location: X (UTM) = 568,600.65, Y (UTM) = 4,148,382.33.

⁵ Receptor location: X (UTM) = 568,320.65, Y (UTM) = 4,148,622.33.

UTM = Universal Transverse Mercator

Significance with Mitigation: Less than significant.

CO Hotspots

The primary mobile-source pollutant of localized concern is CO. Local mobile-source CO emissions near roadway intersections are a direct function of traffic volume, speed, and delay. Transport of CO is limited, because it disperses rapidly with distance from the source under normal meteorological conditions. However, under specific meteorological conditions, CO concentrations near roadways and/or intersections may reach unhealthy levels related to local sensitive land uses such as residential units, hospitals, schools, and childcare facilities.

CO concentration is a direct function of motor vehicle activity, particularly during peak commute hours, and meteorological conditions. Under specific meteorological conditions, CO concentrations may reach unhealthy levels with respect to local sensitive land uses, such as residential areas, schools, preschools, playgrounds, and hospitals. As discussed in Section 3.2.4.2, the BAAQMD has developed screening criteria with a conservative indication of whether the implementation of the proposed project would result in CO emissions that exceed the significance criteria for CO hotspots. As discussed in additional detail in Impact AQ-1, the proposed project is consistent with the comprehensive strategy of the Plan Bay Area to reduce motor vehicle travel on a per-capita basis by improving the region's public transit network; and promoting bicycling, walking, and ridesharing. The proposed project would produce housing (while relocating and replacing existing housing or residents); redevelop an existing underused site in an urban footprint (instead of developing on the region's undeveloped periphery); and locate jobs near housing and transit. Furthermore, a project would have to increase traffic volumes at a single intersection to more than 44,000 vehicles per hour—or 24,000 vehicles per hour where vertical and/or horizontal mixing is substantially limited (e.g., locations such as a tunnel, parking garage, bridge underpass, natural or urban street canyon, or below-grade roadway where air flow and circulation is confined)—to generate a significant CO impact (BAAQMD 2017a). The proposed project is anticipated to generate a net total of approximately 712 daily peak-hour trips (i.e., maximum of 712 vehicles per hour), as provided in Section 3.5, Transportation. Based on the maximum daily trips documented in the Redwood City General Plan of approximately 19,000 vehicles per hour along U.S. 101 in the project vicinity (City 2010), the proposed project would have no potential to increase traffic volumes to more than the BAAQMD's screening criteria of 44,000 vehicles per hour, or 24,000 vehicles per hour where vertical and/or horizontal mixing is substantially limited. Therefore, the proposed project would not have the potential to substantially increase CO hotspots at intersections in the project vicinity, or expose sensitive receptors to substantial CO concentrations.

Significance without Mitigation: Less than significant.

AQ-4	The project would not result in other emissions (such as those leading to odors) adversely affecting a substantial number of people.
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The occurrence and severity of odor impacts depend on numerous factors, including the nature, frequency, and intensity of the source; wind speed and direction; and the sensitivity of the receptors. Although offensive odors rarely cause any physical harm, they can be very unpleasant, leading to considerable distress among the public, and causing citizens to submit complaints to local governments and regulatory agencies. Typical facilities that generate odors include wastewater treatment facilities, sanitary landfills, composting facilities, petroleum refineries, chemical manufacturing plants, and food processing facilities.

During project-related construction activities on the project site, construction equipment exhaust and application of asphalt and architectural coatings would temporarily generate odors. The project would use typical construction techniques, and the odors would be typical of most construction sites and temporary in nature. Additionally, odors would be confined to the immediate vicinity of the construction equipment.

The proposed project would develop residential, commercial office, and retail uses. Construction and operation of the proposed residential, retail, and office land uses would not generate substantial odors

that would affect a substantial number of people. During operation, retail uses such as restaurants and nearby residences could generate odors from cooking. Odors from cooking are typically not substantial enough to be considered nuisance odors that would affect a substantial number of people. Furthermore, nuisance odors are regulated under the BAAQMD's Regulation 7, Odorous Substances, which requires abatement of any nuisance generating an odor complaint. Regulation 7 places general limitations on odorous substances, and specific emission limitations on certain odorous compounds. Therefore, the proposed project would not result in other emissions (such as those leading to odors) adversely affecting a substantial number of people.

Significance without Mitigation: Less than significant.

3.2.6 Cumulative Impacts

AQ-5 The project, in combination with past, present, and reasonably foreseeable projects, could result in cumulatively considerable air quality impacts.

This section describes the potential cumulative air quality impacts resulting from implementation of the proposed project in conjunction with past, present, and reasonably foreseeable future projects. The geographic scope for the analysis of cumulative air quality impacts is considered to be the SFBAAB. It is appropriate to consider the entire air basin, because air emissions can travel substantial distances and are not confined by jurisdictional boundaries; rather, they are influenced by large-scale climatic and topographical features. Although some air quality emissions can be localized, such as a CO hot spot or odor, the overall consideration of cumulative air quality is typically more regional. By its very nature, air pollution is largely a cumulative impact.

Cumulative projects in the vicinity of the proposed project and throughout the air basin would also generate construction and operational air emissions that could contribute to air quality impacts. Generally, projects that are consistent with the applicable planning documents used to formulate the Clean Air Plan and SIP would not produce emissions beyond what is forecast, and would not hinder the ability to meet air quality standards.

The cumulative analysis focuses on whether a specific project would result in a cumulatively considerable increase in emissions. The nonattainment status of regional pollutants is a result of past and present development in the SFBAAB, and this regional impact is cumulative rather than attributable to any one source. A project's emissions may be individually limited, but cumulatively considerable when taken in combination with past, present, and future development projects. The thresholds of significance are relevant to whether a project's individual emissions would result in a cumulatively considerable incremental contribution to the existing cumulative air quality conditions. If a project's emissions would be less than those threshold levels, the project would not be expected to result in a considerable incremental contribution to the significant cumulative impact.

Construction-related emissions of NO_x would exceed the threshold of significance and fugitive dust emissions of PM₁₀ and PM_{2.5} generated during construction activities could result in a considerable incremental contribution to the significant cumulative impact. However, with implementation of Mitigation Measures AQ-2a and AQ-2b, these emissions would be reduced below the thresholds of significance. These thresholds are designed to identify those projects that would result in significant levels of air pollution, and to assist the region in attaining the applicable California and national AAQS. As mentioned in the BAAQMD CEQA Guidelines, the thresholds represent levels above which a project's individual emissions would result in a cumulatively considerable contribution (i.e., significant) to the SFBAAB's existing air quality conditions (BAAQMD 2017a). Therefore, projects that would not exceed the thresholds of significance would not contribute a considerable amount of criteria air pollutant emissions to the region's emissions profile, and would not impede attainment and maintenance of AAQS.

Consistency with Applicable Air Quality Plan

As discussed in Impact AQ-1, construction of the proposed project could result in NO_x emissions (a precursor to the formation of ozone) that exceed the thresholds and generate fugitive dust emissions. Because the Clean Air Plan provides a regional strategy to attain California and national AAQS by reducing ozone and PM, construction of the proposed project could conflict with the applicable air quality plan.

Significance without Mitigation: Significant

Implementation of proposed Mitigation Measures AQ-2a and AQ-2b, would reduce emissions of criteria pollutants during project construction. Mitigation Measures AQ-2a and AQ-2b would reduce ROG, NO_x, PM₁₀, and PM_{2.5} emissions from off-road equipment and construction activities that generate fugitive dust. With implementation of Mitigation Measures AQ-2a and AQ-2b, construction-related emissions would not exceed the applicable thresholds of significance.

Significance with Mitigation: Less than significant. Implementation of Mitigation Measure AQ-2a would reduce fugitive dust emissions and NO_x emissions below the BAAQMD's thresholds of significance. Therefore, with implementation of proposed mitigation, project-related construction impacts would not conflict with the BAAQMD Clean Air Plan, and would be less than significant.

As discussed in Impact AQ-1, the proposed project would be consistent with the Redwood City General Plan, El Camino Real Corridor Plan, and Zoning Ordinance. In addition, the proposed project also supports the goals and includes applicable control measures from the Clean Air Plan and Plan Bay Area Transportation Plan/Sustainable Communities Strategy by integrating land use, housing, and transportation planning. Furthermore, the proposed project would result in lower VMT per service population than the San Mateo County averages. Therefore, operation of the proposed project would not result in cumulatively considerable contribution to a cumulative impact.

Significance without Mitigation: Less than significant.

Compliance with Air Quality Standards

As discussed in Impact AQ-2, construction of the proposed project could result in NO_x emissions that exceed the thresholds and generate fugitive dust emissions. Because the SFBAAB region does not attain the California PM₁₀ AAQS, and California and federal ozone and PM_{2.5} AAQS currently, and the proposed project would exceed the thresholds of significance for construction-related NO_x (a precursor to the formation of ozone) emissions and fugitive dust PM₁₀ and PM_{2.5} emissions, the proposed project could result in a considerable contribution to cumulative regional air quality impacts.

Significance without Mitigation: Significant

As discussed above, implementation of Mitigation Measures AQ-2a and AQ-2b would reduce the proposed project's contribution to this cumulatively significant impact to a less-than-significant level. Because construction-related criteria pollutant emissions would not exceed the recommended thresholds with these mitigation measures, implementation of the proposed project would not result in a cumulatively considerable net increase of any criteria pollutant, and would not impede attainment and maintenance of AAQS in the region. Therefore, the proposed project would not result in a considerable contribution to a cumulative impact.

Significance with Mitigation: Less than significant. As discussed in Impact AQ-2, the net increase in operational emissions generated by the proposed project would not exceed the BAAQMD daily or annual thresholds for any pollutant for which the project region is non-attainment under an applicable federal or California AAQS. Therefore, operational activities associated with the proposed project would not result in a considerable contribution to a cumulative impact.

Significance without Mitigation: Less than significant.

Expose Sensitive Receptors to Substantial Pollutant Concentrations

CO Hotspots

As discussed in Impact AQ-3, future traffic conditions under the proposed project would not result in or contribute to any exceedances of the 1-hour or 8-hour CO standards. Currently, CO concentrations in the SFBAAB have realized a significant decrease over the years, and the SFBAAB is currently in attainment for CO (BAAQMD 2017a). Therefore, no cumulative impact exists, and no cumulative impact would result from project implementation.

Criteria Pollutants

As discussed in Impact AQ-3, construction-related and operational activities would result in emissions of ROG, PM₁₀, and PM_{2.5}, that would not exceed BAAQMD thresholds of significance. However, NO_x emissions during construction would exceed the BAAQMD threshold of significance. NO_x emissions would not exceed the BAAQMD thresholds during operations. The thresholds of significance were designed to identify those projects that would result in significant levels of air pollution, and to assist the region in attaining the applicable state and national AAQS, which were established using health-based criteria to protect the public with a margin of safety from adverse health impacts due to exposure to air pollution (BAAQMD 2017a). Therefore, projects that would not exceed the thresholds of significance would not impede attainment and maintenance of the standards, which can inform the project's impacts to regional air quality and health risks associated from criteria pollutants under CEQA.

As cited in the amicus brief filed by the SCAQMD in the *Sierra Club v. County of Fresno* (2014) 26 Cal.App.4th 704, it "takes a large amount of additional precursor emissions to cause a modeled increase in ambient ozone levels" (SCAQMD 2015). In addition, the SCAQMD explained that it may be technically infeasible to accurately quantify ozone-related health impacts caused by NO_x or ROG emissions from relatively small projects, due to photochemistry and regional model limitations (SCAQMD 2015). Furthermore, the SCAQMD brief stated that a project emitting only 10 tons per year of NO_x or VOC/[ROG] (same order of magnitude as the unmitigated emissions generated during construction by the proposed project) is small enough that its regional impact on ambient ozone levels may not be detected in the regional air quality models used to determine ozone levels" (SCAQMD 2015). Therefore, in this case, it would not be feasible to directly correlate proposed project emissions of NO_x with specific health impacts from ozone. In addition, Mitigation Measure AQ-2b, would reduce emissions of NO_x below the BAAQMD threshold of significance. Therefore, construction and operation of the proposed project would not result in a cumulatively considerable contribution to the cumulative impact.

Toxic Air Contaminants

The HRA (provided in Appendix AQTR) also considered the cumulative contribution of existing, baseline localized health risks to sensitive receptors from sources surrounding the project site, in addition to the sources associated with the proposed project, including mobile and stationary sources. The cumulative health risk analysis considers existing conditions using BAAQMD datasets to represent existing health risk conditions for both cancer risk and annual PM_{2.5}, concurrent with nearby construction projects within 1,000 feet of the proposed project, the Caltrain rail emissions from passenger and freight sources, and operation of the proposed project. Additional details are provided in Appendix AQTR.

Tables 3.2-17 and 3.2-18 summarize the cumulative maximum PM_{2.5} annual concentrations and cumulative maximum excess cancer risk, respectively, on the future on-site and off-site receptors for Parcels A through E and Parcel F. Table 3.2-18 shows the mitigated results for each mitigation option (AQ-3[a] or AQ-3[b]) under Mitigation Measure AQ-3.

Table 3.2-17 Cumulative Plus Project Conditions: Maximum Annual Average PM_{2.5} Concentration

Cumulative Operations Scenario	Annual Average PM _{2.5} Concentration (µg/m ³)	
	Parcels A through E	Parcel F
Existing Conditions (BAAQMD [2014]) ¹	0.48	0.38
Operations ²	0.25	0.05
Existing Nearby Stationary Sources ³	0.002	0.005
Cumulative Operations PM _{2.5} concentration	0.73	0.44
BAAQMD Combined Source Threshold	0.8	0.8
Exceeds Threshold?	No	No

Notes: Estimated by AECOM in 2019. The maximum for each source does not occur in the location on the project site. Therefore, the total excess cancer risk computed is a conservative worst-case assessment.

¹ BAAQMD health risk assessment for existing conditions plus nearby existing sources.

² Caltrain rail way sources have conservatively been included as part of the project operational scenario.

³ See Appendix AQTR for detailed modeling assumptions, outputs, and results.

µg/m³ = micrograms per cubic meter; PM_{2.5} = particulate matter with aerodynamic diameter less than 2.5 microns

Table 3.2-18 Cumulative Plus Project Conditions: Maximum Excess Cancer Risk

Cumulative Operations Scenario	Years of Age	Excess Cancer Risk (in a million)	
		Parcels A through E	Parcel F
Mitigated Scenario AQ-3(a)			
Existing Conditions (BAAQMD [2014]) ¹	–	16.06	16.79
Operations	Third Trimester – 30 (30 years)	5.45	1.19
Existing Nearby Stationary Sources ²	–	1.10	3.55
Caltrain Rail Sources	30	8.62	1.85
Total Excess Cancer Risk	30	31.23	23.38
BAAQMD Combined Source Threshold ³	---	100	100
Exceeds Threshold?	---	No	No
Mitigated Scenario AQ-3(b)			
Existing Conditions (BAAQMD [2014]) ¹	–	16.06	16.79
Operations	Third Trimester – 30 (30 years)	5.32	1.14
Existing Nearby Stationary Sources ²	–	1.10	3.55
Caltrain Rail Sources	30	8.62	1.85
Total Excess Cancer Risk	30	31.10	23.33
BAAQMD Combined Source Threshold ³	---	100	100
Exceeds Threshold?	---	No	No

Notes: Estimated by AECOM in 2019. The maximum for each source does not occur in the same location on the project site. Therefore, the total excess cancer risk computed is a conservative worst-case assessment.

¹ BAAQMD health risk assessment for existing conditions plus nearby existing sources.

² See Appendix AQTR for detailed modeling assumptions, outputs, and results.

³ BAAQMD 2017a

As shown in Tables 3.2-17 and 3.2-18, when the maximum PM_{2.5} concentrations and excess cancer risk impacts of the proposed project are added to the cumulative conditions of the project site, respectively, the proposed project would not exceed the BAAQMD cumulative thresholds of significance. In addition, the maximum concentration and excess cancer risk level of each source and category do not occur in the same locations; therefore, the total cumulative impact shown above is a conservative assessment. Therefore, with implementation of proposed Mitigation Measure AQ-3, the proposed project would not result in a cumulatively considerable contribution to the cumulative impact.

Significance with Mitigation: Less than Significant.

3.2.7 References

ARB. See California Air Resources Board.

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3.3 Cultural Resources

This chapter describes the regulatory framework and existing conditions on the project site related to cultural resources for both the built environment and archeology, and the potential project impacts on these cultural resources.

3.3.1 Summary

Table 3.3-1 provides a summary of the impact discussion in Sections 3.3.5 and 3.3.6.

Table 3.3-1 Summary of Impact Findings – Cultural Resources

Environmental Issues	Significant and Unavoidable	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:				
CR-1: Cause a substantial adverse change in the significance of a historical resource pursuant to Section 15064.5?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
CR-2: Cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
CR-3: Disturb any human remains, including those interred outside of formal cemeteries?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
CR-4: Combined with cumulative development, including past, present, and reasonably foreseeable future development, could result in a significant adverse cumulative cultural resources impact?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

As indicated in Table 3.3-1, the impact of the proposed project on historical resources, including cumulative effects, would be significant and unavoidable. Impacts on archaeological resources would be less than significant with mitigation. Threshold CR-3 was discussed in the Initial Study (Appendix IS) and was found to be less than significant as it relates to Parcels A through E and compliance with the requirements of California Health and Safety Code Section 7050.5(b). Therefore, it is not discussed further in this DEIR section.

Specific to Parcel F, the Consistency Analysis in Appendix CNA determined that the proposed development is consistent with the Downtown Precise Plan (DTPP), and that the analysis and conclusions from the DTPP Program Environmental Impact Report (EIR) remain valid. However, as specified in Appendix CNA, development at Parcel F would be required to implement Mitigation Measure 7-1 from the DTPP EIR to address impacts resulting from inadvertent discovery of buried archaeological resources. The full text of this mitigation measures is included in Appendix CNA as well as the Executive Summary chapter of this EIR.

3.3.2 Glossary

- **Archaeological Resource:** Material remains of past human life or activities. As defined by Public Resources Code Section 21083.2(g), a “unique archaeological resource” is 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 contains information needed to answer important scientific research questions, is the oldest of its type or the best available example of its type, or directly associated with a scientifically recognized prehistoric event or person.

- **BE:** Built Environment
- **CEQA:** California Environmental Quality Act
- **CFR:** Code of Federal Regulations
- **CRHR:** California Register of Historical Resources
- **CRMP:** Cultural Resources Management Plan
- **DTPP:** Downtown Precise Plan
- **EIR:** environmental impact report
- **HABS:** Historic American Building Survey
- **HAER:** Historic American Engineering Record
- **Historic-era:** 45 years and older for the purposes of CEQA
- **Historical Resource:** A resource listed in, or determined to be eligible by the State Historical Resources Commission, for listing in the California Register of Historical Resources (CRHR); a resource included in a local register of historical resources or identified as significant in a historical resources survey; or any object, building, structure, site area, record, or manuscript that a lead agency determines to be historically significant or significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California.
- **NAHC:** Native American Heritage Commission
- **NHPA:** National Historic Preservation Act
- **NPS:** National Parks Service
- **NRHP:** National Register of Historic Places
- **NWIC:** Northwest Information Center
- **OHP:** Office of Historic Preservation
- **ppi:** pixels per inch
- **PRC:** Public Resources Code
- **SHPO:** State Historic Preservation Officer

3.3.3 Environmental Setting

3.3.3.1 Regulatory Framework

This section summarizes existing federal, state, and local policies and regulations that apply to cultural resources.

Federal Regulations

National Historic Preservation Act

The National Historic Preservation Act (NHPA) of 1966 established the National Register of Historic Places (NRHP) as “an authoritative guide to be used by federal, state, and local governments, private groups and citizens to identify the Nation’s historic resources and to indicate what properties should be considered for protection from destruction or impairment” (36 Code of Federal Regulations [CFR] Section 60.2). The NRHP recognizes both historic-era and prehistoric archaeological properties that are significant at the national, state, and local levels.

To be eligible for listing in the NRHP, a resource must be significant in American history, architecture, archaeology, engineering, or culture. Buildings, structures, objects, sites or districts of potential significance must meet one or more of the following four established criteria:

- 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 represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or
- D. Have yielded, or may be likely to yield, information important in prehistory or history. Unless the property possesses exceptional significance, it must be at least 50 years old to be eligible for NRHP listing.

In addition to meeting the criteria of significance, a property must have integrity. Integrity is defined as the ability of a property to convey its significance. The NRHP recognizes seven qualities that, in various combinations, define integrity. To retain historic integrity, a property must possess several, and usually most, of these seven aspects. Therefore, the retention of the specific aspects of integrity is paramount for a property to convey its significance. The seven factors that define integrity are location, design, setting, materials, workmanship, feeling, and association.

The State of California implements the NHPA of 1966, as amended, through its statewide comprehensive cultural resources surveys and preservation programs. The Office of Historic Preservation (OHP), within the California Department of Parks and Recreation, implements the policies of the NHPA on a statewide level. OHP also maintains the California Historical Resources Inventory. The State Historic Preservation Officer (SHPO) is an appointed official who implements historic preservation programs in the state.

State Regulations

California Register of Historical Resources

Public Resources Code (PRC) Section 5024.1 establishes the CRHR, which is a list of all California properties considered to be significant historical resources. The CRHR also includes all properties listed or determined eligible for listing in the NRHP, including properties evaluated under Section 106 of the NHPA. The criteria for listing in the CRHR are similar to those of the NRHP. A historical resource may be eligible for inclusion in the CRHR if it meets any of the following conditions.

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 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.

Aside from meeting a CRHR criterion, a potential historical resource must also retain its historic integrity.

California Environmental Quality Act

The California Environmental Quality Act (CEQA), as codified in PRC Sections 21000 et seq., is the principal statute governing the environmental review of projects in the state. CEQA requires lead agencies to determine if a project would have a significant effect on historical resources, archaeological resources, human remains, and tribal cultural resources. CEQA states that if implementation of a project would result in significant effects on historical resources, then alternative plans or mitigation measures must be considered; however, only significant historical resources need to be addressed (14 California Code of Regulations [CCR] § 15064.5, 15126.4). Therefore, before impacts and mitigation measures can be identified, the significance of historical resources must be determined.

According to CEQA, a project that may cause a substantial adverse change in the significance of a historical resource is a project that may have a significant impact on the environment (14 CCR § 15064.5(b)). Under CEQA, a substantial adverse change in the significance of a resource means the physical demolition, destruction, relocation, or alteration of the resource or its immediate surroundings such that the significance of the historical resource would be materially impaired. Actions that would materially impair the significance of a historical resource are any actions that would demolish or adversely alter the physical characteristics that convey the property's historical significance and qualify it for inclusion in the CRHR or in a local register or survey that meet the requirements of PRC Sections 5020.1(k) and 5024.1(g).

Historical Resources

"Historical resource" is a term with a defined statutory meaning (PRC Section 21084.1). The determination of significant impacts on historical and archaeological resources is described in Sections 15064.5(a), 15064.5(b), and 15064.5(c) of the State CEQA Guidelines. Section 15064.5(a) states that historical resources include the following:

1. A resource listed in, or determined to be eligible by the State Historical Resources Commission, for listing in the CRHR (PRC Section 5024.1).

2. A resource included in a local register of historical resources, as defined in Section 5020.1(k) of the PRC or identified as significant in a historical resource survey meeting the requirements of Section 5024.1(g) of the PRC, will be presumed to be historically or culturally significant. Public agencies must treat any such resource as significant unless the preponderance of evidence demonstrates that it is not historically or culturally significant.
3. Any object, building, structure, site, area, place, record, or manuscript which a lead agency determines to be historically significant or significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California may be considered to be a historical resource, provided the lead agency's determination is supported by substantial evidence in light of the whole record. Generally, a resource will be considered by the lead agency to be historically significant if the resource meets the criteria for listing in the CRHR (PRC Section 5024.1).
4. The fact that a resource is not listed in or determined to be eligible for listing in the CRHR, not included in a local register of historical resources (pursuant to Section 5020.1[k] of the PRC), or identified in a historical resources survey (meeting the criteria in Section 5024.1[g] of the PRC) does not preclude a lead agency from determining that the resource may be an historical resource as defined in PRC Section 5020.1(j) or 5024.1.

Unique Archaeological Resources

CEQA also requires lead agencies to consider whether projects will affect unique archaeological resources. PRC Section 21083.2(g) states that a "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.
3. Is directly associated with a scientifically recognized important prehistoric or historic event or person.

California Health and Safety Code

Section 7052 of the Health and Safety Code states that the disturbance of Native American cemeteries is a felony. Section 7050.5 requires that construction or excavation be stopped in the vicinity of discovered human remains until the coroner can determine whether the remains are those of a Native American. If determined to be Native American, the coroner must contact the California Native American Heritage Commission (NAHC).

Public Resources Code, Section 5097

PRC Section 5097 specifies the procedures to follow in the event of the unexpected discovery of human remains on nonfederal land. The disposition of Native American burial falls within the jurisdiction of the NAHC. PRC Section 5097.5 states the following:

No person shall knowingly and willfully excavate upon, or remove, destroy, injure, or deface any historic or prehistoric ruins, burial grounds, archaeological or vertebrate paleontological site, including fossilized footprints, inscriptions made by human agency, or any other archaeological, paleontological or historical feature, situated on public lands, except with the express permission of the public agency having jurisdiction over such lands. Violation of this section is a misdemeanor.

Local Regulations

Redwood City General Plan

The Built Environment (BE) Element of the General Plan includes the following two Guiding Principles related to historic resources:

- Ensure that change harmonizes with existing development to preserve our historic and neighborhood character.
- Preserve and generate awareness of our cultural, educational, economic, recreational diversity, and historic heritage.

The following policies, which are identified in the BE Element of the Redwood City General Plan (adopted 2010), are relevant to the proposed project, and were adopted for the purpose of avoiding or mitigating an environmental effect.

Goal BE-37: Protect, preserve, restore, rehabilitate, and/or enhance historic resources.

- **Policy BE-37.1:** Enhance, restore, preserve, and protect, as appropriate, historic resources throughout the city.
- **Policy BE-37.2:** Preserve historic landmark structures, landscapes (including trees), trails, and sites that serve additional community needs, such as recreational open space and/or cultural needs.
- **Policy BE-37.3:** Encourage the retention and/or adaptive reuse of historic residential, commercial, and industrial buildings.
- **Policy BE-37.4:** Consider relocation of landmark structures to vacant sites within established landmark districts when no other alternative exists for their preservation, or if a particular structure is not protected by ordinance.
- **Policy BE-37.5:** Provide incentives, support, and guidance to the owners of designated historic landmark sites to preserve and rehabilitate structures.
- **Policy BE-37.6:** Allow only compatible, historically appropriate development on vacant parcels within or adjacent to designated historic areas, neighborhoods, and/or sites in compliance with the Secretary of the Interior's Standards.
- **Policy BE-37.7:** Strive for compatibility with existing historic resources when planning for infrastructure improvements, restorations, new construction, alterations, or similar projects in designated historic districts.

- **Policy BE-37.8:** Permit removal of non-contributing elements of structures in or adjacent to designated historic resources to allow replacement by compatible, historically appropriate structures.

Goal BE-38: Establish robust programs and activities that educate the public about the history and historic resources of Redwood City.

- **Policy BE-38.1:** Encourage public knowledge, understanding, and appreciation of Redwood City's role in local and regional history.
- **Policy BE-38.3:** Advocate for the preservation and appropriate rehabilitation of historically significant properties and structures.
- **Policy BE-38.4:** Support and consult with private associations, groups, nonprofit organizations, corporations, school districts, and public agencies with an interest in historic preservation of significant historic resources.

Redwood City Historic Preservation Ordinance

The City Historic Preservation Ordinance (Chapter 40 of the City Municipal Code) is structured to identify historical resources at the early stages of projects, and to resolve conflicts that arise between land uses and the preservation of historical resources. The Historic Preservation Ordinance requires that applications or projects affecting historic resources comply with applicable local, state, and federal laws. Under the Historic Preservation Ordinance, the City also maintains a list of individual historic landmarks, resources, and districts. The list is continually updated as new sites and landmarks are identified.

A property may be listed as a historic landmark or historic site if it meets one or more of the following criteria:

- A. It exemplifies or reflects special elements of the City's cultural, aesthetic or architectural history; or
- B. It is identified with persons or events significant in local, State or national history; or
- C. It embodies distinctive characteristics of a style, type, period or method of construction, or is a valuable example of the use of indigenous materials or craftsmanship; or
- D. It is representative of the notable work of a builder, designer or architect.

The Historic Resources Advisory Committee advises the Redwood City Planning Commission regarding the implementation of the City's Historic Preservation Ordinance. The Committee recommends historic designation of local landmarks and districts; performs design review of changes to historic buildings and adjacent affected sites; and is involved in other historic preservation-related activities.

Redwood City Cultural Resources Management Plan

Program BE-109 of the City's General Plan pertains to the City Cultural Resources Management Plan (CRMP). The CRMP contains policies and guidelines for monitoring excavation activities, and procedures to follow in the event of a cultural resource discovery. Compliance with mitigation measures in the CRMP is required for most discretionary actions that involve an identified historic site or a site that has a potential for on-site discovery, reconnaissance, and identification of cultural (archaeological) resources. The CRMP requires that developers prepare a cultural resources plan in compliance with CEQA

regulations for all historic sites that have the potential for the on-site discovery, reconnaissance, and identification of cultural resources.

Redwood City Sign Ordinance

Chapter 3, Article II Advertising and Signs of the City Code of Ordinances includes objectives for the historic preservation of signs. Signs significantly affect the aesthetic appeal of the City and its streetscapes; they also affect the quality of the visual environment and influence perceptions of local economic conditions. The purpose of this Article is to ensure that information by signs on regulated land is presented safely and effectively in a manner that enhances the quality of the visual environment, aids in attracting shoppers and other visitors, and promotes traffic safety and convenient circulation for motorists, bicyclists, and pedestrians.

The Historic Preservation objective of the ordinance is to establish procedures to allow the continued use, maintenance, and repair of nonconforming historic signs that preserve locally recognized values of community appearance or that reflect unique characteristics of development.

Any historical sign that complies with the provisions of this Section shall be exempt from the requirement that the sign be removed or altered to conform to this Article upon approval of a historical sign permit pursuant to the City Historic Preservation Ordinance (Chapter 40 of the City Municipal Code). A request for approval of a historical sign permit shall be made by filing a sign permit application as set forth in Division 3 of this Article. The Director may seek a recommendation from the City's Historical Resources Advisory Committee related to the consideration of a historical sign permit. The Director shall approve a historical sign permit upon making the following findings:

- A. **Age and Significance:** The sign was installed at least 50 years prior to the effective date hereof and/or reflects the unique historical characteristics of the development and heritage of Redwood City:
 - 1. The sign is annotated with historic figures, events or places;
 - 2. The sign is significant as reflecting the history of the building or the development of a historic district (a sign may be the only indicator of a buildings historic use);
 - 3. The sign is characteristic of a specific historic period;
 - 4. The sign is an important element that helps define the character of a district;
 - 5. The sign is recognized as a popular local point in the communities.
- B. **Exemplar:** The sign reflects exemplary technology, craftsmanship or design that is indicative of the time period in which the sign was constructed. The sign is recognized by the community as an outstanding example of the signmaker's art and provides significant evidence of the history of the product, business, or service advertised.
- C. **Architectural Harmony:** The sign is in architectural harmony with building(s) on the property and/or the sign is integral to the building's design or physical fabric and removal of the subject sign could harm the historic integrity of the subject property.
- D. **Safety:** The sign is structurally sound and complies with the requirements of this Article or will be brought into conformance with such requirements within a reasonable and specified time.

3.3.3.2 Existing Conditions

This section provides an overview of the prehistory and history of Redwood City and describes cultural resources of historical significance that may be affected by the proposed project. It also describes the methods used to obtain information on the project area.

Background Research

A cultural resources records search of the project area, as well as a surrounding 500-foot buffer, was conducted at the Northwest Information Center (NWIC) on January 9, 2019, to identify previous cultural resource studies and recorded resources in the area (NWIC File Number 18-1254). The NWIC records search identified one previously recorded archaeological site in the project area—P-41-506 (CA-SMA-358/H).

AECOM conducted an archaeological investigation of P-41-506 (CA-SMA-358/H) using a Geoprobe direct-push drill rig and mechanically excavated trenches in July and September 2019, respectively. Details about these investigations are provided below under the discussion of Archeological Resources.

The files of the NWIC also revealed that one previously recorded built-environment resource is in the project area at 1303 Main Street (P-41-002490). The property was recorded in 2011 for the Historic Architectural Survey Report for the San Francisco to San Jose High-Speed Train Project-Level EIR/EIS for the Federal Rail Association (AECOM 2019b). The property was not recommended as eligible for listing in the CRHR.

Although not on file at the NWIC, the J.B. Perry Fuel and Feed Yard Warehouse property at 1401 Main Street was recorded in and was determined eligible for listing in the NRHP at the local level, under Criterion A (AECOM 2019b). The property is considered a historical resource for the purposes of CEQA.

Additional research regarding historical context development, as well as building-specific research, was conducted by AECOM at the Karl A. Vollmayer Local History Room at the Redwood City Downtown Library on December 12, 2018. AECOM also used online resources, including historic-age newspapers, historic-age aerial photographs and maps, census data, and City of Redwood City databases that contained built-environment information.

Field Surveys

AECOM staff conducted an archeological survey of the project area on January 16, 2019. The survey included a pedestrian survey, and any available ground surface was closely inspected. No cultural materials were identified; however, a *Cerithidea* (spiral-shaped mud snail) shell was identified in a sidewalk planter on the southern side of Elm Street, between Lathrop and Main streets. AECOM archaeologist conducted an archaeological investigation of a known archaeological site in the project area, P-41-506 (CA-SMA-358/H), using a Geoprobe direct-push drill rig and mechanically excavated trenches in July and September 2019. Further details about this investigation are included below under the discussion of Archeological Resources.

A survey of the built environment was conducted by AECOM architectural historians Chandra Miller and Heather Miller on December 12, 2018 to inventory and evaluate historic-age (45 years and older) properties on the project site, and to assess whether the properties should be considered historical resources for the purposes of CEQA. The survey included taking photographs and notes of the historic-age buildings, structures, and objects from the public right-of-way. The study population included 10 historic-age properties in the project site.

Prehistoric and Ethnographic Background

Early Holocene occupation of the San Francisco Bay region is characterized by the use of handstones and millingslabs, stemmed points, crescents, and steep-edged formed flaked tools that served a semi-mobile hunter-gatherer population who exploited a wide range of plants and animals from marine, lacustrine, and terrestrial environments (Byrd et al. 2016). Early Holocene archaeological deposits in the San Francisco Bay region are currently limited to six sites. Middle Holocene archaeological deposits are represented with over 60 known sites in the San Francisco Bay-Delta Area (Byrd et al. 2016). Sites from this period include both surficial and buried deposits, with a number of substantial residential settlements.

The Late Holocene is well-documented in the San Francisco Bay-Delta Area with over 240 known archaeological sites (Milliken et al. 2007). This time period is reflective of an increase in population and socio-economic complexity, coupled with resource intensification and an increase in inter-group violence (Lightfoot et al. 2013; Schmitz et al. 2014; Whitaker and Byrd 2014). The most dramatic shift observable in the archaeological record during the Late Holocene is the establishment and/or significant expansion of shellmounds around the Bay. Mound building reached its climax approximately 2,150 to 930 years ago, with the majority of the dated mound sites having components from this time (Lightfoot and Luby 2012).

The project area is in the territory of the Costanoan—also commonly referred to as the Ohlone—language group. The basic Ohlone social unity was the family household, which was grouped together to form villages; which in turn formed tribelets (Harrington 1942). Tribelets exchanged trade goods such as obsidian, shell beads, and baskets; participated in ceremonial and religious activities together; intermarried; and could have extensive reciprocal obligations to one another involving resource collection. For the Ohlone, like many other native Californians, the acorn was a dietary staple. The Ohlone also used a range of other plant resources as food, medicine, soap, tools, and building materials; including buckeye, California laurel, elderberries, strawberries, manzanita berries, goose berries, toyon berries, wild grapes, wild onion, cattail, soap root, wild carrots, clover, and an herb called chuchupate. Animals eaten by the Ohlone and their neighbors included large fauna such as black-tailed deer, Roosevelt elk, antelope, and marine mammals; smaller mammals such as dog, skunk, raccoon, rabbit, and squirrel; birds, including geese and ducks; and fish such as salmon, sturgeon, and mollusks. Frogs, toads, owls, eagles, and ravens were not eaten.

Regional Historic Background

Hispanic Period

As a result of the Cabrillo expedition of 1542-1543, the southbound passage of the Manila Galleon along the coast after 1565, and subsequent voyages of exploration by Cermmenho in 1597 and Vizcaino in 1602, the California coastline was familiar to navigators by the end of the sixteenth century (Donley et al. 1979). Conversely, the interior remained unknown until the eighteenth century. Initial European exploration of the project vicinity was initiated in 1769, and lasted until 1810. During this period, a number of Spanish expeditions penetrated the territory occupied by *Ohlone* peoples. Between 1769 and 1776, forays led by Portola, Ortega, Fages, Fages and Crespi, Anza (two expeditions), Rivera, and Moraga were carried out. Favorable reports led to the founding of seven missions in the region between 1770 and 1797.

In the spring of 1776, the site of San Francisco was chosen by Juan Bautista de Anza for the establishment of a mission and military post. Later that same year, the Mission San Francisco de Asís and Presidio de San Francisco were officially dedicated, and Jose Joaquin Moraga (Anza's lieutenant) took formal possession in the name of King Carlos III (Hoover et al. 1990:331-334).

El Camino Real, the King's Highway, was forged by Father Junipero Serra, beginning in 1769 between San Diego and San Francisco, which was a 600-mile-long route that linked the 21 Alta California missions. According to Chavez and Hupman (1991:9), in the 1790s, the Spanish had established a "Hospice" (outpost) in San Mateo County that moved grain and livestock to the Mission and Presidio in San Francisco via El Camino Real.

By the late eighteenth century, Spanish settlers moved into northern California, established the mission system, and dramatically transformed Ohlone culture. Many Ohlone were baptized by the Franciscan missionaries and made to work on mission farms. Following the secularization of the missions in 1834, many of the surviving Ohlone worked as manual laborers on ranchos (Levy 1978:486). Ohlone people currently live in their traditional territory, which includes Redwood City, and continue to engage in traditional cultural practices.

Mexico gained independence from Spain in 1821, but continued its system of granting large tracts of land in California, such as the grant to the Arguello family, who received Rancho de las Pulgas in 1835. This grant of 69,120 acres extended from San Mateo Creek on the north to San Francisquito Creek on the south, including the project vicinity. The tidal marshes remained in possession of the United States government, and later the State of California, until reclaimed by private interests in the latter half of the nineteenth century. The Arguello family shipped their products—largely hides, tallow, and redwood logs—via rafts that disembarked from "El Embarcadero," near what is now the intersection of Broadway and Main Street in downtown Redwood City. The waterway was what Anglo European settlers would later call "Redwood Creek" (AECOM 2019b).

American Period

The discovery of gold in California in 1848, and the subsequent influx of gold seekers, precipitated the end of the rancho era; the creation of the State of California; and many other changes to Rancho Las Pulgas and the Embarcadero. Thousands of Americans and immigrants from around the world streamed into the San Francisco Bay Area, most on their way to the interior gold fields, but some pursuing other endeavors. Enterprising shingle-makers R.O. Tripp and Matthias Parkhurst saw that the Embarcadero at Redwood Creek was a good shipping point for sending their products to San Francisco, and they were soon joined by other entrepreneurs. By 1851, the Redwood Embarcadero was a busy place for shipping shingles, firewood, and fence posts to San Francisco. During this time, the project site remained undeveloped (AECOM 2019b).

Most gold rush immigrants either soon gave up the search and left the state, or settled elsewhere in California to pursue a living through other means. The Arguellos had to defend their ownership of Rancho de las Pulgas in court against claims of squatters; and through this court battle, the family's representative, Simon M. Mezes, eventually acquired a substantial portion of the property, which included the land that would become Redwood City. Mezes had the land surveyed for a townsite. Most of the new Mezesville streets formed a regular grid of blocks with El Camino Real as their western boundary, but the southeastern portion of the plan conformed with the streets that had already developed on the eastern and western side of the Embarcadero, at the head of Redwood Creek Slough. San Mateo County was created from a division of San Francisco County in 1857, and Redwood City became the new seat of San Mateo's government, although the City did not incorporate for another decade (AECOM 2019a).

The town grew slowly in population and amenities, with commerce still centered near the wharf throughout the 1860s. The San Francisco and San Jose Railroad was completed through Redwood City in 1863; and within the next year, offered passenger and freight service between San Francisco and San Jose. The Southern Pacific Railroad acquired the line in 1870 (this line now serves Caltrain). The arrival of rail service, coupled with continual silting of the creek, started a slow decline in maritime

shipping activity from the Embarcadero, although most local products were transported by water through the late-nineteenth century (AECOM 2019b).

Early Redwood City was relatively self-sustaining, with lumber and shipping businesses sharing the waterfront with tanneries and general merchandise warehouses, as well as retailers who served residents employed in local government, service professions, ranching, and farming. The blocks along Main Street and Broadway continued to serve as the business center of town. By the 1870s and 1880s, a significant concentration of businesses grew along both streets, including several hotels, saloons, and stables, as well as tin shops, butchers, barbers, breweries, a flour mill, and a drug store. This concentration of businesses was three to four blocks north, outside of the project site, and is the location of some remaining nineteenth-century commercial buildings (AECOM 2019b).

Local Historical Background

The project area is just south of the historic business center of Redwood City, parallel to the railroad and El Camino Real (formerly County Road), adjacent to Redwood Creek Slough, and bisected by Main Street. This setting served as a catalyst for heavy- and light-industrial uses, including tanneries, lumber yards, utility company warehouses, and feed and fuel yards, but was also interspersed with single-family residences for the people who worked at these local businesses (AECOM 2019b).

Tanneries

Tanneries were an early and important industry for the growing city. Plentiful tan oaks in the nearby hills provided the essential tannic acid to tan leather; hides were secured from local cattle ranchers and butchers who supplied beef to San Francisco; Redwood Creek provided an abundant water supply; and shipping capabilities from the wharf at the Embarcadero primed the industry for success. The first tannery was Krieg Tannery, established in 1864, located on the southern side of Redwood Creek, west of Lathrop Street, north of Beech Street, and east of El Camino Real. The site is the current location of Hopkins Acura, at 1555 El Camino Real in the project area. The tannery was purchased by Henry Beeger in 1878. Beeger made a series of improvements on the site between 1891 and 1907, including the construction of his residence immediately across Redwood Creek, which was accessed by a small footbridge. The company remained in operation until 1947, and the entire property was leveled in 1949 (AECOM 2019b).

Light-Industrial Development

Historically, a number of lumber yards were located in and around the project area. The Gray-Thorning Lumber Company was at the corner of El Camino Real and Redwood Avenue, four blocks southeast from the project site (demolished circa 1950-1956). Redwood City Planing Mill was built on the former site of the John Horstman Co. Soda Works, just east of the eastern boundary of the project site along the railroad tracks. The Sudden Lumber Company, which was in the project site on the northern end of the block at the southeastern corner of El Camino Real and Beech Street, was in operation at the site at some point between 1919 and 1931. All of the lumber-related buildings were demolished between 1950 and 1956, and the entire block was eventually transformed into a car dealership, now Towne Ford, at 1601 El Camino Real (AECOM 2019b).

Feed and fuel yards were also a common business operated in this part of the city. J.B. Perry's Fuel & Feed, located in the project site at 1401 Main Street, began as a lumber yard property by 1891, and operated until near the end of the nineteenth century. In 1908, new a grain building was constructed on the property by new property owner Joseph B. Perry. The business remained in operation and in the same family until 1989, but after a series of demolitions, fires, and improvements, the oldest building associated with the business is a corrugated metal shed constructed in 1935. Another feed and fuel yard was located just northwest from the northern boundary of the project site, bound by Maple, Lathrop, Main,

and Elm Streets and the rail line. The business was established in the early twentieth century, but had a much shorter life-span than J.B. Perry's Fuel & Feed, and most of the buildings were demolished between 1963 and 1968. A small office was constructed on the property in the late 1960s, but has since been demolished (AECOM 2019b).

Auto-Related Commercial Development

Today's El Camino Real has little resemblance to the footpath forged by Father Junipero Serra. Portions of the trail were improved over time for wagons, and later, stagecoaches; but major collective improvements to the route did not take place until the spread of the automobile at the turn of the twentieth century. The State Highways Act passed in 1909, and authorized creation and improvements of a state-wide highway system. El Camino Real was integrated starting in 1912, and was completed in the mid-1920s. Completion of the roadway turned the historic route into a commercial corridor, especially through the Peninsula, where it closely parallels the former Southern Pacific Rail Road tracks (AECOM 2019b).

The El Camino Real corridor along the Peninsula transformed into an unofficial "auto row" in the years leading up to World War II, and increased even more in the post-war boom years, which also coincided with increased residential development. Between 1940 and 1960, the population of Redwood City nearly quadrupled from 12,450 to 46,300. To cope with the increased population, empty lots outside the central core of the city were infilled with residential and commercial buildings. Near El Camino Real a self-serve car wash was constructed at the northeastern corner of the intersection of Main and Cedar streets between 1965 and 1968, located on the project site Parcel E. The associated stand-alone "Main Street Coin-Op Car Wash" Googie-style sign appears to date to the same period the car wash was constructed and is only historic-age sign in the project vicinity indicative of the Post-World War II era use of this area of Redwood City by automobile-associated businesses.

Post-War Recreational Development

In the post-war period, increased and denser population necessitated the construction of conveniences like grocery stores, as well as recreational facilities, such as the roller rink at 1303 Main Street built in 1953. The roller rink was constructed for owners Joseph "Joe" Nazzaro and Meredith "Red" Shattuck, who both previously worked at other roller rinks as skating instructors. The second owners, who took over the business in 1969, operated the rink until its closure in 2017. A metal sign that reads "Skate" is affixed above the lobby entrance into the former Redwood Rink building and is recognized as a popular local point in the community and is located on project site Parcel E (AECOM 2019b).

Archeological Resources

P-41-506 (CA-SMA-358/H)

As described above, the files of the NWIC indicate that archaeological site P-41-506 (CA-SMA-358/H) has been previously recorded in the project area. This archaeological site was identified during utility installation in 2001, and described as having both prehistoric and historic-era components (Brown 2001). The original site record of Brown's (2001) also notes that Main Street was originally called Mound Street, and that the prehistoric component of the site within the project area and immediate vicinity could be the result of grading and redeposition (i.e., secondary deposit). Brown described the entire site as being "disturbed by historic and modern construction activities possibly as early as the 1850s" (Brown 2001). A subsequent investigation in 2010 found that the integrity of the site "has been disturbed through historical and modern development" (Martinez et al. 2010). This same 2010 study, however, expanded the site boundaries, despite the observed disturbance.

Based on the previous investigation of P-41-506 (CA-SMA-358/H), the site was recommended as eligible for listing in the NRHP under Criterion D – likely to yield information regarding important questions in prehistory and history (Martinez et al. 2010). However, given the documented disturbed context of the portion of the site actually investigated by Martinez, as well as the supposition that a secondary deposit may be represented, additional work was conducted by AECOM to confirm the presence of the site in the current project area (given the obscured ground surface); and if present, to determine whether the portion of the site in the project area represents a secondary deposit. If a secondary deposit, the cultural materials represented would not retain sufficient integrity for eligibility to the CRHR, nor meet the criteria as a historical resource for the purposes of CEQA.

As indicated above, AECOM conducted an archaeological investigation of P-41-506 (CA-SMA-358/H) using a Geoprobe® direct-push drill rig and mechanically excavated trenches in July and September 2019, respectively, in support of the South Main Mixed-Use Redevelopment Project. AECOM focused their investigation on the area that was previously identified as the central part of the site—Main Street between Beech and Cedar streets; specifically, the area in front of the car wash (Brown 2001). A total of five Geoprobe® bores were drilled, and four trenches were mechanically excavated within the boundaries of CA-SMA-358/H. Bores went as deep as 38 feet below surface, and trenches went as deep as 5 feet below surface. Soils from CA-SMA-358/H were dry screened through 0.25-inch mesh. A total of 0.825 cubic meters was screened.

The first excavated trench in the parking lot of 121 Beech Street identified one obsidian flake, three Franciscan chert flakes, four Monterey chert flakes, and two chunks of lithic shatter in the northwest portion of P-41-506 (CA-SMA-358/H). These flakes were found between 65 to 135 centimeters below surface. Also in this trench were marine mollusk shell (native oyster [*Ostrea lurida*], bay mussel [*Mytilus edulis*], barnacle, California horn snail (*Cerithidea californica*) crab, bent-nosed clam (*Macoma nasuta*) and cockle (*Clinocardium nuttallii*), as well as several fragments of rodent bone, one small bird long bone fragment, a hand-sawed sheep tibia (with evidence of rodent and canid gnawing), a kaolin smoking pipe stem fragment, and glass container fragments (aqua and milk glass). In addition to the prehistoric and historic-era artifacts, two fragments of modern plastic were also present in this same level between 65 and 135 centimeters below surface.

No clearly prehistoric cultural materials were recovered from the other trenches or bores. A second excavated trench near the corner of Main and Cedar streets had no marine shell, one fragment of bone (possibly modern recovered several pieces of glass and one fragment of ceramic, all in the top 10 centimeters of soil. The third excavated trench in the parking lot near the entrance to the former roller rink had marine shell in the top soil layer, along with structural remains, historic-era butchered bone, and several fragments of glass tumbler. The fourth and final trench, near the southwestern corner of the former roller rink, had no marine shell in top soil layers, and recovered one historic-era butchered bone, two fragments of industrial ferrous metal, and several fragments of modern glass.

Brown (2001) indicated that the densest portion of the site in terms of both marine shell and prehistoric and historic-era artifacts was in the “yard” of the car wash, but went on to say that the debitage and historic-era debris were identified on the surface. However, the bores and trenches that AECOM excavated on either side of the “yard” produced limited to no marine shell, no prehistoric artifacts, and only historic-era glass fragments and butchered bone. Modern debris was also identified intermixed with the prehistoric and historic-era materials.

Based on the subsurface investigations at P-41-506 (CA-SMA-358/H) by AECOM (2019) the cultural deposit identified in the South Main Mixed-Use Redevelopment project area do not appear to be eligible to the CRHR. Trenching indicates that these artifact concentrations have been completely disturbed and likely transported to this locale during previous grading or other earth-moving activities. In conclusion, the

portion of archaeological site CA-SMA-358/H in project area is not a historical resource or a unique archaeological resource for the purposes of CEQA. An update to the original site forms for P-41-506 (CA-SMA-358/H) is provided in Appendix CR (Confidential).

Built Environment Historical Resources

Built environment historical resources in the project area are discussed below. The 2019 Historical Resource Inventory and Evaluation Report (AECOM 2019b) evaluated 10 properties at the project site that have been determined to be more than 45 years in age, and therefore considered potentially eligible for listing in the CRHR and the Redwood City criteria. These properties are shown on Figure 3.3-1. The findings in the report indicated that three CRHR-eligible properties exist in the project area: Perry's Fuel & Feed shed, the "Skate" Historic Signage, and "Main Street Coin-Op Car Wash" Historic Signage are discussed in further detail below. The remaining seven properties in the project site were found not to be eligible for listing under CRHR and/or the Redwood City criteria. See Appendix CR prepared by AECOM for full results of inventory and an evaluation of the ten historic-age resources at the project site. Three properties are therefore considered historical resources for the purpose of review under CEQA. Below is a summary of each historical resource.

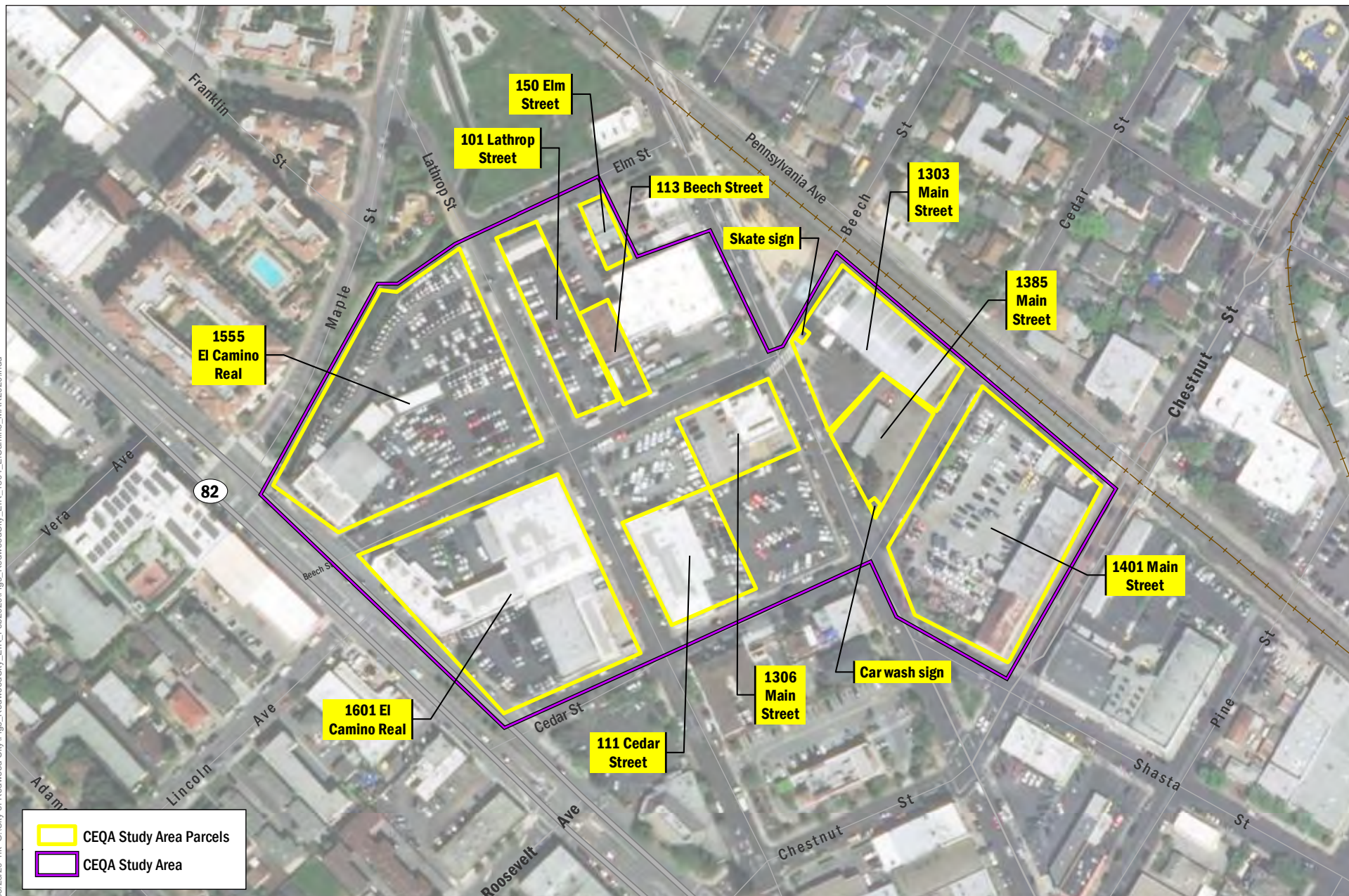
Perry's Fuel & Feed Shed (1401 Main Street)

Perry's Fuel & Feed Shed, located on the project site at 1401 Main Street, began as a lumber yard in 1891, and operated until near the end of the nineteenth century. In 1908, a new grain building was constructed on the property by new property owner Joseph B. Perry. The business remained in operation and in the same family until 1989; but after a series of demolitions, fires, and improvements, the oldest remaining building associated with the business is a corrugated metal shed constructed in 1935 (see Photograph 3.3-1).



Photograph 3.3-1 Perry's Fuel & Feed (1401 Main Street), 1935-Constructed Corrugated Metal Shed

Another feed and fuel yard was just northwest of the northern boundary of the project site, bound by Maple, Lathrop, Main, and Elm Streets and the rail line. The business was established in the early-twentieth century, but had a much shorter life-span than Perry's Fuel & Feed, and most of the buildings were demolished between 1963 and 1968. A small office was constructed on the property in the late 1960s, but has since been demolished (AECOM 2019b).



Data Source: ESRI, 2019.



CEQA STUDY AREA

South Main Mixed-Use Development Project
City of Redwood City, California

FIGURE 3.3-1

As part of a previous evaluation, the existing 1935-constructed corrugated metal shed that housed Perry's Fuel & Feed was determined eligible for listing in the NRHP at the local level, under Criterion A, for its association with the nineteenth- and early-twentieth-century fuel and feed yard economy; and under Criterion C as a "good example of a fast-disappearing industrial building type: the functional, corrugated-metal warehouse," (AECOM 2019b). The property is listed in the City's Historic Resources Inventory.

The City of Redwood City, as the lead agency for the South Main Mixed-Use Development Project (proposed project), assumes that the shed building at 1401 Main Street is a historical resource for the purposes of CEQA. The character-defining features of the historical resource are its corrugated metal siding and roofing, gable roof with monitor with louvered sides; rectangular plan; and ghost signage. The physical boundary of the historical resource is the footprint of the Perry's Fuel & Feed Shed building, and the period of significance is its circa-1935 built date.

"Skate" Historic Signage (1303 Main Street)

Although the former skating rink building at 1303 Main Street does not meet CRHR or Redwood City criteria as a historical resource; based on the City of Redwood City Sign Ordinance, the "Skate" sign on the former Redwood Rink building meets the City's signage ordinance requirement of being at least 50 years old (see Photograph 3.3-2). The sign also meets the historical sign Criterion 5 of being recognized as a popular local point in the community, mounted above the lobby entrance into the former Redwood Rink building. The "Skate" sign meets the local sign ordinance criteria as a historic sign, and appears to merit local designation as a historical resource.



Photograph 3.3-2 "Skate" sign on 1303 Main Street Redwood Rink

"Main Street Coin-Op Car Wash" Historic Signage (1385 Main Street)

Although the commercial self-serve car wash building at 1385 Main Street does not meet CRHR or Redwood City criteria as a historical resource, the "Main Street Coin-Op Car Wash" sign is also at least 50 years old, and meets historical sign Criterion 3 as characteristic of a specific historic period (mid-1960s Google) (see Photograph 3.3-3). In addition, the car wash sign is the only historic-age sign in the project vicinity indicative of the Post-World War II era use of this area of Redwood City by automobile-associated businesses. Therefore, it is an important element that defines the character of this part of Redwood City.



Photograph 3.3-3 “Main Street Coin-Op Car Wash” sign at 1385 Main Street

3.3.4 Standards of Significance

The following significance criteria are from Appendix G of the CEQA Guidelines, and are used to determine the level of impacts to cultural resources. The proposed project would result in a significant impact if it would:

1. Cause a substantial adverse change in the significance of a historical resource as defined in CEQA Guidelines Section 15064.5.
2. Cause a substantial adverse change in the significance of an archaeological resource pursuant to CEQA Guidelines Section 15064.5.
3. Disturb any human remains, including those interred outside of formal cemeteries.
4. Combined with cumulative development, including past, present, and reasonably foreseeable future development, could result in a significant adverse cumulative cultural resources impact?

According to CEQA Guidelines Section 15064.5(a)(3), in general, a resource shall be considered “historically significant” if the resource meets the criteria for listing on the California Register (PRC Section 5024.1). This section also provides standards for determining what constitutes a “substantial adverse change” that must be considered a significant impact on historical resources.

Substantial adverse change in the significance of an historical resource means physical demolition, destruction, relocation, or alteration of the resource or its immediate surroundings such that the significance of an historical resource would be materially impaired.

Standards of significance Criterion 3 “Disturb any human remains, including those interred outside of formal cemeteries,” was discussed in the Initial Study (Appendix IS) and was found to be less than significant. Therefore, it is not discussed further in this DEIR section.

3.3.4.1 Approach to Analysis

Potential impacts on cultural resources were assessed by examining the effects of the proposed project on the historical resources (historic built environment and archaeology) identified at the project site. The potential project effects were assessed using the Standards as the threshold criteria for determining whether the proposed project would result in a substantial adverse change in the significance of historical resources.

3.3.5 Impact Discussion

CR-1	The project would result in a substantial adverse change in the significance of a historical resource.
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Construction

The proposed project’s construction would result in a significant impact to historical resources resulting from demolition of Perry’s Fuel & Feed Shed at 1401 Main Street, and relocation of the “Skate” sign at 1303 Main Street and the “Main Street Coin-Op Car Wash” sign at 1385 Main Street from their original locations.

The following provides further analysis of the project’s potential to result in a substantial adverse change in the significance of the historical resource.

Demolition

The proposed project would develop 540 multi-family residential units, approximately 530,000 square feet of office use, an 8,400 square-foot childcare facility, approximately 29,000 square feet of retail use, and approximately 40,000 square feet of public open space proposed throughout the site; and would demolish all existing buildings on the six project parcels. Perry’s Fuel & Feed Shed would also be demolished, and a replica shed structure rebuilt with non-historic materials, which would constitute a substantial adverse change that would impair the significance of the historical resource. Demolition of a historical resource is usually considered a significant unavoidable impact under CEQA.

Relocation

The proposed project would include the removal of the “Skate” sign at 1303 Main Street and the “Main Street Coin-Op Car Wash” sign at 1385 Main Street, which meet the criteria for historical resources. Both of the buildings associated with the signs would be demolished. With the combined demolition of the buildings and the relocation of the signs, the location and setting of the historic signs would be diminished. Relocation of a historic resource does not always constitute a significant unavoidable impact under CEQA.

Significance without Mitigation: Significant

Because the proposed project would result in the demolition of Perry’s Feed Shed, mitigation measures must focus on establishing a record of the historical resource prior to any changes resulting from the proposed project. However, under CEQA, documentation of a historical resource, by way of historic narrative, photographs or architectural drawings, as mitigation for the effects of demolition of the resource

would not sufficiently mitigate the effects to a point where clearly no significant effect on the environment would occur. Regardless, implementation of all feasible mitigation measures is required under CEQA.

As detailed below, Mitigation Measure CR-1a requires archival documentation, and Mitigation Measure CR-1b requires interpretive materials be created for the historical resource prior to changes, to provide the public with information concerning the historical resource. Mitigation Measure CR-1c would provide an opportunity to salvage and reuse architectural elements of Perry's Fuel & Feed Shed as part of the proposed project design. Mitigation Measures CR-1d and CR-1e provide for salvage and relocation of the historic signage and recordation through archival documentation.

Mitigation Measure CR-1a: Perry's Fuel & Feed Shed Archival Documentation

In consultation with the City of Redwood City Planning Division, the project applicant shall document Perry's Fuel & Feed (shed) at 1401 Main Street prior to alteration, construction activities, removal, or demolition. A detailed archival record of the building would be prepared, so that a record of the significant resources is maintained for public information. Prior to the commencement of construction or demolition activities for the proposed project, professionals qualified under the Secretary of the Interior's Professional Qualifications Standards (in history or architectural history) (36 CFR Part 61) would prepare archival materials consistent with the standards of the National Parks Service (NPS) Historic American Building Survey (HABS)/Historic American Engineering Record (HAER) documentation. The record for the shed would be equivalent to HABS/HAER Level III documentation, and would consist of:

- Drawings/Sketch plans (illustrating the exterior elevations of the shed may be produced in computer-assisted drafting format, or based on as-built drawings, if available).
- Photographs (archival quality, photograph key, and photograph log).
- Written historical data (including significance statement, narrative building description and historical context). The materials would be compiled as a detailed record that reflects the shed's historical significance.

If digital photography is used, the ink and paper combinations for printing photographs must be in compliance with NRHP and National Historic Landmarks photo expansion policy and have a permanency rating of approximately 115 years. Digital photographs will be taken as uncompressed TIF file format. The size of each image will be 1,600 by 1,200 pixels at 300 pixels per inch (ppi) or larger color format. Photograph views for the dataset would include: 1) contextual views; 2) views of each side of each building and interior views, (where possible and applicable); 3) oblique views of the building; and 4) detail views of character-defining features. All views would be referenced on a photographic key. This photograph key would be on a map of the resource, and would show the photograph number with an arrow indicate the direction of the view. Efforts should be made to locate, collect, and reproduce construction drawings, plans, and historic photographs of the resources to include in the dataset. The total number of photographs in the datasets would not exceed 15 views for the shed.

Following completion of the HABS/HAER documentation, the record would be submitted to the City of Redwood City Planning Division for final approval. The final archival-quality documentation materials would be placed on file with the City of Redwood City, local museums, and libraries (including, at a minimum, the San Mateo County History Museum [Redwood City] and the Local History Archive Room [Karl A. Vollmayer Collection] of the Redwood City Public Library).

Mitigation Measure CR-1b: Perry's Fuel & Feed Shed Permanent Interpretative Display

The project applicant would be required to create a permanent interpretive display/panel/signage to the satisfaction of the City of Redwood City Planning Division for public exhibition concerning the history of Perry's Fuel & Feed Shed, the site, and the feed and fuel industry in Redwood City. The interpretive display/panel/signage would include information from the archival documentation prepared under Mitigation Measure CR-1a. The permanent interpretive display/panel/signage would be installed in the project site in a highly visible public area on the site of the rebuilt shed structure. Displayed photographs would include information about Perry's Fuel & Feed Shed, the date of the photograph, and photo credit/photo collection credit. The City of Redwood City Planning Division would be responsible for reviewing and approving the interpretive display. All costs associated with the development and installation of the permanent interpretive display would be borne by the project applicant.

Mitigation Measure CR-1c: Shed Deconstruction, Architectural Salvage, and Reuse

The project applicant would be required to consult with the City of Redwood City Planning Division regarding the feasibility of potential de-construction, salvage, and reuse of architectural features from Perry's Fuel & Feed Shed that would serve as important artifacts and physical reminders of the shed's material existence. Examples of the property's character-defining features that could be potentially salvaged, reused, and integrated into the project design are the corrugated metal siding and roofing, gable roof form with louvered-sided monitor, the rectangular plan of the warehouse, and Ghost signage, which are illustrated in Appendix CR of the report titled *Historical Resource Inventory and Evaluation Report, South Main Mixed Use Project* prepared by AECOM. To the extent that it is reasonable and feasible as determined by the City, the project applicant would, through careful methods of planned deconstruction to avoid damage and loss, salvage character-defining features and historic materials for reuse in new construction on the site. No deconstruction or salvage of architectural materials would occur until HABS documentation with photographic inventory of key exterior features and materials is completed (in accordance with Mitigation Measure CR-1a). Historic materials that are contaminated, unsound, or decayed would not be included for salvage and reuse and would be replaced with like and in-kind modern materials.

Mitigation Measure CR-1d: Historic Signage Archival Documentation

In consultation with the City of Redwood City Planning Division, the project applicant would document the "Skate" sign mounted on the former indoor roller rink at 1303 Main Street and the "Main Street Coin-Op Car Wash" sign at 1385 Main Street prior to alteration, construction activities, removal, or demolition. A detailed archival record of the signs would be prepared, so that a record of the significant resources is maintained for public information.

Prior to the commencement of construction or demolition activities for the proposed project, professionals qualified under the Secretary of the Interior's Professional Qualifications Standards (in history or architectural history) (36 CFR Part 61) would prepare archival materials consistent with the standards of the NPS HABS/HAER documentation. The record would be equivalent to HABS/HAER Level III documentation and consist of:

- Drawing: sketch plan.
- Photographs (archival quality, photograph key, and photograph log).

- Written historical data (including significance statement, narrative description and historical context). The materials would be compiled as a detailed record that reflects the resource's historical significance.

If digital photography is used, the ink and paper combinations for printing photographs must be in compliance with NRHP and National Historic Landmarks photo expansion policy and have a permanency rating of approximately 115 years. Digital photographs will be taken as uncompressed TIF file format. The size of each image will be 1,600 by 1,200 pixels at 300 ppi or larger color format. Photograph views for the dataset would include: 1) contextual views; 2) views of each side of the signs; 3) oblique views of the signs; and 4) detail views of character-defining features. All views would be referenced on a photographic key. This photograph key would be on a map of the resource, and would show the photograph number with an arrow indicate the direction of the view. Efforts should be made to locate, collect, and reproduce construction drawings, plans, and historic photographs of the signs to include in the dataset. The total number of photographs in the datasets would not exceed six views for each sign.

Following completion of the archival documentation, the record would be submitted to the City of Redwood City Planning Division for final approval. The final archival-quality documentation materials would be placed on file with the City of Redwood City, local museums, and libraries (including, at a minimum, the San Mateo County History Museum [Redwood City] and the Local History Archive Room [Karl A. Vollmayer Collection] of the Redwood City Public Library).

Mitigation Measure CR-1e: Historic Signage Salvage, Relocation, and Plaque Installation

Prior to demolition, the project applicant shall remove the "Skate" sign mounted on the former indoor roller rink at 1303 Main Street and the "Main Street Coin-Op Car Wash" sign at 1385 Main Street for salvage and potential reuse. The applicant shall engage a professional in the sign industry to remove the signs and prepare the signs for storage. The applicant shall store the signs either on or off site in a secure location to ensure no damage or theft occurs to the signs during construction activities.

The applicant shall integrate the signs into the project design in outdoor or indoor spaces. Per National Park Service *Preservation Brief 25: The Preservation of Historic Signs* (NPS 1991) guidance, relocating a sign to an interior such as a lobby is less preferable than keeping a sign outside, but it does preserve the sign.

If the applicant chooses to restore the signs, they shall engage a professional in the sign industry for repairs using the National Park Service *Preservation Brief 25: The Preservation of Historic Signs* (NPS 1991) as guidance for the work.

The applicant shall install plaques at the relocated signs. The applicant shall engage a qualified historian or architectural historian to prepare text and content for the plaques, which would be reviewed by City of Redwood City Planning Division. The plaques at the relocation sites shall include a brief history of the business the sign was associated with, the significance of the sign, why the sign was moved, the original site address, and the date of relocation. The applicant shall engage a sign maker to fabricate the plaques for installation at the original and relocation sites of the signage. All costs associated with the development and installation of the plaques would be borne by the project applicant.

If it is not feasible for the project applicant to integrate one or both of the signs into the project plans, the project applicant shall make the signage available to museums, archives, and curation facilities; City departments; and nonprofit organizations to preserve, interpret, and display the history of the

historical resource. The applicant shall give representatives of these groups the opportunity to relocate the salvage signs for reuse in other locations.

Conclusion

Perry's Fuel & Feed Shed

Recordation through archival documentation (Mitigation Measure CR-1a), implementation of a permanent interpretive display (Mitigation Measure CR-1b), and architectural salvage and reuse (Mitigation Measure CR-1c) would each reduce the adverse impact of demolition by limiting the loss of historical information. However, it would not prevent the physical loss of a significant historical resource.

Significance with Mitigation: Significant and Unavoidable

Historic Signage

Recordation of the historic signage through archival documentation in accordance with Mitigation Measure CR-1d, and salvage and relocation in accordance with Mitigation Measure CR-1e would reduce the adverse construction impact that would result in the loss of historic materials and loss of historical information.

Significance with Mitigation: Less than significant.

CR-2	The project could cause a substantial adverse change in the significance of an archaeological resource pursuant to CEQA Guidelines Section 15064.5.
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The project would develop 540 multi-family residential units, approximately 530,000 square feet of office use, an 8,400 square-foot childcare facility, approximately 29,000 square feet of retail use, and approximately 40,000 square feet of public open space proposed throughout the site, and would include the necessary excavation and grading of the existing project site as detailed in Chapter 2, Project Description.

AECOM's subsurface investigations in a portion of the recorded boundaries of P-41-506 (CA-SMA-358/H) determined that the prehistoric and historic archaeological materials present in the project area are thoroughly roiled, and appear to have been deposited in this specific locale by previous grading and other earth moving activities. Therefore, as discussed previously, the portion of archaeological site CA-SMA-358/H in the project area is not a historical resource or a unique archaeological resource for the purposes of CEQA, and no impact would result. However, there nonetheless remains the possibility that previously unrecorded archaeological resources remain buried and undiscovered in the project area. The inadvertent discovery of an unknown archaeological resource represents a potentially significant impact on archaeological resources pursuant to Section 15064.5 of the CEQA Guidelines.

In the unlikely event that an archeological resource is discovered, appropriate measures would be implemented to minimize potential impacts. These measures listed below were included in the project's Initial Study to address potential impacts to Tribal Cultural Resources (Appendix IS).

Significance without Mitigation: Significant

Mitigation Measure TRIBAL-1: Procedures for Inadvertent Discovery of Cultural Resources.

In the event that sensitive cultural resources are identified during project site preparation or construction activities, work shall be halted until a qualified archaeologist is contacted and makes recommendations. Specifically, if deposits of prehistoric or historic archaeological resources are

encountered during project construction activities, all work within an appropriate buffer area around the discovery shall be stopped, and a qualified archeologist meeting federal criteria under 36 CFR 61 shall be contacted to assess the deposit(s) and make recommendations.

If deposits of prehistoric or historic archeological materials cannot be avoided by project activities, the City shall confirm that the project applicant has retained a qualified archaeologist to evaluate the potential historic significance of the resource(s). If the deposits are determined to be non-significant by a qualified archaeologist, avoidance is not necessary. If the deposits are determined to be potentially significant by the qualified archaeologist, the resources shall be avoided if feasible. If avoidance is not feasible, project impacts shall be mitigated in accordance with the recommendations of the archaeologist, in coordination with the City and CEQA Guidelines Section 15126.4 (b)(3)(C), which requires implementation of a data recovery plan. The data recovery plan shall include provisions for adequately recovering all scientifically consequential information from and about any discovered archaeological materials and include recommendations for the treatment of these resources. In-place preservation of the archaeological resources is the preferred manner of mitigating potential impacts, because it maintains the relationship between the resource and the archaeological context. In-place preservation also reduces the potential for conflicts with the religious or cultural values of groups associated with the resource. Other mitigation options include, but are not limited to, the full or partial removal and curation of the resource.

The City shall confirm that the project applicant has retained a qualified archeologist for the preparation and implementation of the data recovery plan, which shall be conducted prior to any additional earth-moving activities in the area of the resource. The recovery plan shall be submitted to the project applicant, the City, and the NWIC. Once the recovery plan is reviewed and approved by the City and any appropriate resource recovery completed, project construction activity within the area of the find may resume. A data recovery plan shall not be required for resources that have been deemed by the NWIC as adequately recorded and recovered by studies already completed.

Mitigation Measure TRIBAL-2: Worker Training

Prior to the issuance of grading permits, the City shall confirm the applicant has required all construction crews to undergo adequate training for the identification of federal- or state-eligible cultural resources; and that the construction crews are aware of the potential for previously undiscovered archaeological resources on-site, of the laws protecting these resources and associated penalties, and of the procedures to follow should they discover cultural resources during project-related work.

Implementation of Mitigation Measure TRIBAL-1 and TRIBAL-2 would identify and protect unknown cultural resources identified during construction, and as such reduce the potentially significant impact on archeological resources.

Significance with Mitigation: Less than significant.

3.3.6 Cumulative Impacts

CR-4	The project, combined with cumulative development, including past, present, and reasonably foreseeable future development, could result in a significant adverse cumulative cultural resources impact.
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Cumulative cultural resource impacts would occur when a series of separate and otherwise unrelated actions leads to the cumulative loss of a substantial type of site, building/structure/object, or resource.

The proposed project would contribute to cumulative impacts on cultural resources, if the proposed project and other projects in the City were to adversely impact the same resources. The geographic scope for cultural resource cumulative impacts is other projects in Redwood City.

Archaeology

The potential exists for the cumulative projects to encounter previously unidentified cultural resources, including archeological resources, during ground-disturbing activities. Disturbance of these resources during construction of the proposed project or other cumulative projects could result in significant cumulative impacts on archeological resources. The contribution of the proposed project could be cumulatively considerable. However, with implementation of Mitigation Measures TRIBAL-1 and TRIBAL-2, described above, the proposed project would not have a cumulatively considerable contribution to cumulative impacts on archeological resources.

Significance without Mitigation: Significant.

Mitigation Measure CR-4: Implement Mitigation Measures TRIBAL-1 and TRIBAL-2.

Significance with Mitigation: Less than significant.

Built Environment Historical Resources

Feed and fuel yards were once common business operated in this part of Redwood City. Based on a cursory desktop review of similar property types in Redwood City and the larger peninsula region, the J.B. Perry Fuel & Feed shed on the project site at 1401 Main Street appears to be the last of its kind. Another feed and fuel yard was located just northwest from the northern boundary of the project site, bound by Maple, Lathrop, Main, and Elm streets and the rail line. That business was established in the early twentieth century, and most of the buildings were demolished between 1963 and 1968. The cumulative loss of this type of historic resource is considered significant.

As discussed above, the proposed project would result in significant and unavoidable impact on the J.B. Perry Fuel & Feed Shed at 1401 Main Street through demolition of the historical resource. The building was identified almost 30 years ago as a rare, if not last of its kind, property type representative of the no longer extant fuel and feed industry in Redwood City and as good example of “fast-disappearing” functional, corrugated metal warehouses. Per the evaluation of the property (Basin Research Associates 1990) “the warehouse is a rare remnant of an important earlier phase of the region’s economy. It is also a good example of a fast-disappearing industrial building type: the functional, corrugated metal warehouse.”

Because the proposed project would result in the demolition of a rare, if not last of its kind, property type, the proposed project would make a substantial contribution to the cumulative impact identified above. As a result, project implementation would result in a significant cumulative impact. Similar to the project-level impact, there is no feasible mitigation to reduce the significant adverse effects of demolition of historical resources.

Significance without Mitigation: Significant.

Implement Mitigation Measure CR-1a, Mitigation Measure CR-1b, and Mitigation Measure CR-1c.

Significance with Mitigation: Significant and unavoidable.

3.3.7 References

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3.4 Greenhouse Gases Emissions

This section presents a summary of the existing science related to greenhouse gases (GHGs); overviews of state and local GHG emissions inventories, and of the existing regulatory context for GHGs; a summary of the methods used to estimate GHG emissions attributable to the proposed project; and an analysis of potential impacts of the proposed project related to GHG emissions.

Because no single project is large enough individually to result in a measurable increase in global concentrations of GHG emissions, global warming impacts of a project are considered on a cumulative basis. The analysis in this section is based on the methodology recommended by the Bay Area Air Quality Management District (BAAQMD). The project is evaluated using the BAAQMD's project-level review criteria, based on the preliminary information available.

3.4.1 Summary

The table below provides a summary of the impact discussion in Sections 3.4.5 and 3.4.6.

Table 3.4-1 Summary of Impact Findings – Greenhouse Gas Emissions

ENVIRONMENTAL ISSUES		Significant Unavoidable Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:					
GG-1	Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
GG-2	Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
GG-3	Would the project, in combination with past, present, and reasonably foreseeable projects, result in significant cumulative impacts with respect to greenhouse gas emissions?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

As indicated in Table 3.4-1, the proposed project would not generate GHG emissions, either directly or indirectly, that would have a significant impact on the environment; and the proposed project would not conflict with any state, regional, or local plans adopted for the purpose of reducing GHG emissions in a way that would generate any adverse impact. The proposed project's contribution to cumulatively significant impacts to global climate change would not be considerable. Specific to Parcel F, the Consistency Analysis provided in Appendix CNA confirmed that the proposed development for Parcel F would be consistent with the prior analysis and conclusion in the Downtown Precise Plan (DTPP) Program Environmental Impact Report (EIR) related to GHG emissions. Regardless, given the cumulative nature of GHG emissions, the analysis that follows reflects the potential GHG impacts that would result from Parcels A through E as well as Parcel F.

3.4.2 Glossary

The following are definitions for terms used throughout this section.

- **AB:** Assembly Bill
- **ABAG:** Association of Bay Area Governments
- **ARB:** Air Resources Board
- **BAAQMD:** Bay Area Air Quality Management District
- **CalEEMod:** California Emissions Estimator Model
- **Carbon dioxide-equivalent (CO₂e):** The standard unit to measure the amount of greenhouse gases in terms of the amount of CO₂ that would cause the same amount of warming. CO₂e is based on the global warming potential (GWP) ratios between the various GHGs relative to CO₂.
- **CAP:** Climate Action Plan
- **CCR:** California Code of Regulations
- **DOF:** Department of Finance
- **DTPP:** Downtown Precise Plan
- **EDD:** Employee Development Department
- **EIR:** environmental impact report
- **EPA:** United States Environmental Protection Agency
- **Global warming potential (GWP):** Metric used to describe how much heat a molecule of a greenhouse gas absorbs relative to a molecule of carbon dioxide (CO₂) over a given period of time (20, 100, and 500 years). CO₂ has a GWP of 1.
- **Greenhouse gases (GHG):** Gases in the atmosphere that absorb infrared light, thereby retaining heat in the atmosphere and contributing to a greenhouse effect.
- **IPCC:** Intergovernmental Panel on Climate Change
- **LCFS:** Low-Carbon Fuel Standard
- **MPO:** Metropolitan Planning Organization
- **MTC:** Metropolitan Transportation Commission
- **MT CO₂e:** Metric ton of CO₂e
- **MMT CO₂e:** million metric tons of CO₂e
- **PDA:** Priority Development Area
- **PG&E:** Pacific Gas and Electric Company

- **SANDAG:** San Diego Association of Governments
- **SB:** Senate Bill
- **SCS:** Sustainable Community Strategy
- **VMT:** vehicle miles traveled

3.4.3 Environmental Setting

3.4.3.1 Greenhouse Gases and Climate Change

Scientists have concluded that human activities are contributing to global climate change by adding large amounts of heat-trapping gases, known as GHGs, to the atmosphere. The primary source of these GHGs is fossil fuel use. The Intergovernmental Panel on Climate Change (IPCC) has identified four major GHGs—water vapor, carbon dioxide (CO₂), methane (CH₄), and ozone (O₃)—that are the likely cause of an increase in global average temperatures observed in the twentieth and twenty-first centuries. Other GHGs identified by the IPCC that contribute to global warming are nitrous oxide (N₂O), sulfur hexafluoride (SF₆), hydrofluorocarbons, perfluorocarbons, and chlorofluorocarbons (IPCC 2014). The following are the principal GHG pollutants that contribute to climate change that would be generated by project sources and their primary emission sources:

- **Carbon Dioxide (CO₂)** enters the atmosphere through the burning of fossil fuels (oil, natural gas, and coal), solid waste, trees and wood products, and respiration, and also as a result of other chemical reactions (e.g., manufacture of cement). Carbon dioxide is removed from the atmosphere (sequestered) when it is absorbed by plants as part of the biological carbon cycle.
- **Methane (CH₄)** is emitted during the production and transport of coal, natural gas, and oil. Methane emissions also result from livestock and other agricultural practices and from the decay of organic waste in municipal solid waste landfills.
- **Nitrous Oxide (N₂O)** is produced by both natural and human-related sources. Primary human-related sources of nitrous oxide are agricultural soil management, sewage treatment, mobile and stationary combustion of fossil fuel, and production of adipic and nitric acid. Nitrous oxide is also produced naturally from a wide variety of biological sources in soil and water, particularly microbial action in wet tropical forests.

Global warming potential (GWP) is a concept developed to compare the ability of each GHG to trap heat in the atmosphere relative to CO₂. The GWP of a GHG is based on several factors, including the relative effectiveness of a gas to absorb infrared radiation and length of time (i.e., lifetime) that the gas remains in the atmosphere (“atmospheric lifetime”). The reference gas for GWP is CO₂; therefore, CO₂ has a GWP of 1. The other main GHGs that have been attributed to human activity include CH₄, which has a GWP of 28, and N₂O, which has a GWP of 265 (EPA 2017). For example, one ton of CH₄ has the same contribution to the greenhouse effect as approximately 28 tons of CO₂. GHGs with lower emissions rates than CO₂ may still contribute to climate change because they are more effective at absorbing outgoing infrared radiation than CO₂ (i.e., high GWP). The concept of CO₂-equivalents (CO₂e) is used to account for the different GWP potentials of GHGs to absorb infrared radiation. Table 3.4-2 shows the various GHGs and their relative GWP compared to CO₂ in the most recent IPCC reports.

Table 3.4-2 GHG Emissions and Their Relative Global Warming Potential Compared to CO₂

GHGs	Second Assessment Report		Fourth Assessment Report		Fifth Assessment Report	
	Atmospheric Lifetime (Years)	Global Warming Potential ^a	Atmospheric Lifetime (Years)	Global Warming Potential ^a	Atmospheric Lifetime (Years)	Global Warming Potential ^a
Carbon Dioxide (CO ₂)	50 to 200	1	50 to 200	1	^b	1
Methane (CH ₄)	12(+/-3)	21	12	25	12.4	28
Nitrous Oxide (N ₂ O)	120	310	114	298	121	265

Notes:

a. Based on 100-year time horizon of the GWP of the air pollutant relative to CO₂.b. No single lifetime can be given for CO₂.

Source: IPCC 1995; IPCC 2007; IPCC 2014

Although the exact lifetime of any particular GHG molecule is dependent on multiple variables, it is understood by scientists who study atmospheric chemistry that more CO₂ is emitted into the atmosphere than is sequestered by ocean uptake, vegetation, and other forms of sequestration. GHG emissions related to human activities have been determined as “extremely likely” to be responsible (indicating 95% certainty) for intensifying the greenhouse effect, and leading to a trend of unnatural warming of the Earth’s atmosphere and oceans, with corresponding effects on global circulation patterns and climate (ARB 2014a). The quantity of GHGs that it takes to ultimately result in climate change is not precisely known; however, no single project is expected to measurably contribute to a noticeable incremental change in the global average temperature, or to a global, local, or micro climate.

California’s GHG Sources and Relative Contribution

In 2019, the statewide GHG emissions inventory was updated from 2000 to 2017 emissions. California produced 424.1 million metric tons (MMT) of CO₂e GHG emissions in 2017. California’s transportation sector was the single largest generator of GHG emissions, producing 41% of the state’s total emissions. The transportation category was followed by the industrial and electric power (including in-state and out-of-state sources) categories, which account for 24% and 15% of the state’s total GHG emissions, respectively (ARB 2019).

Human Influence on Climate Change

For approximately 1,000 years before the Industrial Revolution, the amount of GHGs in the atmosphere remained relatively constant. During the twentieth century, however, scientists observed a rapid change in the climate and the quantity of climate change pollutants in the Earth’s atmosphere that is attributable to human activities. The amount of CO₂ in the atmosphere has increased by more than 35% since preindustrial times, and has increased at an average rate of 1.4 parts per million per year since 1960, mainly due to combustion of fossil fuels and deforestation (IPCC 2007). These recent changes in the quantity and concentration of climate change pollutants far exceed the extremes of the ice ages, and the global mean temperature is warming at a rate that cannot be explained by natural causes alone. Human activities are directly altering the chemical composition of the atmosphere through the buildup of climate change pollutants (California Climate Action Team 2006). In the past, gradual changes in the Earth’s temperature changed the distribution of species, availability of water, etc. However, human activities are accelerating this process so that environmental impacts associated with climate change no longer occur in a geologic timeframe, but within a human lifetime (IPCC 2007).

Like the variability in the projections of the expected increase in global surface temperatures, the environmental consequences of gradual changes in the Earth's temperature are hard to predict. Projections of climate change depend heavily on future human activity. Therefore, climate models are based on different emission scenarios that account for historical trends in emissions, and on observations of the climate record that assess the human influence of the trend and projections for extreme weather events. Climate-change scenarios are affected by varying degrees of uncertainty. For example, there are varying degrees of certainty on the magnitude of the trends for:

- Warmer and fewer cold days and nights over most land areas.
- Warmer and more frequent hot days and nights over most land areas.
- An increase in frequency of warm spells/heat waves over most land areas.
- An increase in frequency of heavy precipitation events (or proportion of total rainfall from heavy falls) over most areas.
- Larger areas affected by drought.
- Intense tropical cyclone activity increases.
- Increased incidence of extreme high sea level (excluding tsunamis).

3.4.3.2 Regulatory Framework

This section summarizes key federal, state, regional, and City regulations and programs related to GHG emissions resulting from the proposed project.

Federal GHG Emissions Laws

The U.S. Environmental Protection Agency (EPA) is responsible for implementing the federal Clean Air Act (CAA). On April 2, 2007, the U.S. Supreme Court held that EPA must consider regulation of GHG emissions from motor vehicles. In *Massachusetts v. Environmental Protection Agency et al.*, 12 states and cities (including California) along with several environmental organizations sued to require EPA to regulate GHGs as pollutants under the CAA (127 S. Ct. 1438 [2007]). The Supreme Court ruled that GHGs fit within the CAA's definition of a pollutant, and that EPA has the authority to regulate GHGs.

Mandatory Reporting Rule for GHGs

On September 22, 2009, EPA published the Final Mandatory Greenhouse Gas Reporting Rule (Reporting Rule) in the Federal Register. The Reporting Rule requires reporting of GHG data and other relevant information from fossil fuel and industrial GHG suppliers, vehicle and engine manufacturers, and all facilities that would emit 25,000 MT or more of CO₂e per year. Facility owners are required to submit an annual report with detailed calculations of facility GHG emissions on March 31 for emissions from the previous calendar year. The Reporting Rule also mandates recordkeeping and administrative requirements to enable EPA to verify the annual GHG emissions reports.

State Regulations

The legal framework for GHG emission reductions has come about through executive orders, legislation, and regulations. The major components of California's climate change initiatives are outlined below. The Air Resources Board (ARB) is the agency responsible for coordination and oversight of state and local air pollution control programs in California, and for implementing the California CAA.

Assembly Bill 1493

Assembly Bill (AB) 1493, signed in July 2002, requires ARB to develop and implement regulations to reduce automobile and light-truck GHG emissions. These stricter emissions standards were designed to apply to automobiles and light trucks beginning with model year 2009. In June 2009, the EPA Administrator granted a CAA waiver of preemption to California. This waiver allowed California to implement its own GHG emissions standards for motor vehicles, beginning with model year 2009. California agencies worked with federal agencies to conduct joint rulemaking to reduce GHG emissions for passenger car model years 2017 through 2025. On September 19, 2019, the EPA issued a press release announcing the formal waiver revocation. In response, California and 23 other states and the cities of Los Angeles and New York filed a lawsuit against the National Highway Traffic Safety Administration (ARB 2019).

Executive Order S-03-05

Executive Order S-3-05, signed in June 2005, proclaimed that California is vulnerable to the impacts of climate change. Executive Order S-3-05 declared that increased temperatures could reduce the Sierra Nevada's snowpack, further exacerbate California's air quality problems, and potentially cause a rise in sea levels. To combat those concerns, the executive order established total GHG emissions targets. Specifically, emissions are to be reduced to the 2000 level by 2010, the 1990 level by 2020, and to 80% below the 1990 level by 2050. The statewide GHG emissions in 2000 were approximately 466 MMT CO₂e (ARB 2014b). In 2010, overall statewide GHG emissions were approximately 453 MMT CO₂e, which is less than the 2010 goal established by Executive Order S-3-05 (ARB 2014b). California is currently on track to decrease emissions below the 2020 climate target (ARB 2017).

Assembly Bill 32, the Global Warming Solutions Act (2006)

In 2006, California passed the California Global Warming Solutions Act of 2006 (AB 32; California Health and Safety Code Division 25.5, Sections 38500, et seq.). AB 32 further details and puts into law the mid-term GHG reduction target established in Executive Order S-3-05: reduce GHG emissions to 1990 levels by 2020. AB 32 also identifies ARB as the state agency responsible for the design and implementation of emissions limits, regulations, and other measures to meet the target. AB 32 also established several programs to achieve GHG emission reductions, including the Low Carbon Fuel Standard and the Cap-and-Trade program. As of 2017, the state has reduced emissions below the revised AB 32 limit of 427 MMT CO₂e.

California Air Resources Board 2008 Scoping Plan

In December 2008, ARB adopted the Climate Change Scoping Plan (Scoping Plan), which includes California's main strategies for achieving the GHG reductions required by AB 32 (ARB 2008). The Scoping Plan also includes ARB-recommended GHG reductions for each emissions sector of California's GHG inventory. ARB acknowledges that land use planning decisions will have large impacts on the GHG emissions that will result from the transportation, housing, industry, forestry, water, agriculture, electricity, and natural gas emissions sectors.

First Update to the Scoping Plan

ARB is required to update the Scoping Plan at least once every 5 years to evaluate progress and develop future inventories that may guide this process. ARB approved the First Update to the Climate Change Scoping Plan: Building on the Framework (2014 Scoping Plan Update) in June 2014 (ARB 2014a). The 2014 Scoping Plan Update includes a status of the 2008 Scoping Plan measures and other federal, state, and local efforts to reduce GHG emissions in California, and potential actions to further reduce GHG

emissions by 2020. The 2014 Scoping Plan Update determined that the state is on schedule to achieve the 2020 target (i.e., 1990 levels by 2020). However, an accelerated reduction in GHG emissions is required to achieve the Executive Order S-3-05 emissions reduction target of 80% below 1990 levels by 2050.

Executive Order S-1-07

Executive Order S-1-07, which was signed by then California governor Arnold Schwarzenegger in 2007, proclaims that the transportation sector is the main source of GHG emissions in California, at more than 40% of statewide emissions. Executive Order S-1-07 establishes a goal that the carbon intensity of transportation fuels sold in California should be reduced by a minimum of 10% by 2020. ARB adopted the low-carbon fuel standard (LCFS) on April 23, 2009. In November 2015, the Office of Administrative Law approved re-adoption of the LCFS.

Executive Order B-30-15

In April 2015, Governor Edmund G. Brown Jr. issued an executive order establishing a statewide GHG reduction goal of 40% below 1990 levels by 2030. The emission reduction target acts as an interim goal between the AB 32 goal (i.e., achieve 1990 emission levels by 2020) and the goal in Governor Brown's Executive Order S-3-05 of reducing statewide emissions 80% below 1990 levels by 2050. In addition, the executive order aligns California's 2030 GHG reduction goal with the European Union's reduction target (i.e., 40% below 1990 levels by 2030) that was adopted in October 2014.

Senate Bill 32 and Assembly Bill 197

Approval of Senate Bill (SB) 32 in September 2016 extended the provisions of AB 32 from 2020 to 2030, with a new target of 40% below 1990 levels by 2030. The companion bill, AB 197, added two nonvoting members to ARB; created the Joint Legislative Committee on Climate Change Policies, consisting of at least three senators and three Assembly members; required additional annual reporting of emissions; and required that Scoping Plan updates include alternative compliance mechanisms for each statewide reduction measure, along with market-based compliance mechanisms and potential incentives.

2017 Climate Change Scoping Plan

The statewide measures adopted under the direction of AB 32, and as outlined in the Scoping Plan, would reduce GHG emissions associated with existing and new development. In November 2017, ARB released *California's 2017 Climate Change Scoping Plan: The Strategy for Achieving California's 2030 Greenhouse Gas Target* (2017 Scoping Plan Update) (ARB 2017). The 2030 target of a 40% reduction in GHG emissions below 1990 statewide GHG emissions (consistent with Executive Order B-30-15, which is outlined above) guides the 2017 Scoping Plan Update (ARB 2017). The 2017 Scoping Plan Update establishes a plan of action consisting of a variety of strategies to be implemented, rather than a single solution, for California to reduce statewide emissions by 40% by 2030 compared to 1990 levels (ARB 2017).

Senate Bill 375

SB 375, signed by the Governor in September 2008, aligned regional transportation planning efforts, regional GHG reduction targets, and land use and housing allocation. SB 375 required metropolitan planning organizations (MPOs) to adopt a sustainable communities strategy that would prescribe land use allocation in that MPO's regional transportation plan. ARB adopted regional GHG targets for passenger vehicles and light trucks for 2020 and 2035 for the 18 MPOs in California. If the combination of

measures in the Sustainable Community Strategies (SCS) would not meet the regional targets, the MPO must prepare a separate “alternative planning strategy” to meet the targets.

The ARB is required to update the targets for the MPOs every 5 years. In June 2017, the ARB released updated targets and technical methodology. The updated targets consider the need to further reduce Vehicle Miles Traveled (VMT), as identified in the 2017 Scoping Plan Update (for SB 32), while balancing the need for additional and more flexible revenue sources to incentivize positive planning and action toward sustainable communities. Like the 2010 targets, the updated SB 375 targets are in units of percent per capita reduction in GHG emissions from automobiles and light trucks relative to 2005; this excludes reductions anticipated from implementation of State technology and fuels strategies, and any potential future State strategies such as statewide road-user pricing. The proposed targets call for greater per capita GHG emission reductions from SB 375 than are currently in place; which for 2035, translate into proposed targets that either match or exceed the emission reduction levels contained in the MPOs' currently adopted SCSs (discussed below) to achieve the SB 375 targets.

For the next round of SCS updates, the ARB's updated targets for the Metropolitan Transportation Commission (MTC)/Association of Bay Area Governments (ABAG) region are a 10% per capita GHG reduction in 2020 from 2005 levels (compared to 7% under the 2010 target), and a 19% per capita GHG reduction in 2035 from 2005 levels (compared to the 2010 target of 15% (ARB, 2018)). The updated targets and methodology took effect on October 1, 2018, and SCS adopted in 2018 and later would be subject to these new targets (ARB 2018).

Senate Bills 1078, 107, X1-2, 350, 100 and Executive Orders S-14-08 and S-21-09

California established aggressive renewables portfolio standards (RPS) under SB 1078 (Chapter 516, Statutes of 2002) and SB 107 (Chapter 464, Statutes of 2006), which require retail sellers of electricity to provide at least 20% of their electricity supply from renewable sources by 2010. EO S-14-08 (November 2008) expanded the State's RPS from 20% to 33% of electricity from renewable sources by 2020. In September 2009, Governor Schwarzenegger continued California's commitment to the RPS by signing EO S-21-09, which directed ARB to enact regulations to help California meet the RPS goal of 33% renewable energy by 2020 (CEC 2019). In April 2011, Governor Brown signed SB X1-2 (Chapter 1, Statutes of 2011), codifying the GHG reduction goal of 33% by 2020 for energy suppliers. This RPS preempts ARB's electricity standard of 33% renewable sources, and applies to all electricity suppliers (not just retail sellers) in the state, including publicly owned utilities, investor-owned utilities, electricity service providers, and community choice aggregators. SB X1-2 specified that all of these entities would have to adopt the new RPS goals of 20% of retail sales from renewable sources by the end of 2013, 25% by the end of 2016, and 33% by the end of 2020 (CEC 2019). Eligible renewable sources include geothermal, ocean wave, solar photovoltaic, and wind; but exclude large hydroelectric (30 megawatts or more).

SB 350 (Chapter 547, Statutes of 2015), signed by Governor Brown in October 2015, dramatically increased the stringency of the RPS. SB 350 establishes a target for the RPS of 50% by 2030, along with interim targets of 40% by 2024 and 45% by 2027. This was followed by SB 100 in 2018, which further increased the RPS target to 60% by 2030, along with the requirement that all state's electricity come from carbon-free resources by 2045.

California Building Code: Building Energy Efficiency Standards

Energy conservation standards for new residential and non-residential buildings were adopted by the California Energy Resources Conservation and Development Commission (now the California Energy Commission) in June 1977, and most recently revised in 2019 (Title 24, Part 6, of the California Code of Regulations [CCR]). Title 24 requires the design of building shells and building components to conserve energy. The standards are updated periodically to allow for consideration and possible incorporation of

new energy efficiency technologies and methods. On June 10, 2015, the Energy Commission adopted the 2016 Building Energy Efficiency Standards, which went into effect on January 1, 2017. The 2019 Building Energy Efficiency Standards, which were adopted on May 9, 2018, go into effect January 1, 2020.

The 2016 Standards continue to improve on the previous 2013 Standards for new construction of and additions and alterations to residential and nonresidential buildings. Under the 2016 Standards, residential and nonresidential buildings are 28% and 5% more energy efficient than the 2013 Standards, respectively (CEC 2015). Buildings that are constructed in accordance with the 2013 Building Energy Efficiency Standards are 25% (residential) to 30% (nonresidential) more energy efficient than the prior 2008 standards because of better windows, insulation, lighting, ventilation systems, and other features. Although the 2016 Standards do not achieve zero net energy, they do get very close to the State's goal, and make important steps toward changing residential building practices in California.

The 2019 Standards cut energy use in new homes by more than 50%, and will require installation of solar photovoltaic systems for single-family homes and multi-family buildings of three stories and less. Four focus areas of the 2019 standards are: (1) smart residential photovoltaic systems; (2) updated thermal envelope standards (preventing heat transfer from the interior to exterior and vice versa); (3) residential and nonresidential ventilation requirements; and (4) nonresidential lighting requirements (CEC 2018a). Under the 2019 Standards, nonresidential buildings will be 30% more energy efficient than under the 2016 Standards, and single-family homes will be 7% more energy efficient (CEC 2018a). When accounting for the electricity generated by the solar photovoltaic system, single-family homes would use 53% less energy compared to homes built to the 2016 Standards (CEC 2018a).

California Building Code: CALGreen

On July 17, 2008, the California Building Standards Commission adopted the nation's first green building standards. The California Green Building Standards Code (24 CCR, Part 11, known as "CALGreen") was adopted as part of the California Building Standards Code. CALGreen established planning and design standards for sustainable site development, energy efficiency (in excess of the California Energy Code requirements), water conservation, material conservation, and internal air contaminants. The mandatory provisions of the California Green Building Code Standards became effective January 1, 2011, and were last updated in 2016. The 2016 Standards became effective on January 1, 2017. The CEC adopted the 2019 CALGreen on May 9, 2018. The 2019 CALGreen standards became effective January 1, 2020.

2006 Appliance Efficiency Regulations

The 2006 Appliance Efficiency Regulations (20 CCR Sections 1601–1608) were adopted by the Energy Commission on October 11, 2006; and approved by the California Office of Administrative Law on December 14, 2006. The regulations include standards for both federally regulated appliances and nonfederally regulated appliances. These regulations exceed the standards imposed by all other states, and they reduce GHG emissions by reducing energy demand.

Solid Waste Regulations

California's Integrated Waste Management Act of 1989 (AB 939, Public Resources Code Section 40050 et seq.) set a requirement for cities and counties throughout the state to divert 50% of all solid waste from landfills by January 1, 2000, through source reduction, recycling, and composting. In 2008, the requirements were modified to reflect a per capita requirement rather than tonnage. To help achieve this, the act requires that each city and county prepare and submit a source reduction and recycling element. AB 939 also established the goal for all California counties to provide at least 15 years of ongoing landfill capacity.

AB 341 (Chapter 476, Statutes of 2011) increased the statewide goal for waste diversion to 75% by 2020, and requires recycling of waste from commercial and multi-family residential land uses.

The California Solid Waste Reuse and Recycling Access Act (AB 1327, Public Resources Code Section 42900 et seq.) requires areas to be set aside for collecting and loading recyclable materials in development projects. The act required the California Integrated Waste Management Board to develop a model ordinance for adoption by any local agency requiring adequate areas for collection and loading of recyclable materials as part of development projects. Local agencies are required to adopt the model or an ordinance of their own.

Section 5.408 of the 2016 California Green Building Standards Code also requires that at least 65% of the nonhazardous construction and demolition waste from nonresidential construction operations be recycled and/or salvaged for reuse.

On June 27, 2012, Governor Brown signed SB 1018, which became effective on July 1, 2012, and requires businesses that generate 4 cubic yards of commercial solid waste per week to arrange for recycling services. Additionally, in October 2014, Governor Brown signed AB 1826, requiring businesses to recycle their organic waste on and after April 1, 2016, depending on the amount of waste they generate per week. This law also requires that on and after January 1, 2016, local jurisdictions across the state implement an organic waste recycling program to divert organic waste generated by businesses and multi-family residential dwellings that consist of 5 or more units. Organic waste means food waste, green waste, landscape and pruning waste, nonhazardous wood waste, and food-soiled paper waste that is mixed in with food waste.

Regional Regulations

SB 375 aligned regional transportation planning efforts, regional GHG reduction targets, and land use and housing allocation. SB 375 required MPOs to adopt a sustainable communities strategy that will prescribe land use allocation in that MPO's regional transportation plan. *Plan Bay Area 2040* is the Bay Area's Regional Transportation Plan/SCS. *Plan Bay Area 2040* was adopted jointly by ABAG and MTC on July 26, 2017. *Plan Bay Area 2040* lays out a development scenario for the region, which, when integrated with the transportation network and other transportation measures and policies, would reduce GHG emissions from transportation (excluding goods movement) beyond the per capita reduction targets identified by the ARB. *Plan Bay Area 2040* is a limited and focused update to the 2013 *Plan Bay Area*, with updated planning assumptions that incorporate key economic, demographic, and financial trends from the last several years. *Plan Bay Area 2040* remains on track to meet a 16% per capita reduction of GHG emissions by 2035, and a 10% per capita reduction by 2020 from 2005 conditions (MTC and ABAG, 2017).

As part of the implementing framework for *Plan Bay Area*, local governments have identified Priority Development Areas (PDAs) to focus growth in transit-oriented, infill development opportunity areas in existing communities. PDAs are expected to accommodate 77% (or over 629,000 units) of new housing and 55% (or 707,000) of new jobs in the region (MTC and ABAG 2017). The project site is in the El Camino Corridor (Redwood City) PDA (ABAG 2019).

Local Regulations

The City of Redwood City Climate Action Plan (CAP) was adopted in 2013, and identifies a variety of areas and opportunities to reduce GHG emissions in the community and municipal operations (Redwood City 2013). The CAP establishes an overall reduction target of 15% below year 2005 levels by year 2020, which is consistent with the overall statewide reduction target under AB 32. Additionally, the CAP also recommends the following:

- Achieve a 15% energy use reduction compared with Title 24 in residential and commercial new construction with adopted and updated Green Building Codes.
- Achieve a 15% energy use reduction in existing residential buildings and commercial facilities by targeting a 20% participation rate in residential and commercial energy audit, rebate and incentive, and upgrade programs.
- Achieve a 5% energy use reduction in commercial facilities participating in the upcoming Green Business Program with an overall 20% participation rate.
- Achieve a 15% energy use reduction in targeted municipal facilities by performing energy audits and upgrades on half the existing square footage.
- Replace half the existing unmetered streetlights with more energy-efficient LED lighting, and document the energy and cost savings.
- Install over 900 kilowatts of solar power generation capacity for municipal facilities.
- Achieve a 22% reduction in water consumption through water-efficient appliances and fixture rebates, adopted water ordinances, and the ongoing Recycled Water Project.
- Implement the Regional Bicycle Share and Last Mile Connection Pilot Programs, and document the emissions impacts.
- Complete the bikeways identified for Redwood City in the San Mateo County Comprehensive Bicycle and Pedestrian Plan, and increase local bikeways.
- Achieve up to an 8% reduction in VMT by updating parking policies and management strategies, including the Downtown Parking Management Plan.
- Achieve and document an overall 5% participation rate in the Employee Commute Program.
- Achieve an 85% solid waste diversion rate through a single-use bag ordinance, commercial recycling, construction and demolition recycling, and yard waste recycling.

To meet this overall 15% reduction target, the CAP includes 15 specific reduction measures that focus on reducing GHG emissions associated with the energy, transportation and land use, and waste sectors (Table 3.4-3). These measures were selected from a set of 39 measures developed for jurisdictions in the San Mateo County region by the City and County Association of Governments (C/CAG), and promoted through the Countywide Regionally Integrated Climate Action Planning Suite initiative (Redwood City 2013).

In 2018, the City of Redwood City began a 2030 CAP update process to address the State targets of achieving 40% reduction below 1990 GHG levels by 2030, and an 80% reduction below 1990 levels by 2050. The draft 2030 CAP was available for public review through November 25, 2019. The draft 2030 CAP has not been adopted at the time of this DEIR.

Table 3.4-3 Redwood City Climate Action Plan Reduction Measures

Number	Category	Applicability	Description
1	Energy	Municipal	Audit City facilities for energy efficiency opportunities and implement energy efficient retrofits.
2	Energy	Municipal	Replace street, parks, and parking lot lighting with efficient lighting (LEDs, induction, etc.)
3	Energy	Municipal	Complete installation of solar and other renewable energy projects at select City facilities (such as the wastewater treatment plant) and install where feasible. Set installation goal of 900 kilowatts.
4	Transportation and Land Use	Municipal	Monitor and evaluate commute alternatives program to determine participation rates and opportunities to increase participation.
5	Solid Waste	Municipal & Community	Increase participation in recycling programs and ensure weekly collection of recyclables and organic waste to achieve an 85% waste diversion goal by 2020.
6	Energy	Community	Update building code to mandate higher building performance in commercial buildings. Mandate achievement of CALGreen Tier 1 energy performance. Consider additional mandatory requirements such as solar hot water or cool roofs. Seek to harmonize with regional Green Building Ordinances.
7	Energy	Community	Update building code to mandate higher building performance in residential buildings. Mandate achievement of CALGreen Tier 1 energy performance. Consider additional mandatory requirements such as solar hot water or cool roofs. Seek to harmonize with regional Green Building Ordinances.
8	Energy	Community	Provide or encourage residential energy audits and retrofits, promote existing Federal, State, and utility rebates and incentive programs, and participate in additional programs as they become available.
9	Energy	Community	Promote and assist with marketing and outreach for PG&E energy efficiency and demand response programs for the nonresidential sector. Leverage existing rebates/add additional rebates for energy efficient retrofits.
10	Energy	Community	Resume the Green Business Program, which allows local businesses to brand as green by following sustainable practices.
11	Energy	Community	Adopt Bay Area Water Supply and Conservation Agency (BAWSCA) Indoor Ordinance and enhance BAWSCA Outdoor Ordinance as part of Green Building Codes update in 2014.
12	Transportation and Land Use	Community	Continue to implement the policies and programs in City planning documents (e.g., General Plan, Downtown Precise Plan (Downtown Plan), Zoning Code) to prioritize infill, higher-density, transportation oriented and mixed-use development.
13	Transportation and Land Use	Community	Remake urban landscape to make walking and biking more desirable. Add bike lanes, bike parking, and traffic calming measures according to County and City bike plans.
14	Transportation and Land Use	Community	Pilot Regional Bicycle Share and Last Mile Connection programs.
15	Transportation and Land Use	Community	Establish parking policies to increase use of walking, public transit, and bicycling.

3.4.3.3 Existing Conditions

Table 3.4-4 shows the GHG emissions associated with the existing land uses currently operating on Parcels A through E and Parcel F. The existing uses on site include auto sales, repair, and warehouse space, including one multi-tenant residential building owned by the City of Redwood City, and a former indoor roller rink. The analysis conservatively assumed there are no existing stationary sources.

Table 3.4-4 Existing Operational GHG Emissions

Source	Annual GHG Emissions (MT CO ₂ e)
Area	1
Energy	404
Mobile	972
Waste	155
Water/Wastewater	38
Total Existing Annual GHG Emissions	1,571

Notes: Estimated by AECOM in 2019.

GHG =greenhouse gas

MT CO₂e = metric tons carbon dioxide equivalents

3.4.4 Standards of Significance

Based on Appendix G of the State CEQA Guidelines, the proposed project would result in a significant impact related to GHG emissions if it would:

1. Directly or indirectly generate GHG emissions that may have a significant impact on the environment.
2. Conflict with an applicable plan, policy, or regulation of an agency adopted for the purpose of reducing the emissions of greenhouse gases.
3. In combination with past, present, and reasonably foreseeable projects, result in significant cumulative impacts with respect to greenhouse gas emissions.

According to the BAAQMD 2017 CEQA Guidelines, if a project is within the jurisdiction of an agency that has a “qualified” GHG reduction strategy, the project can assess consistency of its GHG emissions impacts with the reduction strategy (BAAQMD 2017). The City of Redwood City does not have a qualified GHG reduction strategy. Therefore, the following BAAQMD GHG threshold of significance of 4.6 MT CO₂e per service population,⁸ with appropriate updates to this threshold to focus on relevant emissions sources and consider longer-term (post-2020) State emissions goals, was used for the analysis.

To achieve the goals of AB 32 and SB 32, which are tied to GHG emission levels of a specific benchmark year (i.e., 1990), California would have to achieve a lower rate of emissions per unit of population (per person) and/or per level of economic activity (e.g., per job) than its current rate. The “per service population” metric represents the rate of emissions needed to achieve a fair share of California’s emission reduction mandate. Fair share indicates the level of GHG efficiency that, if applied statewide or to a defined geographic area, such as the project, would meet the State’s emissions targets.

⁸ Per-service population emissions are total emissions divided by the residential population plus the employment accommodated by the project or plan.

The 4.6 MT CO₂e per service population BAAQMD threshold was developed based on dividing the statewide GHG emissions target goal (from applicable land use sectors) by the estimated 2020 population and employment, thereby determining the level of GHG efficiency for projects that would achieve the goals of AB 32. However, the proposed project would begin construction in 2020; therefore, project emissions should also be analyzed in the SB 32 statewide framework (which established a 2030 GHG emissions reduction target of 40% below 1990 levels). The BAAQMD has not adopted a service population efficiency metric or threshold of significance consistent with SB 32 goals. To provide this additional information to put the project-generated GHG emissions in the appropriate statewide context, this analysis updates the service population threshold that would meet the State's 2030 emissions targets.

To develop the service population efficiency metric or threshold for the proposed project, land use–related sectors in the Scoping Plan were identified, and GHG emissions were separated to tailor the inventory to emission sources relevant to the proposed project. This exercise was completed to identify the emissions sources over which the proposed project can have some influence through planning and development approval. Emission sources that would not be produced by the proposed project would not be included in the development of the GHG efficiency threshold. For example, this approach would exclude emissions associated with industrial, agriculture, ships and commercial boats, and other sources not associated with project activities.

Tailoring the reduction target to the specific local context speaks to the direction from the California Supreme Court's 2015 decision in *Center for Biological Diversity v. California Department of Fish and Wildlife*,⁹ commonly referred to as "Newhall Ranch." In Newhall Ranch, the Court indicated that the use of a state-legislation-based significance threshold could be acceptable, so long as the administrative record supports how this threshold is appropriate for a specific project at a specific location. The following tables and paragraphs provide further detail on tailoring state guidance to local conditions.

If the project GHG emissions per service population are less than the efficiency threshold developed with the statewide 2030 target in mind, the impact would be less than cumulatively considerable. Table 3.4-5 presents a revised version of the 1990 statewide emissions that includes only the sectors and subsectors relevant to the proposed project.

The statewide inventory was tailored to emissions sources that are relevant to the proposed project so that the project's emissions in future years can be compared with California's own targets for the relevant land uses—namely for 2030, under SB 32. After culling the emissions sources to those that are relevant for the proposed project, the second step is developing an appropriate "rate" of emissions. In this case, because the proposed project is a mixed-use project (would have both a residential component and an employment component), "service population" was the selected metric used to convert mass emissions to a rate of emissions.

California has mass emissions targets for future years. State agencies also forecast future residential population and employment for future years. If one simply divides the mass emissions target by the total residential population and employment, this yields emissions "budget" per population plus employment that is consistent with state GHG goals. If a project has a rate of GHG emissions per service population that is equal to, or less than the State's GHG rate for future years, then that project can demonstrate consistency with the State's GHG goals.

⁹ 62 Cal. 4th 204.

Table 3.4-5 Adjusted Statewide Emissions Inventory – Land Use–Related Sectors

Main Sector/Sub-Sector Level 1	Total Emissions (MMT CO ₂ e/yr) ¹	Adjusted Land Use-Related Emissions (MMT CO ₂ e/yr)	Notes/Adjustments
Agriculture & Forestry	18.9	0.0	Not included in land use sector
Commercial	14.4	13.9	Excludes National Security emissions from Sub-Sector Level 1
Electricity Generation (Imports)	61.5	61.5	Land use sector includes all emissions
Electricity Generation (In State)	49.0	34.4	Excludes CHP: Industrial from Sub-Sector Level 1
Industrial	105.3	11.7	Industrial emissions excluded from land use sector, except as described in sub-sectors below
CHP: Industrial	9.7	0.0	Not included in land use sector
Flaring	0.1	0.0	Not included in land use sector
Landfills	7.4	7.4	Land use sector includes all emissions
Manufacturing	32.1	0.7	<i>Construction emissions from Sub-Sector Level 2 included in land use sector</i>
Mining	0.0	0.0	Not included in land use sector
Not Specified	2.7	0.0	Not included in land use sector
Oil & Gas Extraction	14.8	0.0	Not included in land use sector
Petroleum Marketing	0.0	0.0	Not included in land use sector
Petroleum Refining	32.8	0.0	Not included in land use sector
Pipelines	1.9	0.0	Not included in land use sector
Wastewater Treatment	3.6	3.6	<i>Wastewater treatment emissions are included</i>
Not Specified	1.3	1.3	Land use sector includes all emissions
Residential	29.7	29.7	Land use sector includes all emissions
Transportation	150.6	140.9	Excludes Aviation, Rail, and Water-borne emissions from Subsector Level 1
Total	431.0	293.5	

Notes: Sectors/sub-sectors may not sum exactly due to rounding

¹ California 1990 Greenhouse Gas Emissions Level and 2020 Limit, ARB: <<http://www.arb.ca.gov/cc/inventory/1990level/1990level.htm>>

In this case, if the project's emissions rates are consistent with the State's goals, it can be concluded that implementation of the proposed project would make substantial progress toward the State's 2030 goals, and set a trajectory that is consistent with the State's 2050 goal. The application of an efficiency-based metric as described herein is consistent with the discussion in ARB's 2017 Scoping Plan (ARB 2017) of the importance of GHG efficiency in land use planning. The 2017 Scoping Plan provides the following guidance on the application of an efficiency-based metric:

"Since the statewide per capita targets are based on the statewide GHG emissions inventory that includes all emissions sectors in the State, it is appropriate for local jurisdictions to derive evidence based on local per capita goals based on local emissions sectors and population projections that are consistent with the framework used to develop the statewide per capita targets. The resulting GHG emissions trajectory should show a downward trend consistent with the statewide objectives."

Table 3.4-6 shows the estimated statewide land use-related GHG emissions per service population through 2030. The GHG emissions target for the proposed project in 2030 was developed to demonstrate consistency with the State's 2030 target. The State's mass emissions goals for 2030 have been adjusted to focus only on emissions sources relevant to the proposed project. Then, these mass emissions goals are divided by the State's forecast population and employment in 2030 to create an emissions "budget" per service population (which is residential population + employment).

**Table 3.4-6 Local Service Population Efficiency 2030 Target
(based on project-specific land uses)**

	2030
Emissions Targets (MT CO ₂ e/yr)	176,082,940
Population ¹	43,631,295
Employment ^{2,3}	20,613,033
Service Population (SP)	64,244,328
Emissions per Service Population (MT CO ₂ e)	2.74

Notes: Estimated by AECOM in 2019.

¹ Department of Finance (DOF) Total Estimated and Projected Population for California and Counties: July 1, 2010 to July 1, 2060 in 1-year increments. December 2019. Available online at: <<http://www.dof.ca.gov/Forecasting/Demographics/projections/>>

² Employee Development Department (EDD) Employment Projections. Available online at: <<http://www.labormarketinfo.edd.ca.gov/data/employment-projections.html>>. Sorted to remove jobs from: 11-9013 Farmers, Ranchers, and Other Agricultural Managers; 19-1032 Foresters; 19-4041 Geological and Petroleum Technicians; 19-4093 Forest and Conservation Technicians; 45-000 Farming, Fishing, and Forestry Occupations; 47-5000 Extraction Workers; 49-3011 Aircraft Mechanics and Service Technicians; 49-3041 Farm Equipment Mechanics and Service Technicians; 49-9041 Industrial Machinery Mechanics; 49-9043 Maintenance Workers, Machinery; 49-9044 Millwrights; 51-0000 Production Occupations; 53-2000 Air Transportation Workers; 53-4000 Rail Transportation Workers; and 53-5000 Water Transportation Workers.

³ EDD provides 2- and 10-year employment estimates that currently extend to 2026, so the ratio of employment to population estimated in 2026 (i.e., 47.2%) was applied to the DOF population estimates for 2030 to estimate employment in those years.

MT CO₂e = metric tons of carbon dioxide equivalent; SP = service population

After 2030, GHG emissions will continue to decrease due to a mix of voluntary, incentive-based, and regulatory actions, such as tailpipe exhaust requirements and renewable electricity and zero carbon electricity generation requirements. As discussed above, Executive Order S-3-05 established a total GHG emissions target of 80% below the 1990 level by 2050. However, as explained in *Cleveland National Forest Foundation, et al. v. San Diego Association of Governments* (2017), SANDAG has concluded that "there are presently no reliable means of forecasting how future technological developments or state legislative actions to reduce greenhouse gas emissions may affect future emissions in any one planning

jurisdiction...lead agencies can only guess how future technical developments or state (or federal or international) actions may affect emissions from the myriad of sources beyond their control.” As reported by the Court in this decision, “CEQA does not require analysis of potential impacts from possible future development that are too speculative to evaluate.” The Court determined in this case that SANDAG did not abuse its discretion in declining to adopt a 2050 reduction goal.

Construction activities associated with the proposed project would also generate GHG emissions from the use of construction equipment, haul trucks, and worker vehicles. The BAAQMD has not adopted thresholds for evaluating GHG emissions from construction activities. Nevertheless, the BAAQMD recommends that the lead agency quantify and disclose GHG emissions that would occur during construction, and make a determination on the significance of these construction-generated GHG emission impacts in relation to meeting AB 32 GHG reduction goals. Direct comparison of construction GHG emissions with long-term thresholds would not be appropriate because these emissions cease on completion of construction. Other districts (e.g., Sacramento Metropolitan Air Quality Management District [2018, South Coast Air Quality Management District [2008]) recommend that construction emissions associated with a project be amortized over the life of the project (typically assumed to be 30 years). Therefore, this analysis includes a quantification of the total construction-related GHG emissions. Those emissions are then amortized over the life of the project (assumed to be 30 years) and added to the operational emissions associated with the project for comparison with the BAAQMD threshold and the updated threshold designed for this analysis.

3.4.5 Impact Discussion

This GHG analysis assesses the GHG emissions that would be generated by construction and operations of the proposed project. GHG emissions have the potential to adversely affect the environment because such emissions contribute, on a cumulative basis, to global climate change. A typical project, even a very large one, does not generate enough GHG emissions on its own to influence global climate change significantly; therefore, the issue of global climate change is, by definition, a cumulative environmental impact. Therefore, the GHG chapter measures a project's contribution to the cumulative environmental impact. The following paragraphs describe GHG emission sources associated with the project. Detailed modeling methodology and emission estimates are provided in Appendix AQTR.

As explained previously, human activities are contributing to an increase in global surface temperatures, which is anticipated to change precipitation patterns and events, affect droughts, cause heat waves, and influence other weather events, among other impacts (California Climate Change Center 2012). This is a significant cumulative impact.

Construction

Heavy-duty off-road equipment, materials transport, and worker commutes during construction of the proposed project would result in exhaust-related GHG emissions. Construction of the proposed project is anticipated to begin in 2020; and last approximately 27 months for Parcels A through E, and 14 months for Parcel F. The analysis assumed construction activities would involve a maximum of 350 workers per day, and include approximately 25 truck trips per day during the building construction phases.

Operation

After construction, day-to-day activities associated with operation of the project would generate emissions from a variety of sources. The analysis estimated operational GHG emissions from sources such as mobile, stationary, electricity and natural gas, solid waste, water and wastewater, and area-source emissions associated with implementation of the project.

Area-source emissions would be associated with the use of landscaping and maintenance equipment and hearths. Because the proposed project's residential uses would be subject to BAAQMD Regulation 6, Rule 3, which prohibits installation of wood-burning devices in new building construction, all fireplaces were assumed to be gas-fired. Mobile sources would involve vehicle trips associated with residential, recreational, and visitor activities (e.g., work, shopping, and other trips). Project-generated vehicle trips would be the primary source of long-term criteria air pollutant emissions. The proposed project would generate a net total of 6,645 average daily trips for Parcels A through E and F. Energy-related GHG emissions are generated from natural gas and electricity consumption. Energy consumption was based on California Emissions Estimator Model (CalEEMod) defaults, which assume compliance with 2016 Building Standards. However, it should be noted that the proposed project would comply with 2019 Building Standards. Due to improvements and requirements for smart residential photovoltaic systems, updated thermal envelope standards, and residential and nonresidential ventilation and lighting requirements, it is anticipated that nonresidential buildings will be 30% more energy efficient under the 2019 Standards than under the 2016 Standards. Therefore, the emissions presented in the analysis are conservative. The analysis updated the Pacific Gas and Electric Company (PG&E) carbon intensity factor in CalEEMod to reflect RPS requirements. Based on PG&E's 2018 Corporate Social Responsibility Report, PG&E's carbon intensity for delivered electricity is 294 pounds per megawatt-hour. GHG emissions from water and wastewater sources are attributed to the energy used for treatment and distribution of water and wastewater. Total annual water demand was based on the data provided in the water supply assessment (Appendix WSA). GHG emissions from solid waste are associated with the decomposition of solid waste, which was based on CalEEMod defaults. Stationary sources would include emissions from operation of 8 emergency generators, fire water pumps, and 2 small boilers.

GG-1 The project would not directly or indirectly generate greenhouse gas emissions that may have a significant impact on the environment.

As discussed previously, construction and operational activities associated with the proposed project would contribute to global climate change through direct and indirect GHG emissions from mobile sources, energy (natural gas and purchased energy), water use and wastewater generation, waste generation, and other, off-road equipment (e.g., landscape equipment, construction activities). The following is a discussion of the proposed project's contribution to GHG emissions during both the construction and operation phases.

Construction

Construction activities associated with demolition, site preparation, grading, asphalt paving, building construction, and architectural coatings would generate GHG emissions. As shown in Table 3.4-7, the total emissions over the entire construction period for the proposed project (Parcels A-E and F) would be approximately 6,931 MT CO₂e. When this total is amortized over the 30-year life of the project, annual construction emissions would be approximately 331 MT CO₂e per year.

Table 3.4-7 Construction-Related GHG Emissions (MT CO₂e/yr)

Year	Total GHG Emissions (MT CO₂e)
2020	2,732
2021	3,194
2022	1,005
Total	6,931
Amortized Construction Emissions	231

Note: Estimated by AECOM in 2020. Additional details provided in Appendix AQTR.

Totals may not add due to rounding.

GHG = greenhouse gas

MT CO₂e = metric tons of carbon dioxide equivalent

Operation

The amortized construction-related, total and net increase of GHG emissions that are associated with the proposed project are shown in Table 3.4-8. Operation of the proposed project would result in a net increase of 8,348 MT CO₂e per year at buildout of the project, when compared to existing conditions. As shown in the table, the proposed project would not exceed the BAAQMD efficiency threshold established under AB 32 of 4.6 MT CO₂e per service population, nor the local service population efficiency 2030 target of 2.74 MT CO₂e. It should also be noted that operational emissions were estimated for the project's operational year (2023). Therefore, as stricter vehicle emissions standards take effect, advancements in engine technology, turnover in the vehicle fleets, and stricter RPS requirements on utilities, emissions by 2030 would result in lower levels of emissions than shown in Table 3.4-8. Therefore, project-related GHG emissions during the construction and operational phases of the proposed project would be less than cumulatively considerable.

Table 3.4-8 Total GHG Emissions

Source/Category	GHG Emissions (MT CO ₂ e)
Amortized Construction	231
Area	28
Energy	2,609
Mobile	5,841
Waste	469
Water	110
Stationary	630
Total Project Emissions	9,919
Existing GHG Emissions	
Area	1
Energy	404
Mobile	972
Waste	155
Water	38
Total Existing Emissions	1,571
Net Project GHG Emissions	
Amortized Construction	231
Area	27
Energy	2,205
Mobile	4,869
Waste	314
Water	72
Stationary	630
Total Net New GHG Emissions	8,348
Net Emissions Per Service Population (MT CO₂e/SP)¹	2.3
BAAQMD 2020 Efficiency Threshold (MT CO ₂ e/SP)	4.6
2030 Efficiency Threshold (MT CO ₂ e/SP)	2.7
Exceeds Thresholds?	No

Notes: Estimated by AECOM in 2020. Additional details provided in Appendix AQTR. Totals may not add due to rounding.

¹ Net emissions per service population calculated by dividing the project's net new emissions by the number of employees and residents assumed for the project land uses. The analysis assumed the project would have approximately 1,460 new residents and 2,149 new employees.

MT CO₂e = metric tons of carbon dioxide equivalent; SP = service population; GHG = greenhouse gas

Significance without Mitigation: Less than cumulatively considerable.

GG-2 The project would not conflict with an applicable plan, policy, or regulation of an agency adopted for the purpose of reducing the emissions of greenhouse gases.

Air Resources Board Scoping Plans

In accordance with State law, ARB developed the State's Climate Change Scoping Plan (2008) and Scoping Plan updates (2014 and 2017) to outline the State's strategy to reduce California's GHG emissions per AB 32 and SB 32. The proposed project and project objectives would directly support the goals of AB 32 and SB 32. For example, the State's 2017 Scoping Plan update includes VMT reduction goals that call for promotion of land use and community design that reduce VMT, transit-oriented development, and complete street design policies that prioritize transit, biking, and walking. As discussed in Section 3.5, Transportation, the proposed project would generate VMT per service population lower than the San Mateo County averages. In addition, the project objectives include improvement of pedestrian and bicycle connections to support the circulation network and facilitation of the implementation of the El Camino Real Corridor Plan's visions, goals, and strategies to make the Corridor safer and more desirable to walk and bike along and across; and policies supporting community benefits, small businesses, local retail, and a range of housing choices along the Corridor. In addition, the proposed project would comply with the most current Building Energy Efficiency Standards and CALGreen requirements. The CALGreen requirements include mandatory measures for all new building construction, which would result in energy conservation, and make a major contribution in meeting the State's goals established by AB 32 and SB 32 for reduction in GHG emissions (CEC 2018b). Furthermore, as quantified in Impact GG-1, the proposed project would not conflict with the statewide targets established by AB 32 and SB 32. Therefore, the proposed project would not conflict with Scoping Plan and Scoping Plan updates.

Plan Bay Area and BAAQMD Clean Air Plan

In addition, the proposed project would be consistent with the Bay Area's Transportation Plan/Sustainable Community Strategy (Plan Bay Area). One of the purposes of the BAAQMD's Clean Air Plan is to reduce GHG emissions in the San Francisco Bay Area Air Basin. In efforts to reduce VMT and the associated GHG emissions, local governments have identified PDAs, which focus growth in transit-oriented, infill development opportunity areas within existing communities. The project is consistent with this strategy by focusing growth within the El Camino Corridor PDA. The project is also consistent with the comprehensive strategy and goals of the Plan Bay Area and Clean Air Plan to reduce motor vehicle travel on a per-capita basis by improving the region's public transit network; and promoting bicycling, walking, and ridesharing. As discussed previously, the project would generate VMT per service population lower than the San Mateo County averages. In addition, as a project that produces housing (while relocating and replacing existing housing or residents); redevelops an existing underused site (instead of developing on the region's undeveloped periphery; and locates jobs near housing and transit, the project would be consistent with and support the goals of Plan Bay Area and Clean Air Plan. Therefore, operation of the project would not conflict with or obstruct implementation of the Plan Bay Area.

City of Redwood City Climate Action Plan

The proposed project would also be consistent with the applicable community strategies and goals of the City of Redwood City CAP. For example, the proposed project would be consistent with CAP Measure TL1: Smart Growth Development, which calls for prioritization of infill, higher-density, transportation oriented, and mixed-use development. The proposed project also improves pedestrian and bicycle connections, which would be consistent with CAP Measure TL2: Complete Streets Pedestrian/Bicycle

Infrastructure, which calls for making walking and biking more desirable. Additionally, as mentioned, the proposed project would be built to meet the current Building Energy Efficiency Standards and CALGreen standards, which would be consistent with the CAP's goal of reducing energy usage. Therefore, the proposed project would not conflict with strategies to reduce GHG emissions in the CAP.

The proposed project would not conflict with any plans or policies adopted for the purpose of reducing GHG emissions.

Significance without Mitigation: Less than Significant.

3.4.6 Cumulative Impacts

GG-3 The project, in combination with past, present, and reasonably foreseeable projects, would result in less-than-significant cumulative impacts with respect to greenhouse gas emissions.

The geographic scope of consideration for GHG emissions is on a global scale, because such emissions contribute, on a cumulative basis, to global climate change. Given the nature of environmental consequences from GHGs and global climate change, CEQA requires that lead agencies evaluate the cumulative impacts of GHGs, even relatively small additions, on a global basis. By their nature, GHG evaluations under CEQA are a cumulative study. (See *Center for Biological Diversity v. California Department of Fish and Wildlife* (2015) 62 Cal.4th 204). The GHG emissions impact analysis above constitutes a cumulative analysis, in that it considers global, statewide, and regional projections of GHG emissions, as well as the contribution of the project, to GHG emission impacts. Therefore, the significance conclusions reached above with regard to Impacts GG-1 and GG-2 also constitute this EIR's significance conclusions with regard to cumulative GHG emissions impacts.

Significance without Mitigation: Less than cumulatively considerable.

3.4.7 References

- ABAG. 2019. Priority Development Areas Map. Available online at: https://www.arcgis.com/home/webmap/viewer.html?panel=gallery&suggestField=true&url=https%3A%2F%2Fservices3.arcgis.com%2Fi2dkYWmb4wHvYPda%2Farcgis%2Frest%2Fservices%2Fpriority_development_areas_current%2FFeatureServer%2F0. Accessed December 2019.
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3.5 Transportation

This chapter describes the regulatory framework and existing conditions at the proposed project site and vicinity that relate to transportation, and the potential impacts of the proposed project on transportation. The analysis in this section is based in part on the South Main Street Mixed-Use Transportation Analysis (Fehr & Peers 2020).

3.5.1 Recent Changes to CEQA Transportation Analysis

Senate Bill (SB) 743, signed by Governor Jerry Brown in 2013, changes the way transportation impacts are to be identified under the California Environmental Quality Act (CEQA). Specifically, the legislation directed the State of California's Office of Planning and Research (OPR) to look at different metrics for identifying transportation impacts, and make corresponding revisions to the CEQA Guidelines. Following several years of draft proposals and related public comments, OPR settled on vehicle miles traveled (VMT) as the preferred metric for assessing transportation impacts, and issued revised CEQA Guidelines in December 2018, along with a *Technical Advisory on Evaluating Transportation Impacts in CEQA* (December 2018) to assist practitioners in implementing VMT as the new metric. Under the revised guidelines, automobile level of service (LOS) will no longer be used as a determinant of significant environmental impacts except in limited circumstances that are not applicable here, and an analysis of VMT will be required. However, an analysis of LOS as it relates to the proposed project's operational characteristics has been prepared by Fehr & Peers and is provided for informational purposes in the *South Main Street Transportation Analysis* (Fehr & Peers 2020).

The deadline for transitioning to VMT for CEQA analysis is July 2020; until that time, lead agencies, such as the City of Redwood City (City) in this case, have the discretion to include a VMT analysis as part of their CEQA documentation. In response to this recent legislation, the City has developed draft SB 743 implementation guidelines for completing VMT analyses that were used to determine significance thresholds for this project analysis, which are discussed below in Section 3.5.5, Standards of Significance. These draft guidelines are subject to change pending formal adoption by the City, which is anticipated to occur in July 2020. As needed, the VMT analysis in this Draft EIR would be updated prior to certification of the final EIR to reflect the VMT guidelines that are ultimately adopted by the City.

3.5.2 Summary

Table 3.5-1 provides a summary of the impact discussions in Sections 3.5.5 and 3.5.6.

Table 3.5-1 Summary of Impact Findings – Transportation

Environmental Issues	Significant and Unavoidable	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:				
TT-1: Conflict with a program plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
TT-2: Would the project conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
TT-3: Substantially increase hazards due to geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

TT-4: Would the project, in combination with past, present, and reasonably foreseeable projects, result in significant cumulative impacts with respect to transportation?

☐
☐
☒
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As discussed in the Initial Study analysis of Parcels A through E provided in Appendix IS, the proposed project would not have any significant impact related to emergency access, and this issue is not discussed further in this environmental impact report (EIR). Specific to Parcel F, the Consistency Analysis in Appendix CNA substantiates why the current proposal on this parcel would not result in a new significant impact or substantial increase in the severity of a previously disclosed transportation impact as analyzed in the Downtown Precise Plan Program EIR. Furthermore, no mitigation measures were found to be applicable at Parcel F. Regardless, the impact analysis that follows includes Parcel F in the assessment of VMT when determining the potential significance of project-related transportation effects.

3.5.3 Glossary

- **ADA:** Americans with Disabilities Act
- **Caltrans:** California Department of Transportation: The primary state agency responsible for the construction and maintenance of the state highway system, including freeway and highway segments, on- and off-ramps, and signalized intersections.
- **CBPP:** San Mateo County Comprehensive Bicycle and Pedestrian Plan
- **CEQA:** California Environmental Quality Act
- **City:** City of Redwood City
- **Class I Facilities:** Bikeways that are separate from roadways and designated for use by bicycles, and may be often be shared with pedestrians.
- **Class II Facilities:** Bikeways consisting of dedicated lanes on roadways, designated for use by bicycles with special lane markings, pavement legends, and signage.
- **Class III Facilities:** Bikeways on existing streets that accommodate bicycles, but are not separate from the existing travel lanes. Routes are typically designated only with signs, but may include some limited pavement legends such as sharrows.
- **Class IV Facilities:** On-street bikeways for the exclusive use of bicyclists, with a horizontal and/or vertical separation from vehicle traffic or parking lanes. The separation may be achieved using grade separation, flexible posts, inflexible physical barrier, on-street parking, raised islands, or other means.
- **CMP:** Congestion Management Program; a federally mandated program in metropolitan planning areas to address and manage congestion through the implementation of strategies not calling for major capital investments.
- **COA:** condition of approval
- **C/CAG:** City/County Association of Governments of San Mateo County, the designated Congestion Management Agency for San Mateo County.
- **DEIR:** draft environmental impact report

- **EIR:** environmental impact report
- **ITE:** Institute of Transportation Engineers, an international society of professionals in transportation and traffic engineering. The organization publishes Trip Generation, a technical resource for land use-based trip rates and other trip generation data.
- **LOS:** Level of service, a qualitative assessment of operating conditions for transportation facilities using the letter grades A through F (best to worst), to describe their performance.
- **MTC:** Metropolitan Transportation Commission
- **OPR:** State of California's Office of Planning and Research
- **Peak period:** The time periods with the highest travel demands. Typically, weekday AM and PM periods (i.e., 7:00 to 9:00 AM and 4:00 to 6:00 PM, respectively).
- **ROW:** right-of-way
- **RWCmoves:** Redwood City Moves is Redwood City's recently adopted citywide transportation plan.
- **SamTrans:** San Mateo County Transit District
- **SB:** Senate Bill
- **SDR:** standard development requirement
- **Sharrows:** a road marking in the form of two inverted V-shapes above a bicycle, indicating which part of a road should be used by cyclists when the roadway is shared with motor vehicles.
- **SMCTP:** San Mateo Countywide Transportation Plan
- **SR:** State Route
- **TDM:** Transportation Demand Management. Techniques, such as vanpooling, increasing transit use, and telecommuting, to reduce the demand for single-occupant vehicle travel and VMT.
- **Transportation Impact Fee:** An exaction assessed by local governments on new development projects that attempts to recover the cost incurred to provide transportation facilities required to serve the new development.
- **VMT:** Vehicle miles traveled. VMT is an indicator of the travel levels on the roadway system by automobiles. It corresponds to the number of vehicles multiplied by the distance traveled in a given period over a geographical area. VMT on a roadway segment is calculated by multiplying the amount of daily vehicle traffic on a roadway segment by the length of the segment.
- **VTA:** Santa Clara Valley Transportation Authority

3.5.4 Environmental Setting

3.5.4.1 Regulatory Framework

State Regulations

California Department of Transportation

As the primary state agency responsible for transportation issues, the California Department of Transportation (Caltrans) has authority over the state highway system, including the construction and maintenance of freeway and highway segments, on- and off-ramps, and signalized intersections. Caltrans approves the planning, design, and construction of improvements for all state-controlled facilities, such as Interstate 280, US 101, and the associated interchanges. Caltrans' jurisdiction in the project vicinity includes State Route (SR) 82 (El Camino Real) and SR 84 (Woodside Road) and the El Camino Real/Woodside Road interchange. For projects that may physically affect such facilities, Caltrans requires encroachment permits before any construction work may be undertaken. For projects that would not physically affect facilities, but may influence traffic flow, Caltrans may recommend measures to mitigate the traffic impacts of such projects. However, as described below, the City/County Association of Governments of San Mateo County (C/CAG) is responsible for monitoring operations on Caltrans facilities in San Mateo County.

Senate Bill 743

SB 743 required the California Governor's OPR to revise CEQA Guidelines to provide an alternative to LOS (i.e., automobile delay) as the metric for evaluating transportation impacts under CEQA. With a focus on areas served by transit, SB 743 required the development of alternative criteria to promote the reduction of greenhouse gas emissions, development of multimodal transportation networks, and a diversity of land uses.

In response to SB 743, OPR developed alternative metrics and thresholds based on VMT. Changes to CEQA were subsequently adopted by the California Natural Resources Agency on December 28, 2018. These changes remove LOS and automobile delay as a determinant of significant impacts for the purposes of CEQA-related environmental review, replacing it instead with VMT. For local jurisdictions, the mandatory deadline for transitioning from LOS to VMT for analyzing transportation impacts is July 1, 2020.

Accordingly, this DEIR does not contain a discussion of automobile delay impacts; instead, an analysis of VMT and induced automobile travel is provided. LOS and automobile delay, nonetheless, may be considered by decision-makers, independent of the environmental review process, as part of their decision to approve, modify, or disapprove the proposed project. A discussion of LOS and automobile delay is provided in the *South Main Street Transportation Analysis* (Fehr & Peers 2020).

Specific to the project site, the updated CEQA Guidelines Section 15064.4(b)(1) states that, "Generally, projects within one-half mile of either an existing major transit stop or a stop along an existing high-quality transit corridor should be presumed to cause a less-than-significant transportation impact."¹⁰ The project site boundary is within 0.5 mile of the Redwood City Transit Center (Transit Center), which is served by Caltrain and multiple San Mateo County Transit District (SamTrans) bus and local commuter shuttle routes and is a major transit stop. In addition, El Camino Real, with SamTrans' ECR service, qualifies as

¹⁰ Public Resources Code §21064.3 defines a "major transit stop" as "a site containing an existing rail transit station, a ferry terminal served by either a bus or rail transit service, or the intersection of two or more major bus routes with a frequency of service interval of 15 minutes or less during the morning and afternoon peak commute periods."

a high-quality transit corridor, because the frequency of service interval is 15 minutes or less during the morning and afternoon peak commute periods. Although the project could be presumed to cause a less-than-significant transportation impact based on CEQA Guidelines, a VMT analysis was conducted for the project.

Regional Regulations

The C/CAG is designated as the Congestion Management Agency for the County, and is required to prepare and adopt a Congestion Management Program (CMP) on an annual basis. The C/CAG CMP and other plans relevant to the proposed project are described below.

2019 Congestion Management Program (Draft)

The purpose of the C/CAG's CMP is to identify strategies to respond to future transportation needs, develop procedures to alleviate and control congestion, and promote countywide solutions. The CMP is required to be consistent with Metropolitan Transportation Commission (MTC) planning processes, including MTC's Plan Bay Area.

The 2019 CMP provides updated program information and performance monitoring results for the CMP roadway system. C/CAG has adopted guidelines to evaluate the impacts of net new vehicle trips generated by new developments on the CMP network, which include 53 roadway segments and 16 intersections (including State highways) in the County. The CMP intersections are mostly along El Camino Real.

The CMP includes programs and policies regarding transportation systems management and transportation demand management (TDM) to promote the efficiency of the existing system, and encourage alternative modes of transportation. In addition, the CMP provides a Land Use Impact Analysis Program Policy to address large developments that would generate 100 or more net peak period trips on the CMP network. This policy provides procedures for local jurisdictions to analyze and mitigate potential impacts on the CMP network that result from land use decisions.

Because current CMP legislation requires the use of the LOS metric, the Draft 2019 CMP has been prepared following current CMP guidelines. However, C/CAG, in coordination with MTC and other Congestion Management Agencies in the Bay Area, will evaluate and recommend performance metrics for future CMP updates.

Countywide Transportation Plan

The San Mateo Countywide Transportation Plan (SMCTP) 2040 is a long-range comprehensive planning document that supports an integrated system-wide approach to transportation planning, with an emphasis on the transportation network as a whole. The plan is intended to provide clear transportation planning goals and objectives to promote consistency and compatibility among County plans and programs. The SMCTP was adopted by the C/CAG Board of Directors in February 2017.

San Mateo County Comprehensive Bicycle and Pedestrian Plan

The C/CAG, with support from the San Mateo County Transportation Authority, has developed the 2011 San Mateo County Comprehensive Bicycle and Pedestrian Plan (CBPP) to address the planning, design, funding, and implementation of bicycle and pedestrian projects of countywide significance. The five goals of the CBPP are:

- Goal 1: A Comprehensive Countywide System of Facilities for Bicyclists and Pedestrians
- Goal 2: More People Riding and Walking for Transportation and Recreation
- Goal 3: Improved Safety for Bicyclists and Pedestrians
- Goal 4: Complete Streets and Routine Accommodation of Bicyclists and Pedestrians
- Goal 5: Strong Local Support for Non-Motorized Transportation

Travel Demand Model

The C/CAG is required to develop and maintain a countywide travel demand model to project future transportation conditions, forecast the need for and potential effectiveness of transportation projects and infrastructure improvements, and identify the impacts of land use development. The C/CAG model is a four-step travel demand model that is based on the travel forecasting model used by the MTC and maintained by the Santa Clara Valley Transportation Authority (VTA).

Local Regulations

The study area for this transportation analysis includes facilities in the City's jurisdiction. The following describes the applicable local policies and regulations in Redwood City.

Redwood City General Plan

The Circulation Element of the City's General Plan includes the following goals and policies relevant to the analysis of CEQA transportation impacts:

- **Goal BE-25:** Maintain a local transportation system that balances the needs of bicyclists, pedestrians, and public transit with those of private cars.
 - **Policy BE-25.1:** Accommodate and encourage alternative transportation modes to achieve Redwood City's mobility goals and reduce vehicle trip generation and VMT.
- **Goal BE-31:** Encourage developments and implementation of strategies that minimize vehicle trips and VMT.
 - **Policy BE-31.3:** Encourage developments that minimize vehicle trips and VMT.

Redwood City Moves

Redwood City Moves (RWCmoves) is a Citywide Transportation Plan finalized in July 2018, intended to serve as a guiding document for the City as it seeks to improve transportation (City 2018). The plan is a supplement to the Circulation Element of the City's 2010 General Plan that emphasizes the importance of improving transportation options in the City beyond automobile travel.

The goals of RWCmoves are:

- Eliminate traffic fatalities and severe injuries for all modes by 2030.
- Create a walking- and bicycling-friendly community that provides a safe, balanced, and convenient transportation system.
- Provide seamless connections and improved street access to all areas within the City, but especially along mixed-use corridors designated in the General Plan and Citywide Transportation Plan.

- Embrace innovation in all forms of emerging technologies, especially in ways to creatively manage congestion and the transportation system.
- Reach over 50% of all trips being by non-driving modes by 2040; remaining automobile trips should be shared rides and/or zero emission trips.
- Invest in projects that support a resilient, equitable, and sustainable transportation system.

RWCmoves identifies and prioritizes projects and programs that enhance transportation safety, mobility, equity, and access for all users. Potential RWCmoves projects and programs in the project vicinity include:

- Lathrop Street Bicycle Boulevard
- El Camino Real/Woodside Road Overpass Improvements
- Maple Street Corridor Improvements
- El Camino Real Improvements (bicycle, transit, adaptive signal control, etc.)
- On-street Bicycle Parking Citywide Expansion
- Bicycle Master Plan
- Evaluation of railroad grade separation at Chestnut Street, Main Street, and Maple Street

El Camino Real Corridor Plan

The El Camino Real Corridor Plan is a policy document that provides a comprehensive approach to land use, transportation, and streetscape (City 2017). The Plan area includes the length of El Camino Real between the City's northern and southern borders, and encompasses the project site. The Plan includes visions, goals, and strategies for street improvements to make the El Camino Real Corridor safer and more desirable to pedestrians; and policies to support community benefits, small businesses, and a range of housing choices. The four main areas of focus are mobility, economic vitality, housing, and place-making, with the following overarching objectives:

- Improve traffic congestion and parking management;
- Improve the El Camino Real streetscape with a design to promote walking, transit, bicycling, and economic development;
- Create a friendlier place for the people who live and work here: parents, kids, commuters, residents, and local businesses;
- Improve the Corridor's relationship with and connections to the Transit Center (Caltrain station), downtown core (Downtown Precise Plan area), and surrounding neighborhoods;
- Consider adjusting the zoning regulations to address inconsistencies, create high-quality public spaces, and produce more affordable housing;
- Incorporate community benefits for new development that positively impacts the Corridor, adjacent neighborhoods, and Redwood City overall;
- Help existing businesses thrive and encourage new businesses to open within the Corridor area; and
- Identify specific actions to be taken by the City, other agencies (such as Caltrans), and the private sector to realize the improvements that are desired.

In contrast to a specific plan that provides a high level of detail and supersedes the zoning code, the Corridor Plan is a guiding document with recommended actions to be further analyzed following Plan adoption. The Plan was adopted by the City Council in December 2017. Implementation actions recently completed include zoning code amendments that apply the Mixed-Use Transitional district to project Parcels C through E, which allow stand-alone residential uses in this zone and incorporate a community benefits program.

Redwood City Municipal Code

Redwood City Transportation Impact Mitigation Fee Program

In accordance with Chapter 18, Article XV Section 18.244 of the City's Municipal Code, Resolution No. 15433 was adopted in July 2015 to authorize collection of an impact fee on new developments to offset the effects of such development on the transportation system. The associated fees fund future transportation system capital improvements in the City. This includes projects to improve alternative and transit modes such as neighborhood traffic management programs, a City-based shuttle system, a TDM coordinator, and miscellaneous transit, pedestrian, and bicycle projects throughout the City. The fees for the traffic impact fee program are based on the number of dwelling units for residential projects, and on the total development area for commercial uses, and will be applied as a standard condition of approval (COA) applicable to the proposed project, discussed further below.

Street Design

Chapter 30, Article IX, Section 30.118 of the City's Municipal Code specifies criteria for street design. Street design must conform to the General Plan Circulation Element, and is subject to the approval of the Director of Public Works. The criteria provided in this section of the municipal code address street width, turnaround standards, grades, curves, sight distances, and intersection angles.

Pedestrian/Bicycle Paths

Chapter 30, Article IX, Section 30.120 of the City's Municipal Code applies to the development of pedestrian and bicycle paths. This section of the municipal code requires dedicated pedestrian and bicycle paths when warranted by safety and for the purpose of providing access to schools, parks, playgrounds, and other community facilities. The code specifies minimum path width or optional incorporation into existing easements or rights-of-way (ROWS).

Redwood City Standard Conditions of Approval

The City's standard COAs are provided in Appendix COA. The COAs also include standard development requirements (SDRs) that have been codified or adopted by resolution. The following transportation-related COAs or SDRs would apply to approval of the proposed project and require certain transportation improvements to address identified safety or operational deficiencies:

- Transportation Impact Fee (SDR): based on net new trips resulting from the proposed project
- Bicycle Parking (COA): provide a minimum number of bicycle storage spaces
- TDM Program (COA): applicable during project operations and required prior to building occupancy
- Repair or Replace Street Infrastructure (SDR): restore streets after project construction per City Engineer requirements
- Lane Closures (SDR): implement approved traffic control plan during construction per Work Area Traffic Control Handbook

3.5.4.2 Existing Conditions

This section describes existing conditions for roadways, transit service, and pedestrian and bicycle facilities near the project area.

Vehicular Circulation Network

Roadway Network

The following roadways provide direct access to the site: El Camino Real (SR 82), Woodside Road (SR 84), Main Street, Maple Street, Chestnut Street, Lathrop Street, Cedar Street, Beech Street, and Elm Street. Descriptions of these roadways are presented below. For simplicity, El Camino Real (SR 82) and US 101 are considered north-south roadways.

- *El Camino Real (SR 82)* is a four- to six-lane, north-south major arterial and serves as the western boundary for the project site. El Camino Real extends from Santa Clara County through San Mateo County. El Camino Real provides direct access to the project site.
- *Woodside Road (SR 84)* is a four-lane, east-west major arterial southeast of the project site. Woodside Road extends from Redwood City through Woodside. Woodside Road provides regional access to the project site.
- *Main Street* is a two-lane, north-south collector street that connects El Camino Real, Middlefield Road, and Veterans Boulevard. Main Street bisects the project site, and is lined with a mix of restaurants, housing, offices, and some small businesses.
- *Maple Street* is a two-lane, east-west neighborhood connector street that provides access between El Camino Real and the industrial and public service uses east of US 101, including access to the bay. Maple Street is north of the project site, and is lined with a mix of housing, restaurants, offices, and local-serving uses.
- *Chestnut Street* is a two-lane, east-west neighborhood connector street that provides access between El Camino Real and US 101 (via Veterans Boulevard). Chestnut Street partially borders the project site to the south and is lined with housing. A single-track freight spur off the Caltrain mainline runs down the center of Chestnut Street for most of its length, connecting to the Port of Redwood City.
- *Lathrop Street* is a two-lane, north-south neighborhood connector street that provides access between El Camino Real and Maple Street (where it continues north as Franklin Street). Lathrop Street cuts through the project site and primarily serves commercial uses.
- *Cedar Street* is a two-lane, east-west neighborhood connector street that provides access between El Camino Real and Main Street. Cedar Street mostly borders the southern edge of the project site, and primarily serves commercial uses. Cedar Street continues beyond Main Street, but is bisected by the railroad tracks on the eastern side of Main Street. East of the railroad tracks is primarily residential uses.
- *Beech Street* is a two-lane, east-west neighborhood connector street that provides access between El Camino Real and Main Street. Beech Street cuts through the project site, and primarily serves commercial uses. Beech Street continues beyond Main Street, but is bisected by the railroad tracks on the eastern side of Main Street. East of the railroad tracks is primarily residential uses.

- *Elm Street* is a two-lane, east-west neighborhood connector street that provides access between Lathrop Street and Main Street. Elm Street border the northern edge of the project site, and primarily serves commercial uses. Elm Street continues beyond Main Street, but is bisected by the railroad tracks on the eastern side of Main Street. East of the railroad tracks is primarily residential uses.

Grade crossings with the Caltrain mainline are at Chestnut Street, Main Street, and Maple Street. Beech Street and Cedar Street terminate at the Caltrain ROW and continue on the eastern side of the Caltrain ROW, but do not provide through-access.

Due to differing street grid patterns on either side of El Camino Real, all of the side streets in the vicinity of the project site terminate at El Camino Real, with no direct through-access across El Camino Real. Of the three intersections along El Camino Real bordering the project site, only the Maple Street intersection is signalized and provides full access to and from both directions of El Camino Real. The Beech Street and Cedar Street intersections are both unsignalized, but only the former provides full access; the Cedar Street intersection only provides access to and from the northbound direction of El Camino Real.

Existing Intersection Volumes and Lane Configurations

To help characterize existing vehicle activity and traffic circulation patterns, weekday morning (AM) and afternoon/evening (PM) peak-hour intersection turning movement counts were collected in December 2018 on clear days with area schools in session. The traffic count data are included in the Transportation Analysis prepared for the project (Fehr & Peers 2020). Existing AM and PM peak-hour turning movement volumes, lane configurations, and traffic control devices at the study area intersections are presented on Figures 3.5-1A, B, and C.

Existing Transit Service

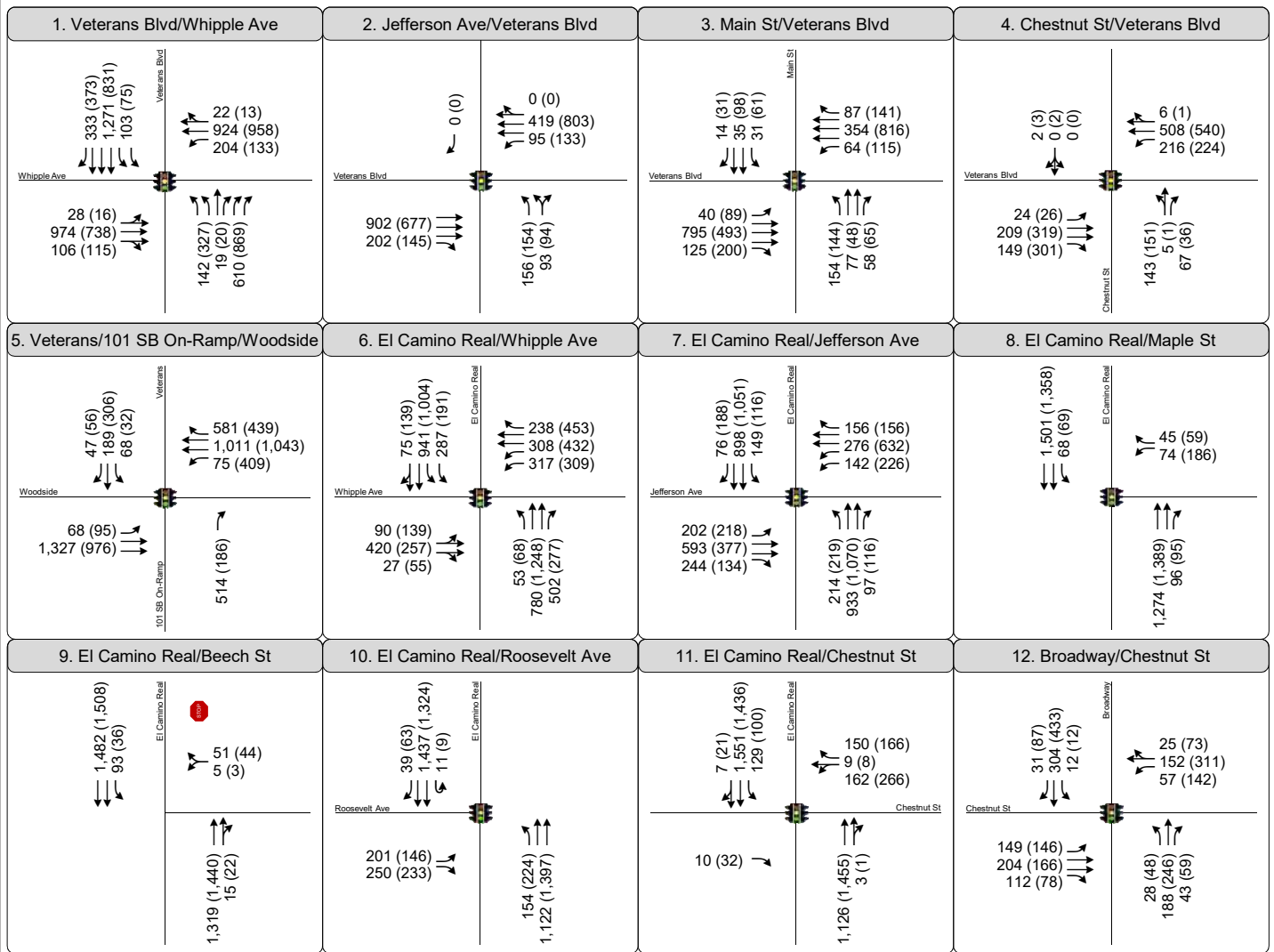
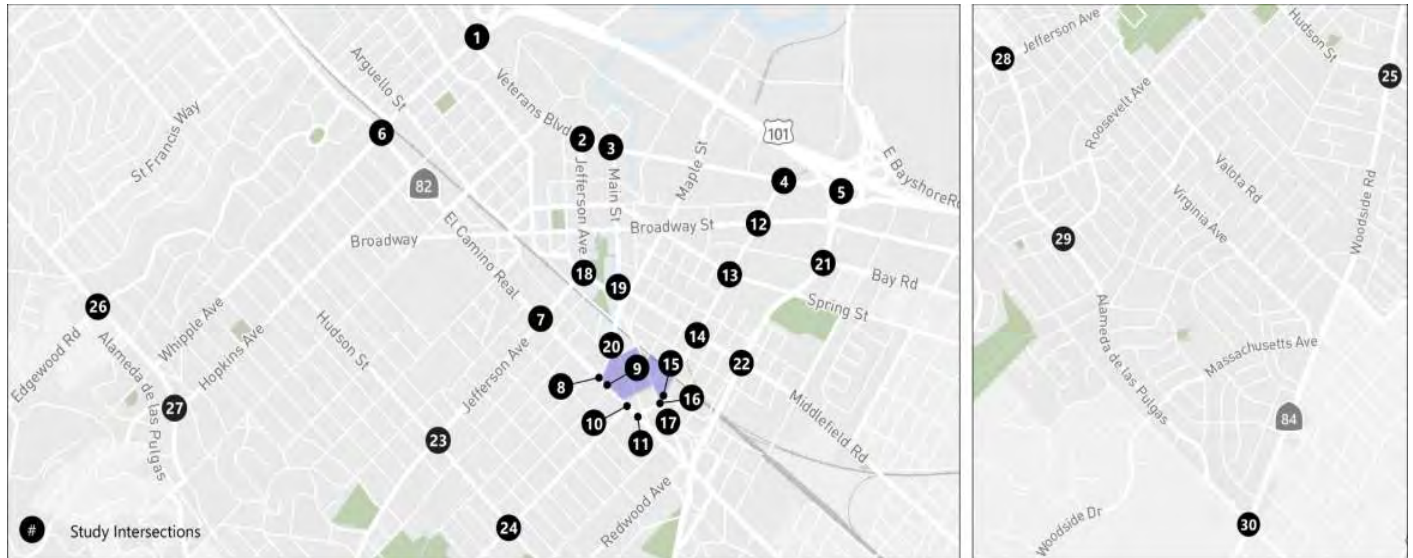
This section summarizes local and regional transit connectivity in the study area, including bus and commuter rail. Figure 3.5-2 illustrates the existing transit facilities and routes in the study area.

SamTrans Bus Service

Bus service is provided by SamTrans. Routes 275 and 278 and the ECR (El Camino Real) run along El Camino Real adjacent to the project site, with stops at Lincoln Avenue (southbound) and Cedar Street/Roosevelt Avenue (northbound). Other routes are located in short walking distance of the project site, including Routes 296 and 397 along Middlefield Road and Routes 274, 276, 295, 398 and the ECR bus routes (in addition to all of the routes mentioned earlier above) at the Transit Center, adjacent to Caltrain's Redwood City Station. Limited supplemental school service is provided by Route 79 (along Roosevelt Avenue and El Camino Real) and Route 95 (at the Transit Center).

Commuter Rail Service

Caltrain is a bi-directional commuter heavy rail service that runs between downtown San Francisco (4th and King Streets) and downtown San Jose (Diridon Station), with a limited number of commute period trains running farther south to and from Gilroy. Caltrain operates a mix of express (Baby Bullet), limited, and local trains, with most trains—including some Baby Bullet trains—serving Redwood City Station, approximately 0.5 mile north of the project site.



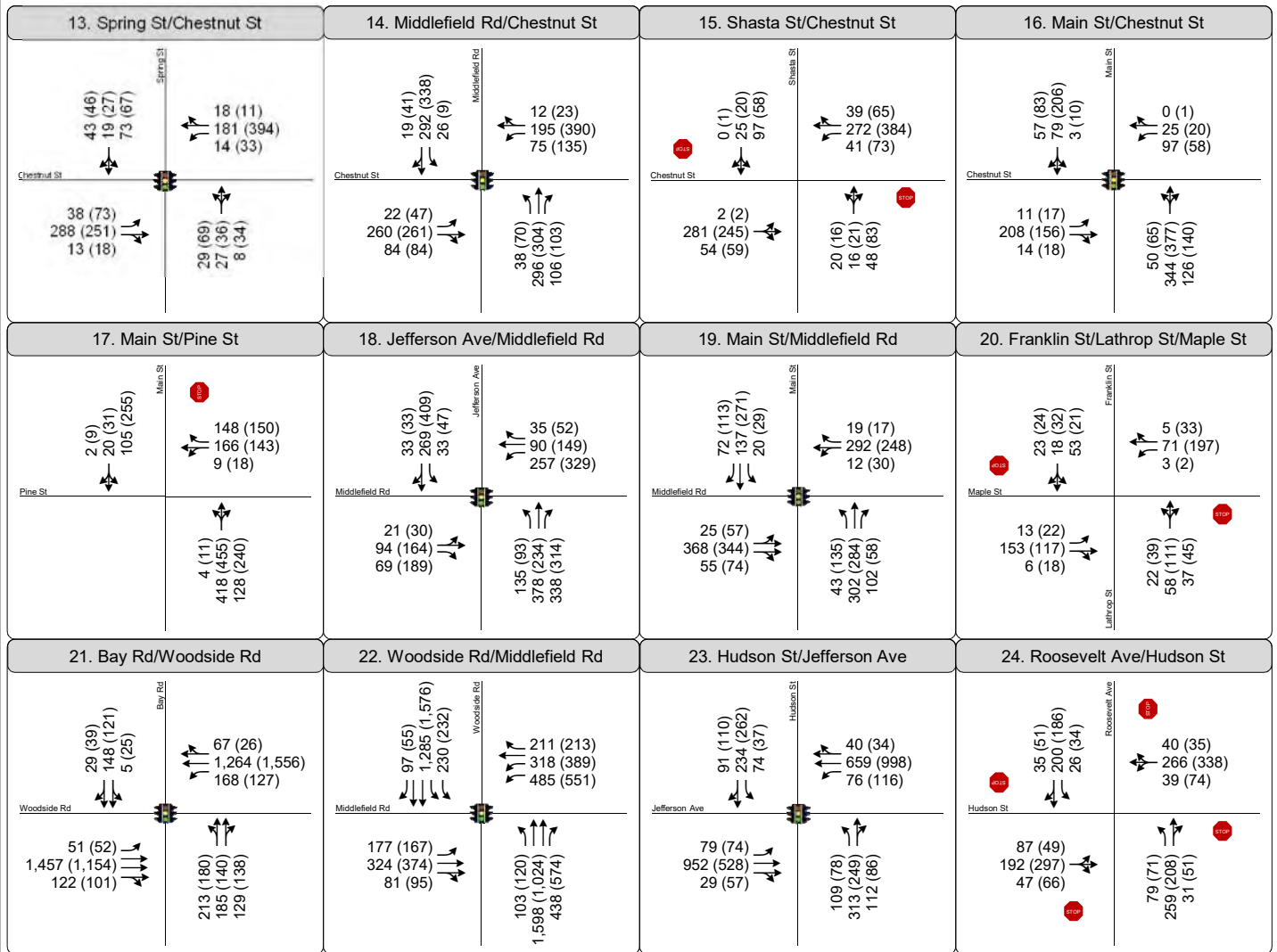
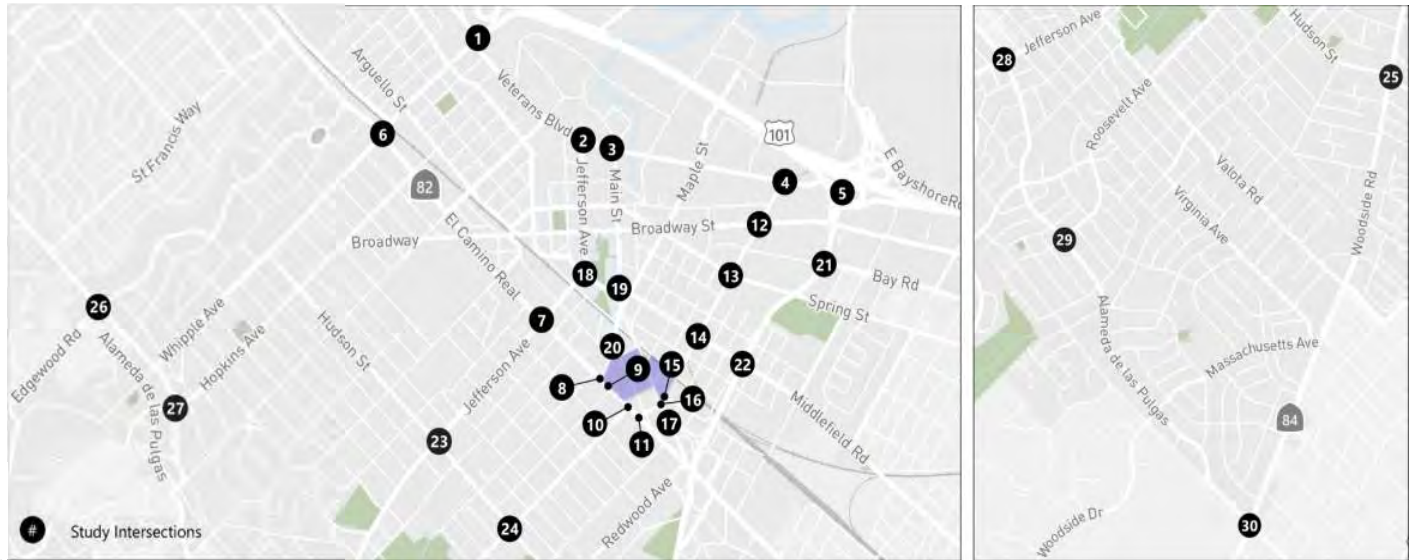
Source: Fehr & Peers 2019

- ➡ Turn Lane
- AM (PM) Peak Hour Traffic Volume
- 🚦 Traffic Signal
- Stop Sign

PEAK HOUR TRAFFIC VOLUMES AND LANE CONFIGURATIONS - EXISTING CONDITIONS

South Main Mixed-Use Development Project
City of Redwood City, California

FIGURE 3.5-1-A
3.5-11



Source: Fehr & Peers 2019

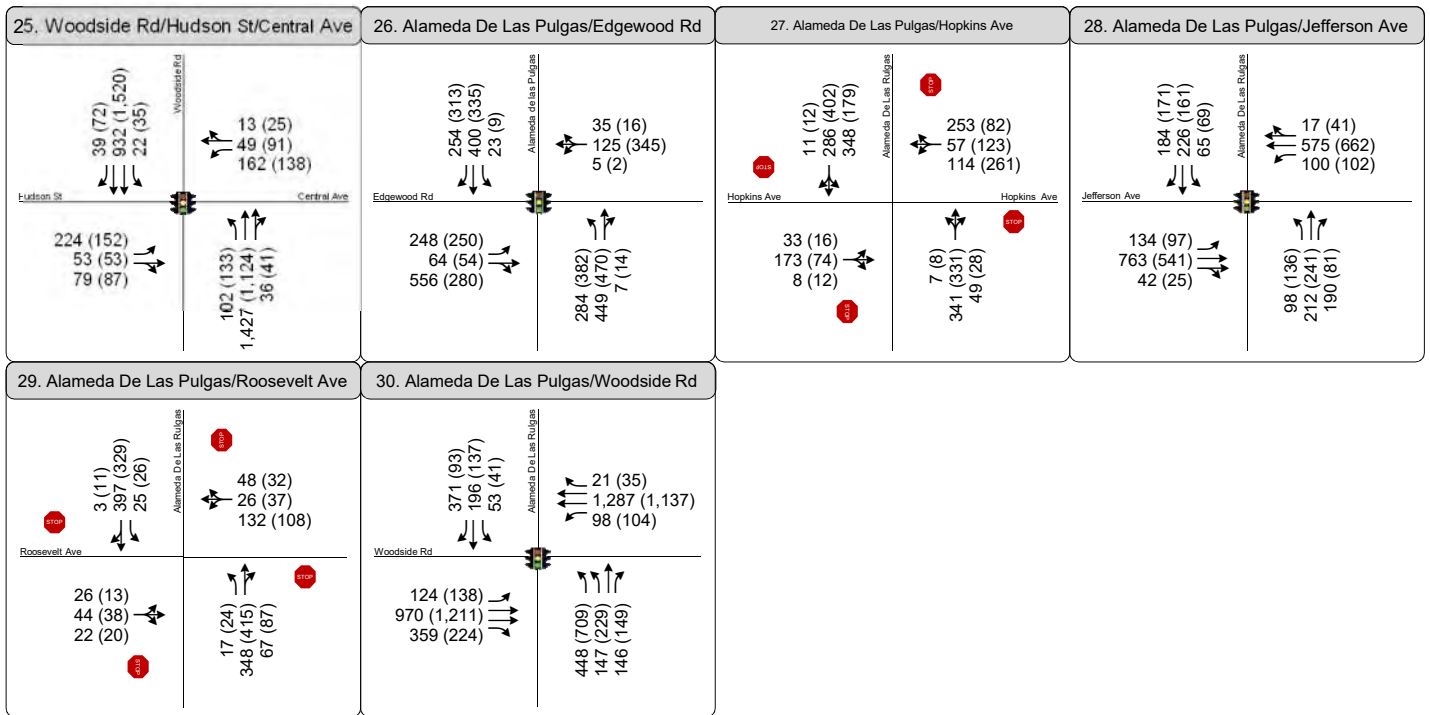
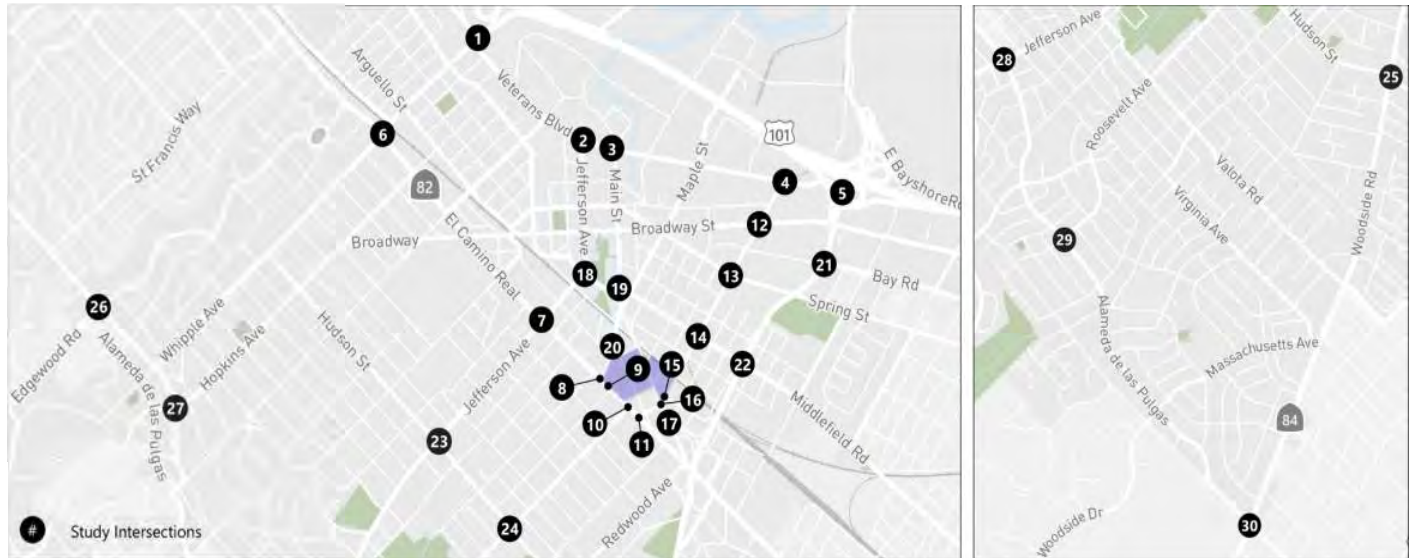
- ↔ Turn Lane
- AM (PM) Peak Hour Traffic Volume
- 🚦 Traffic Signal
- Stop Sign

PEAK HOUR TRAFFIC VOLUMES AND LANE CONFIGURATIONS - EXISTING CONDITIONS

South Main Mixed-Use Development Project
City of Redwood City, California

FIGURE 3.5-1-B
3.5-12

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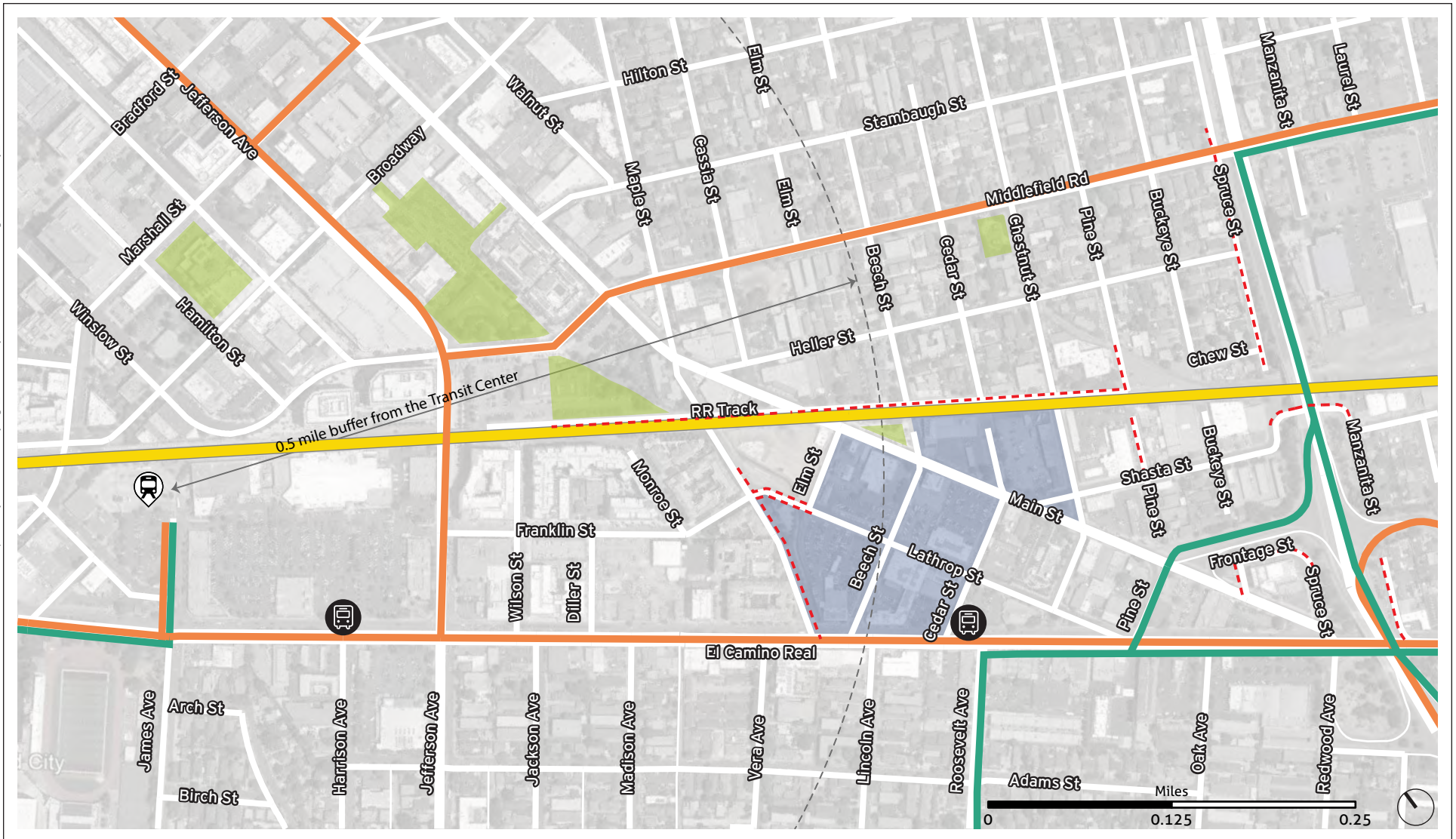
Source: Fehr & Peers 2019

- ↔ Turn Lane
- AM (PM) Peak Hour Traffic Volume
- 🚦 Traffic Signal
- 🛑 Stop Sign

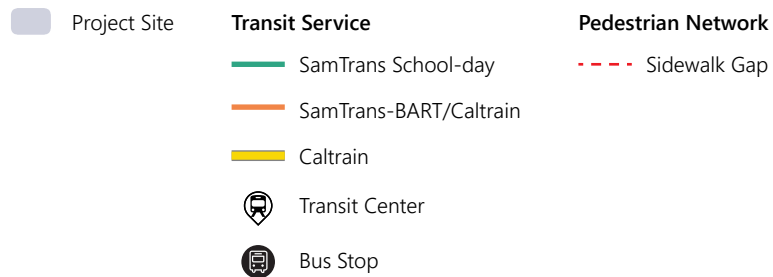
PEAK HOUR TRAFFIC VOLUMES AND LANE CONFIGURATIONS - EXISTING CONDITIONS

South Main Mixed-Use Development Project
City of Redwood City, California

FIGURE 3.5-1-C
3.5-13



Source: Fehr & Peers 2019



TRANSIT SERVICE AND PEDESTRIAN NETWORK GAPS

South Main Mixed-Use Development Project
City of Redwood City, California

FIGURE 3.5-2
3.5-14

Existing Bicycle Facilities

Bikeway planning and design in California typically rely on guidelines and design standards established by Caltrans in the Highway Design Manual (Chapter 1000: Bikeway Planning and Design). The City uses these guidelines to create four general bikeway facility classifications, as outlined below.

- *Class I Bikeways (Multi-Use Paths)* provide a completely separate ROW, and are designated only for bicycle and pedestrian use. Examples include paved shared-use paths and recreational trails. Bike paths serve corridors where there is enough ROW, or space, to allow them to be constructed or where on-street facilities are not appropriate due to vehicular volumes, speeds, or other roadway characteristics. There are currently no Class I bikeways serving the project site.
- *Class II Bikeways (Bicycle Lanes)* are dedicated lanes for bicyclists generally adjacent to the outer vehicle travel lanes, and are commonly referred to as “bike lanes.” These lanes have special lane markings, pavement legends, and signage. Bicycle lanes are typically 5 to 6 feet wide. Class II bikeways are provided along Maple Street between El Camino Real and the Caltrain ROW, and along Middlefield Road between Woodside Road and Cassia Street (one block south of Maple Street).
- *Class III Bikeways (Bicycle Boulevards/Bicycle Routes)* are designated by signs or pavement markings for shared use with motorized traffic, but have no separated bike ROW or lane striping, and are commonly referred to as “bike routes.” Bike routes serve either to a) provide a connection to other bicycle facilities where dedicated facilities are infeasible; or b) designate preferred routes through high-demand corridors. West of the project site, Class III bikeways are provided along Roosevelt Avenue and Jefferson Avenue (both terminating at El Camino Real). East of the project site, Class III bikeways are provided for the short segment of Maple Street between the Caltrain ROW and Main Street, and along Middlefield Road north of Cassia Street.
- *Class IV Bikeways (Separated Bikeways)* provide an on-street ROW designated exclusively for bicycle travel, and are protected from other vehicle traffic by physical barriers, including, but not limited to, grade separation, flexible posts, inflexible vertical barriers such as raised curbs, or parked cars. Such facilities are commonly referred to as “separated bikeways” or “cycle tracks.” Currently, there are no Class IV bikeways in the study area. Future Class IV bikeways have been proposed along El Camino Real (in Redwood City), Maple Street, and Main Street (north of Maple Street), as shown in the RWCmoves plan.

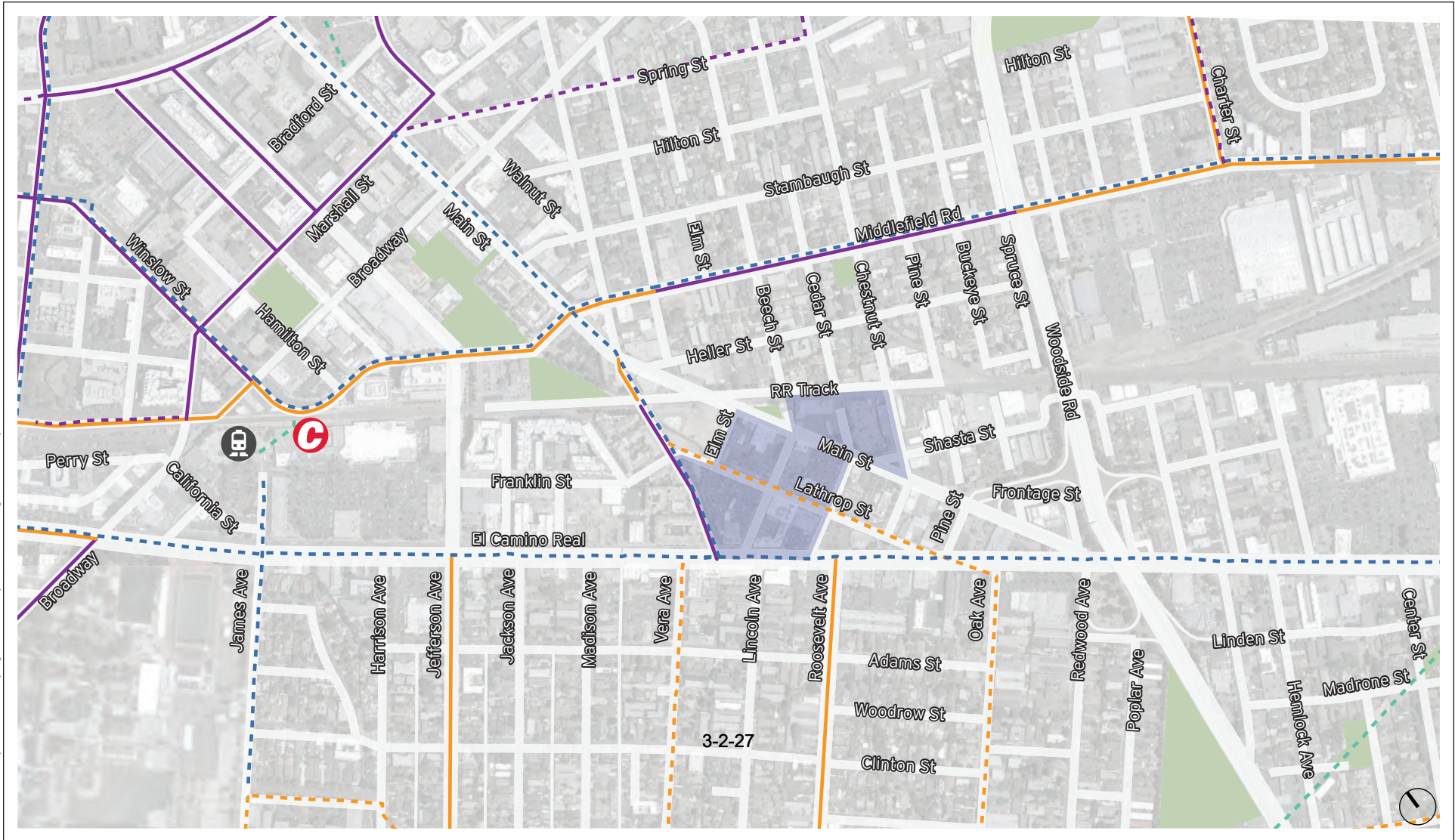
Figure 3.5-3 illustrates the existing bicycle facilities near the project site.

Existing Pedestrian Facilities

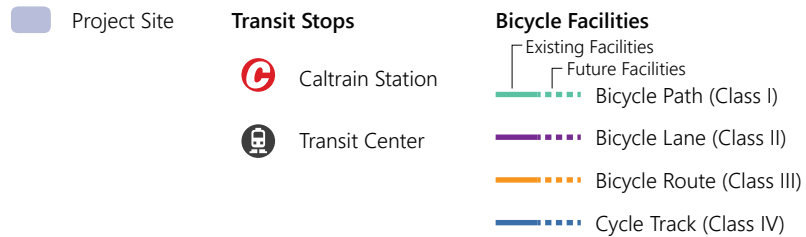
Pedestrian facilities generally consist of sidewalks, crosswalks, and pedestrian signals at signalized intersections. The project site generally has sidewalks provided on both sides of most streets in the project site and immediate vicinity. Sidewalks may be missing along some segments, however, such as the western side of Maple Street between El Camino Real and Lathrop Street (abutting Redwood Creek) or along both sides of Lathrop Street north of Elm Street. Sidewalk gaps are illustrated on Figure 3.5-2.

Within and in the immediate vicinity of the project site, marked crosswalks are generally only provided at key crossing locations; crosswalks are generally not striped at minor intersections between neighborhood connector streets (e.g., Lathrop Street at Elm Street, Cedar Street, and Chestnut Street).

Along El Camino Real, marked crosswalks are generally provided across minor street approaches. Marked crosswalks across El Camino Real are typically limited to signalized intersections, where they are



Source: Fehr & Peers 2020



EXISTING AND PLANNED BICYCLE NETWORK

South Main Mixed-Use Development Project
City of Redwood City, California

FIGURE 3.5-3

3.5-16

usually only provided across one of the legs (e.g., north leg at Maple Street, south leg at Roosevelt Avenue, and north leg at Chestnut Street); crossings across the opposite leg are typically prohibited. At other locations, factors such as high volumes and traffic speeds, crossing distance, and landscaped medians generally discourage crossings across El Camino Real. Similarly, marked crosswalks are provided at only selected locations for intersections along Main Street (all legs at Chestnut Street, south leg at Beech Street, and mid-block immediately south of Elm Street).

Typical crosswalk striping consists of standard, low-visibility designs (parallel lines), but some crossings have been improved with high-visibility continental or ladder striping¹¹ (e.g., El Camino Real/Maple Street, or adjacent to the Main Street Dog Agility Park).

Curb ramps are missing at several intersections in or along the boundaries of the project site (e.g., Lathrop Street/Elm Street, Lathrop Street/Beech Street). Where curb ramps are provided, they may only be provided at some corners, and/or may only be provided in one direction. Most of the curb ramps do not appear to have been improved for Americans with Disabilities Act (ADA) compliance, and may not meet ADA requirements for ramp grade, tactile detection, and other features. The Caltrain grade crossings at Chestnut Street, Main Street, and Maple Street, however, have been improved for ADA compliance.

3.5.5 Standards of Significance

According to Appendix G of the CEQA Guidelines, the proposed project would result in a significant transportation-related impact if it would:

1. Conflict with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities
2. Conflict or be inconsistent with CEQA Guidelines Section 15064.3, subdivision (b)
3. Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)
4. Result in inadequate emergency access

Appendix G checklist Item 4 regarding emergency access was discussed in the Initial Study, Appendix IS, and project impacts relating to emergency access were found to be less than significant. Accordingly, this topic is not discussed further in this DEIR section.

Specific significance criteria used in the analysis to address the Appendix G checklist items are described in further detail below.

3.5.5.1 VMT Impacts

VMT Methodology

This section presents the methods used to implement the City's draft SB 743 implementation guidelines for VMT assessment and how they apply to the proposed project.

Selecting a VMT Calculation Model

The City's draft SB 743 implementation guidelines apply the VTA-C/CAG travel demand model as the tool to estimate daily VMT. The VTA-C/CAG model is a four-step trip-based travel demand model that covers the nine-county Bay Area region (Alameda, Contra Costa, Marin, Napa, San Francisco, San Mateo, Santa

¹¹ "Continental" (also known as "zebra") and "ladder" striping are designed to improve motorists' visibility of the crosswalk.

Clara, Solano, and Sonoma counties), as well as the Association of Monterey Bay Area Governments region (Santa Cruz, Monterey, and San Benito Counties) and San Joaquin County, because these counties represent important travel markets to and from San Mateo County. Travel analysis zones and connectors were refined to better reflect how the proposed project would connect to the roadway system, and land use inputs were updated for the “with Project” scenarios to match the expected trip generation.

Selecting the VMT Accounting Methods

To provide a complete picture of the effects of the proposed project on daily VMT, this analysis looks at:

1. Project-generated VMT: The sum of the “VMT within,” “VMT from,” and “VMT to” San Mateo County under baseline conditions with and without the Project. To ensure that the analysis considers the majority of the trips generated by the proposed project, San Mateo County was selected as the study area for project-generated VMT per service population, in accordance with the City’s draft SB 743 implementation guidelines.
2. Project effects on VMT: The change in travel on all roadways in Redwood City due to the proposed project under cumulative conditions.

This analysis includes VMT for all trip purposes and vehicle types. Both methods described above consider an average VMT *per service population* separately for each land use to distinguish the effects of population and/or employment growth from the effects of changes in personal travel behavior. Project-generated VMT for each land use is then divided by the respective service population (e.g., number of employees for office land use).

The analysis of proposed project effects on VMT considers the effects on the entire roadway system¹² in a specified geographic area (or boundary), including both local trips and pass-through interregional travel (trips that do not have an origin or destination in the area). Redwood City was selected as the study area for quantifying project effects on VMT in accordance with the City’s draft SB 743 implementation guidelines. This boundary VMT is divided by the service population (residents plus employees) to distinguish the effects of population and/or employment growth from the effects of changes in personal travel behavior.

Calculating Baseline and Cumulative Regional VMT Estimates

As described earlier, the VMT analysis evaluates VMT for both the near-term (baseline) and long-term (cumulative) impacts. The near-term effects are evaluated by comparing project-generated VMT per service population against a baseline representing the corresponding countywide average under the base year of the VTA-C/CAG model (2018). The long-term effects are evaluated by comparing the proposed project’s effects on VMT per service population in Redwood City under cumulative conditions, as represented in the horizon year of the VTA-C/CAG model (2040).

VMT Significance Criteria

Project-Generated VMT per Service Population Threshold

The threshold for project-generated VMT per service population is determined separately for each project component’s land use. The thresholds that follow are based on research which has

¹² An often-cited example of how a project can affect VMT is the addition of a grocery store in a food desert. Residents of a neighborhood without a grocery store have to travel a great distance to an existing grocery store. Adding the grocery store to that neighborhood will shorten many of the grocery shopping trips and reduce the VMT to/from the neighborhood. The project is likely to result in similar changes to travel behavior and VMT.

demonstrated that increases in the density and diversity of land uses increases the use of walk, bicycle, scooter, shared vehicle, and transit modes and decreases vehicle use.

- The threshold for project-generated VMT per service population for residential uses is 15% below the baseline home-based VMT per capita for San Mateo County of 12.3 miles, or 10.5 miles.
- The threshold for project-generated VMT per service population for office uses is 15% below the baseline home-based work VMT per employee for San Mateo County of 17.6 miles, or 15.0 miles.
- The threshold for project-generated VMT per service population for retail, entertainment, and childcare uses is the baseline total VMT per service population for San Mateo County, or 32.0 miles.

The City's draft SB 743 implementation guidelines provide screening criteria for proposed land uses that are presumed to have less-than-significant impacts for CEQA transportation purposes. Land uses that are screened out include neighborhood-serving retail uses that are less than 30,000 square feet and childcare centers less than 10,000 square feet. The retail and childcare components of the proposed project meet these screening criteria; however, the proposed residential and office components of the proposed project do not. Therefore, a VMT impact would occur if the Project's VMT per service population was greater than 10.5 miles for residential uses or greater than 15.0 miles for office uses.

Project Effects on VMT per Service Population Threshold

The threshold for project effects on VMT per service population is no net increase in the Redwood City boundary VMT per service population under Cumulative (2040) No Project Conditions (10.84 miles). Therefore, a significant VMT impact would occur if the Redwood City boundary VMT per service population under Cumulative (2040) Project Conditions is higher than the corresponding value under Cumulative (2040) No Project Conditions (10.84 miles).

3.5.5.2 Pedestrian and Bicycle Impacts

Impacts to pedestrian and/or bicycle facilities would be potentially significant if the proposed project would conflict with a program, plan, ordinance, or policy addressing bicycle and pedestrian facilities. The 2018 RWCmoves plan and the 2011 San Mateo County Comprehensive Bicycle and Pedestrian Plan describe related policies and programs necessary to ensure pedestrian and bicycle facilities are safe and effective for City residents. Using these plans as a guide, significant impacts to these facilities would occur if the project or an element of the project:

- Creates a hazardous condition that does not currently exist for pedestrians and bicyclists, or otherwise interferes with pedestrian or bicycle accessibility to the site and adjoining areas; or
- Conflicts with an existing or planned pedestrian or bicycle facility; or
- Conflicts with programs, plans, ordinances, or policies related to bicycle and pedestrian activity adopted by the City, San Mateo County, or Caltrans for their respective facilities in the study area.

3.5.5.3 Transit Impacts

Significant impacts to transit would occur if the proposed project or an element of the proposed project:

- Substantially interferes with transit operations; or
- Conflicts with an existing or planned transit facility or service; or
- Conflicts with programs, plans, ordinances, or policies related to transit adopted by the City or San Mateo County, or by relevant transit agencies (e.g., SamTrans and Caltrain).

3.5.6 Impact Discussion

TT-1 The project would not conflict with a program plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities.

Vehicle trip generation for the proposed project was estimated for the weekday morning (AM) and afternoon/evening (PM) peak hours using a combination of 1) standard trip rates developed by the Institute of Transportation Engineers (ITE) and published in *Trip Generation* (10th Edition); and 2) localized trip rates developed specifically for office and residential apartments in Redwood City as part of RWCmoves. Morning and evening trip generation estimates for existing and proposed office and residential land uses were developed using the RWCmoves trip rates for a suburban area, which provides an accurate estimate of local trip generation rates. All other trip generation estimates were developed using trip rates from ITE's *Trip Generation*.

The trip generation estimates for the proposed project and for existing land uses to be removed are summarized in Table 3.5-2. After subtracting the trips associated with the existing land uses to be removed, the proposed project is estimated to generate approximately 712 AM peak hour vehicle trips (449 inbound and 263 outbound) and 614 PM peak hour vehicle trips (205 inbound and 409 outbound).

Table 3.5-2 South Main Street Vehicle Trip Generation

Land Use	Quantity	Units ¹	ITE Code ²	AM Peak Hour			PM Peak Hour		
				In	Out	Total	In	Out	Total
<i>Proposed Land Uses</i>									
Office	530.000	ksf	RWC S.O.	438	71	509	67	352	419
Residential	540	d.u.	RWC S.R.	69	195	264	152	97	249
Childcare	8.367	ksf	565	49	43	92	44	49	93
Retail ³	28.842	ksf	820	17	10	27	53	57	110
<i>Total Gross Project Trips</i>				573	319	892	316	555	871
<i>Existing Land Uses to be Removed</i>									
Automobile Sales	45.762	ksf	840	63	23	86	45	67	112
Automobile Care Center	19,050	ksf	942	28	15	43	28	31	59
Multi-Family Housing (Mid-Rise)	23	d.u.	221	3	8	11	6	5	11
Office	26.254	ksf	RWC S.O.	22	3	25	3	18	21
Self-Service Car Wash	4	Stalls	947	0	0	0	11	11	22
Ice Skating Rink	15.12	ksf	465	1	2	3	11	9	20
High-Turnover Restaurant	1.24	ksf	932	7	5	12	8	4	12
<i>Total Existing Trips to be Removed</i>				124	56	180	111	146	257
<i>Net New Project Trips</i>				449	263	712	205	409	614

Notes:

¹ ksf = thousand square feet, d.u. = dwelling units

² RWC S.O. = RWCmoves trip generation rates for suburban office. RWC S.R. = RWCmoves trip generation rates for suburban residential.

³ Trip generation estimates for the 18,878 square feet of entertainment use were conservatively developed using ITE trip rates for general retail.

Source: ITE *Trip Generation* (10th Edition), 2017; Fehr & Peers 2020

The directions of approach and departure for project trips were estimated based on the land use mix of the proposed project, locations of complementary land uses, existing travel patterns, and access to/from the project site. The general directions of approach and departure are listed below in Table 3.5-3, and depicted on Figure 3.5-4.

Table 3.5-3 Trip Distribution

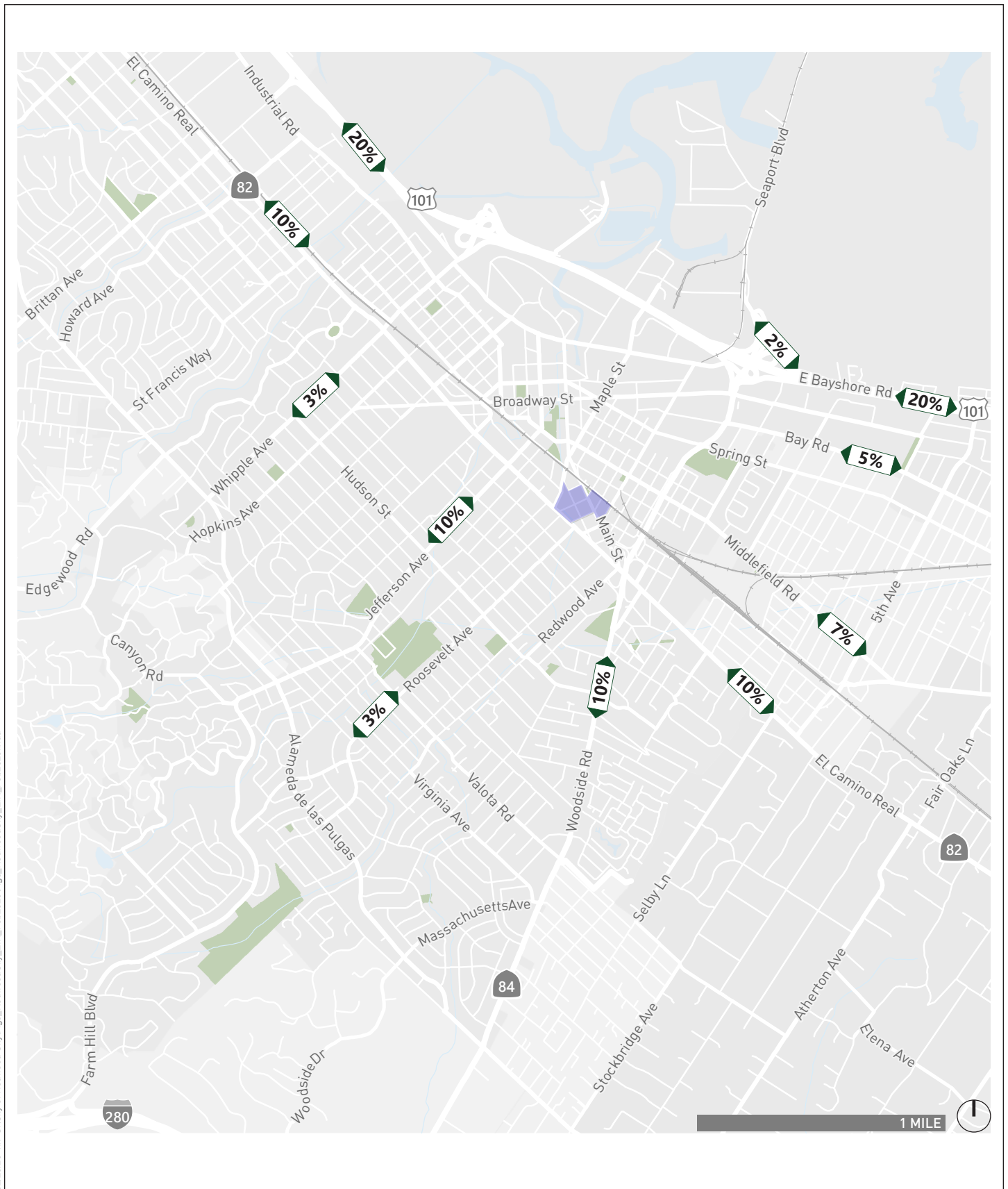
Destination	Trip Distribution (%)
US 101 North of Whipple Avenue	20
US 101 South of Woodside Road	20
East Bayshore Road South of Woodside Road	2
El Camino Real North of Whipple Avenue	10
El Camino Real South of Woodside Road	10
Whipple Avenue West of El Camino Real	3
Jefferson Avenue West of El Camino Real	10
Roosevelt Avenue West of El Camino Real	3
Woodside Road West of El Camino Real	10
Middlefield Road South of Woodside Road	7
Bay Road South of Woodside Road	5
Total	100

Source: Fehr & Peers 2020

Roadway Impact

In accordance with the City's standard COAs (Appendix COA), issuance of the proposed project's certificates of building occupancy is subject to prior City approval of a TDM program that would include annual reporting requirements. Implementation of the approved program is expected to reduce the proposed project's vehicle trip generation rates described above. Regardless, as discussed previously, recent updates to CEQA remove LOS and automobile delay as a determinant of significant environmental impacts. These updates specifically state in Section 15064.3(a) of the CEQA Guidelines that, except in limited circumstances not present here, "a project's effect on automobile delay shall not constitute a significant environmental impact." Therefore, automobile delay as measured by LOS is not considered in this assessment of the proposed project's transportation impacts.

However, the project is subject to the C/CAG Land Use Impact Analysis Program Policy to address development projects that would generate 100 or more net peak-hour trips on the CMP network (e.g., El Camino Real). This policy provides procedures for local jurisdictions to analyze potential effects on the CMP network that result from land use decisions and apply appropriate conditions on the project, such as implementation of a TDM program. In addition, consistency with City policy related to LOS will be addressed through the proposed project's planning review process; the proposed project is subject to any resulting COAs as a result of that review process, in addition to payment of the mandatory Traffic Impact Fee in accordance with Chapter 18 Article XV of the City's Municipal Code.



Source: Fehr & Peers 2020

XX% Trip Distribution

Project Area

TRIP DISTRIBUTION

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FIGURE 3.5-4

3.5-22

The proposed project would also be constructed in accordance with all street design standards provided in Chapter 30, Article IX, Section 30.118 of the City's Municipal Code, including the proposed closure of the segment of Shasta Street between Main and Chestnut Streets. The proposed project would not conflict with any program, policy, or ordinance related to the roadway system in Redwood City.

Significance without Mitigation: Less than significant.

Bicycle Impact

Based on the 2018 RWCmoves plan, bicycle facilities are proposed on the following roadway segments within and adjacent to the project site:

- Lathrop Street from Maple Street to El Camino Real (Class III, bicycle boulevard)
- El Camino Real (Class IV, cycle track)
- Maple Street (Class IV, cycle track)
- Vera Avenue (Class III, bicycle boulevard)

Implementation of the proposed project would not conflict or interfere with any existing bikeway facilities, nor the planned bicycle facilities described above. The proposed project would not result in hazardous conditions for bicyclists, and would generally have a beneficial impact on bicycle safety and access due to improvements such as the realignment of Beech Street with Lincoln Avenue at El Camino Real (with additional traffic control), the closure of Shasta Street between Main and Chestnut Streets to vehicle traffic, conversion of Lathrop Street to a bicycle boulevard along the project frontage, and installation of a Class IV bicycle facility on El Camino Real between Cedar Street and Maple Street. These improvements would slow and calm traffic, which would reduce safety hazards for bicyclists, and provide improved routes for use by bicyclists.

Overall, the proposed project would support the vision and goals of the RWCmoves plan (as described in Section 3.5.4.1), and would not conflict with any other relevant programs, plans, ordinances, or policies addressing bicycle facilities.

Significance without Mitigation: Less than significant.

Transit Impact

The project is approximately 0.5 mile from the Transit Center (including Caltrain's Redwood City Station), a major transit hub in the area; and it is anticipated that a large portion of the proposed project population would use this facility by biking or walking to the station. In addition, transit access is provided by nearby bus stops on El Camino Real at Lincoln Avenue (southbound direction) and Cedar Street/Roosevelt Avenue (northbound direction).

There are no bus stops along the proposed project frontage, and the project does not propose to remove or relocate any existing bus stops or other transit facilities. The SamTrans bus stop at El Camino Real/Cedar Street/Roosevelt Avenue is slightly south of the project site, but is anticipated to remain operable during and after construction of the proposed project.

Currently, SamTrans is under way with Reimagine SamTrans, a comprehensive re-evaluation of SamTrans service to address changes in travel patterns and associated transit needs, given the context of land use and transportation changes in San Mateo County and the region. At this time, the planning process for this effort has not progressed sufficiently to identify proposed changes needed to meaningfully evaluate the potential impacts of the proposed project.

Given these considerations, the proposed project would not substantially interfere with SamTrans operations, nor conflict with existing or planned SamTrans facilities or services. However, it is recommended that the project applicant work closely with SamTrans to identify any improvements that should be considered and/or built as a part of the proposed project.

The proposed project abuts the Caltrain railroad tracks. Although the proposed project would not conflict with any existing or planned service in the ROW, construction of the Caltrain Modernization Program is underway, and is expected to continue during construction of the proposed project. Traffic control plans for project construction activities, discussed in further detail under Impact TT-3 below, would address coordination of construction activities between the proposed project and the Caltrain Modernization Program to reduce potential conflicts, and minimize any effects on transit, roadway, bicycle, and pedestrian facilities.

Redwood City is currently studying options to grade separate the Caltrain alignment and existing roadways throughout the City, including at the project site. In addition, the Caltrain 2040 Business Plan contemplates future expansion to a 4-track system in the project area. The conceptual nature of these improvements does not allow for a meaningful impact analysis as relates to the proposed project without undue speculation. However, prior to implementation of such improvements, additional CEQA review would be required, including an analysis of any adverse impacts at or near the project site.

Significance without Mitigation: Less than significant.

Pedestrian Impact

The proposed project is in an area with an existing network of pedestrian facilities, and would generally have good pedestrian access. As shown on Figure 3.5-2 and discussed in the accompanying section above, there are some existing deficiencies with pedestrian facilities within and in the vicinity of the project site, including sidewalk gaps, missing curb ramps, ADA non-compliance, and unmarked crosswalks (or low-visibility crosswalk striping).

However, the proposed project would not result in hazardous conditions for pedestrians, and would generally have a beneficial impact on pedestrian safety and access due to improvements such as the realignment of Beech Street with Lincoln Avenue at El Camino Real (with additional traffic control specifically designed to assist crossings across El Camino Real), the closure of Shasta Street between Main and Chestnut Streets to vehicle traffic, and the conversion of Lathrop Street to a bicycle boulevard. In addition, the project proposes a new separated bicycle/pedestrian facility that parallels Maple Street between El Camino Real and Lathrop Street, and another along the western side of the Caltrain tracks between Chestnut Street and the existing dog park. The proposed project would also include new, marked crosswalks at the following intersections:

- Maple Street and El Camino Real
- El Camino Real and Beech Street
- El Camino Real and Cedar Street
- Cedar Street and Lathrop Street
- Beech Street and Lathrop Street
- Lathrop Street and Elm Street
- Main Street and Elm Street
- Main Street and Beech Street
- Main Street and Cedar Street
- Main Street and Chestnut Street
- Chestnut Street and Shasta Street

These improvements would have a beneficial effect on pedestrian safety and access by increasing driver awareness of pedestrians, and providing improved routes for use by pedestrians. The proposed

improvements also support the goals and policies described in the RWCmoves plan and other applicable programs, plans, ordinances, and policies addressing pedestrian facilities.

Significance without Mitigation: Less than significant.

Summary

Overall, the proposed project would not conflict with any programs, plans, ordinances, or policies addressing the circulation system (including transit, roadway, bicycle, and pedestrian facilities).

Significance without Mitigation: Less than significant.

**TT-2 The project would not conflict or be inconsistent with CEQA Guidelines
Section 15064.3, subdivision (b).**

As noted previously, the proposed retail and childcare land uses meet the screening criteria provided in the City's draft SB 743 implementation guidelines, and thus are not subject to VMT analysis. Estimates of project-generated VMT per service population for the proposed residential and office uses were developed using the VTA-C/CAG base year (2018) model, and are presented below in Table 3.5-4. A visual representation of project-generated VMT and project effects on VMT is provided on Figure 3.5-5.

Table 3.5-4 South Main Street Project Generated VMT Assessment

Land Use	Threshold	Results	
		Baseline	Baseline with Project
Residential (per capita)	10.5	12.3	10.3
Office (per employee)	15.0	17.6	13.9

Source: Fehr & Peers 2020

The project proposes a mixed-use development adjacent to downtown Redwood City and within a short walking distance of the Transit Center and Caltrain's Redwood City Station, resulting in a project-generated VMT rate lower than the average countywide VMT rate. As shown in Table 3.5-4, for residential uses the project-generated VMT per capita of 10.3 miles is below the applicable VMT threshold of 10.5 miles. For office uses, the project-generated VMT per employee of 13.9 miles is below the applicable VMT threshold of 15.0 miles.

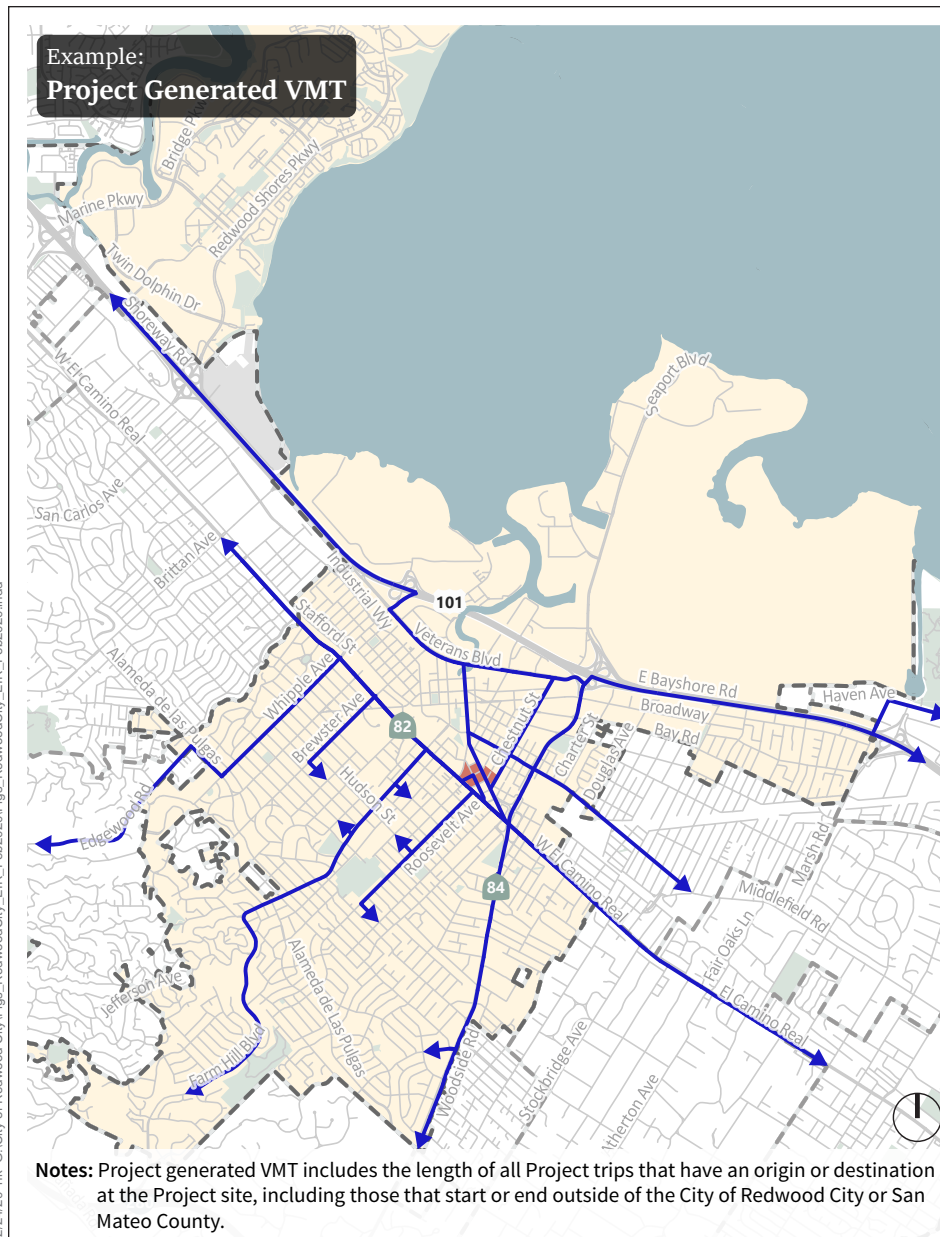
Therefore, the proposed project would have a *less-than-significant* impact related to project-generated VMT, and would not conflict or be inconsistent with CEQA Guidelines Section 15064.3. No mitigation measures are required.

TT-3 The project would not substantially increase hazards due to geometric design features (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment).

The proposed project would be on an infill site near downtown Redwood City, and would consist of a mix of land uses similar to those in the surrounding areas. As mentioned earlier, the proposed project would include roadway and streetscape improvements to enhance safety and circulation for all users, particularly for pedestrians and bicyclists. These improvements include the following:

- Closing Shasta Street to vehicle traffic between Chestnut Street and Main Street to create a pedestrian plaza.

02/24/20 hk G:\City of Redwood City\Figs_RedwoodCity_EIR_Feb2020\Figs_RedwoodCity_EIR_Feb2020.indd



Source: Fehr & Peers 2020

City of Redwood City Project Site Vehicle Miles Traveled (VMT)

VISUAL REPRESENTATION OF VEHICLE MILES TRAVELED (VMT)

South Main Mixed-Use Development Project
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FIGURE 3.5-5
3.5-26

- Transforming Lathrop Street to a bicycle boulevard that de-emphasizes vehicle traffic and encourages bicycle and pedestrian traffic between El Camino Real and Main Street.
- Realigning Beech Street to align with Lincoln Avenue, and installing additional traffic control to assist pedestrians in crossing El Camino Real.
- Constructing a publicly accessible landscaped walkway parallel to Maple Street between El Camino Real and Lathrop Street along the southern side of Redwood Creek.
- Adding a pedestrian walkway along the northeastern side of Parcel E, parallel to the Caltrain alignment, which would provide an 8-foot-wide pathway to the existing dog park from Chestnut Street.
- Adding a Class IV cycle track on El Camino Real along the project frontage.

In particular, the realignment of Beech Street with Lincoln Avenue would consolidate conflict points associated with the existing offset intersection configuration, and substantially improve overall safety for all roadway users.

The proposed project would include new driveway curb cuts for access to proposed on-site (vehicle and bike) parking facilities:

- Parcel A: From Beech Street.
- Parcel B: From Beech Street via the proposed loading ramp.
- Parcel C: Via Cedar Street.
- Parcel D: Via Elm Street.
- Parcel E: At the terminus of Cedar Street.

All proposed changes to local streets would be implemented in accordance with the City's roadway design standards described in Chapter 30, Article IX, Section 30.118 of the municipal code, and would therefore not create or increase hazards due to design features. Given these considerations, potential impacts resulting from transportation hazards during project operation would be *less than significant*.

Project construction would result in a temporary increase in trips at the project site related to construction staff, off-hauling of excavated soils and demolition debris, and materials and equipment delivery. Project construction vehicles and equipment would occasionally share local roads with other traffic, and temporary lane and/or street closures may be needed to accommodate construction activities. In addition, construction of the offsite recycled water and sewer collection pipelines would require lane closures along these pipeline alignments. Although these occurrences could have the potential to create traffic hazards and potentially impede emergency access, the standard COAs applicable to the proposed project would require implementation of an approved traffic control plan during construction activities, in accordance with the Work Area Traffic Control Handbook. The traffic control plan would identify traffic control methods and plans for flagging; provide notification to affected landowners, residents, and emergency service providers; and provide appropriate warning signs.

Significance without Mitigation: Less than significant.

3.5.7 Cumulative Impacts

TT-4 Cumulative Transportation Impact

The analysis of cumulative impacts is based on quantifying Redwood City boundary VMT per service population in the year 2040 using the VTA-C/CAG future year (2040) model.

The results of this analysis are presented in Table 3.5-5.

Table 3.5-5 South Main Street Project Effects on VMT Assessment

Scenario	Threshold (VMT/Service Population) ^{1, 2, 3}	VMT ³
Cumulative (2040) No Project Conditions	10.84	10.84
Cumulative (2040) with Project Conditions		10.67

Notes:

¹ The threshold for project effects on VMT per service population within City boundaries.

² Includes all trips in Redwood City, including pass-through trips.

³ Service population = residents + employees.

As shown in Table 3.5-5, the Redwood City boundary VMT per service population is lower under Cumulative (2040) with Project Conditions (10.67) than under Cumulative (2040) No Project Conditions (10.84). In other words, the proposed project would result in a decrease in per capita VMT in Redwood City.

Significance without Mitigation: Less than significant.

3.5.8 References

City of Redwood City (City). 2017. Redwood City El Camino Real Corridor Plan. Adopted December 4. Available online at: <https://www.redwoodcity.org/home/showdocument?id=14224>.

City of Redwood City (City). 2018. RWCmoves: A comprehensive assessment of transportation within Redwood City. July. Available online at: <https://rwcmoves.com/final-plan>.

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Chapter 4. Significant Unavoidable Impacts

State California Environmental Quality Act Guidelines Section 15126.2(b) requires an environmental impact report (EIR) to describe any significant impacts that cannot be mitigated to a less-than-significant level. All of the impacts associated with the proposed project would be reduced to a less-than-significant level through the implementation of identified mitigation measures, with the exception of the impacts discussed below.

The following impact has been identified as significant and unavoidable. Although actions from the proposed project, and mitigation measures, where feasible, would reduce most impacts to less-than-significant levels, the following impact would remain significant and unavoidable after mitigation measures are applied. Refer to Cultural Resources Section 3.5 in Chapter 3 of this EIR for a full discussion of this impact:

- **CR-1: The project would result in a substantial adverse change in the significance of a historical resource.**

This significant and unavoidable impact would result from demolition of the existing historical Perry's Feed Shed structure on the project site.

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Chapter 5. Alternatives to the Project

5.1 Introduction

California Environmental Quality Act (CEQA) Guidelines Section 15126.6(a) requires that an environmental impact report (EIR) describe a range of reasonable alternatives to a project, or the location of a project, that would feasibly attain most of the basic objectives of the project, but would avoid or substantially lessen any of the significant effects, and evaluate the comparative merits of the alternatives. An EIR need not consider every conceivable alternative to a project. Rather, a range of potentially feasible alternatives, governed by the “rule of reason,” must be considered. This is intended to foster informed decision making and public participation (CEQA Guidelines Section 15126.6[f]).

CEQA generally defines “feasible” to mean capable of being accomplished in a successful manner within a reasonable period of time, taking into account environmental, social, technological, and legal factors. The following factors may also be taken into consideration when assessing the feasibility of alternatives: site suitability, economic viability, availability of infrastructure, general plan consistency, other plans or regulatory limitations, jurisdictional boundaries, and the ability of a project proponent to attain site control (CEQA Guidelines Section 15126.6[f][1]).

CEQA also requires that a No Project Alternative be evaluated (CEQA Guidelines Section 15126.6[e]). The analysis of a No Project Alternative is based on the assumption that a project would not be approved. In addition, an environmentally superior alternative must be identified among the alternatives considered. The environmentally superior alternative is generally defined as the alternative that would result in the least adverse environmental impacts to a project site and affected environment. If the No Project Alternative is found to be the environmentally superior alternative, the EIR must also identify an environmentally superior alternative among the other alternatives.

The analysis of alternatives is of benefit to decision makers, because it provides more complete information about the potential impacts of land use decisions. Consequently, there is a better understanding of the interrelationship among all of the environmental topics under evaluation. Decision makers must consider approval of an alternative if it would substantially lessen or avoid significant environmental impacts identified for a proposed project, and if it is determined to be feasible.

5.1.1 Glossary

- **CEQA:** California Environmental Quality Act
- **City:** City of Redwood City
- **DEIR:** draft environmental impact report
- **EIR:** environmental impact report

5.2 Factors Considered in the Selection of Alternatives

The CEQA Guidelines recommend that an EIR briefly describe the rationale for selecting the alternatives to be discussed; identify any alternatives that were considered by the lead agency but were rejected as infeasible; and briefly explain the reasons underlying the lead agency's determination (CEQA Guidelines Section 15126.6(c)). The following factors were considered in identifying the range of reasonable alternatives to the proposed project for this DEIR:

- The extent to which the alternative would accomplish most of the basic objectives of the project (refer to Section 2.4 of this draft environmental impact report [DEIR]).
- The extent to which the alternative would avoid or lessen the identified significant and unavoidable environmental effects of the project.
- The feasibility of the alternative.
- The extent to which an alternative contributes to a "reasonable range" of alternatives necessary to permit a reasoned choice.

In accordance with Section 15126.6(b) of the CEQA Guidelines, the discussion of alternatives shall focus on alternatives to a project (or its location) that are capable of avoiding or substantially lessening significant impacts of a project, even if the alternatives would impede to some degree the attainment of the project objectives or would be more costly.

As discussed in Chapter 6, Impacts Found to be Less than Significant, the proposed project's impacts to energy, land use and planning, population and housing, public services, and recreation would be less than significant; and the proposed project's impacts to biological resources; geology, soils, and seismicity; hazards and hazardous materials; hydrology and water quality; noise; tribal cultural resources; and utilities and service systems would be less than significant with mitigation, as detailed in the Initial Study analysis provided in Appendix IS.

Similarly, no significant impacts were identified in Chapter 3, Environmental Evaluation, related to aesthetics, greenhouse gases, and transportation. However, the analysis in Section 3.2, Air Quality, identified potentially significant impacts that would be reduced to less-than-significant levels with the implementation of recommended mitigation measures.

As discussed in Section 3.1, Cultural Resources, the proposed project would result in a significant impact to a historical resource (i.e., Perry's Feed Shed), and no feasible mitigation measures are available to reduce this impact to a less-than-significant level. Consequently, the loss of the historical resource associated with the proposed project would be significant and unavoidable. Therefore, in addition to the required No Project Alternative, this alternatives analysis includes a Preservation Alternative that could avoid or substantially lessen the impact of the proposed project on the historical resource. Finally, an alternative with a reduced intensity of development is analyzed under the 2018 Project Alternative to potentially reduce the severity of proposed project impacts that would be less than significant with mitigation (e.g., air quality). This alternative would mirror the project analyzed in the Initial Study provided in Appendix IS and would develop 249 less residential units than the proposed project.

The alternatives that follow are further discussed and analyzed below under Section 5.4:

- No Project Alternative
- Preservation Alternative
- 2018 Project Alternative

5.3 Alternatives Considered but Rejected for Further Analysis

Section 15126.6(c) of the CEQA Guidelines requires EIRs to identify any alternatives that were considered by the lead agency but were rejected as infeasible during the scoping process, and briefly explain the reasons underlying the lead agency's determination. Section 15126.6(c) provides that among the factors that may be used to eliminate alternatives from detailed consideration in an EIR are (i) failure to meet most of the basic project objectives, (ii) infeasibility, or (iii) inability to avoid significant environmental impacts.

5.3.1 Alternative Location

An alternative location for a project is evaluated to consider the possibility of avoiding significant location-related impacts and provide a greater range of possible alternatives to consider in the decision-making process. The key question is whether an off-site alternative is available that would feasibly attain most of the basic objectives of the proposed project, and avoid or substantially lessen any of the environmental effects of the proposed project (CEQA Guidelines Section 15126.6[a]).

The project site is composed of five contiguous blocks totaling 8.30 acres in Redwood City. The project site is in a transit-rich area: Parcels A through E are approximately 0.5 mile from the Transit Center, and one block from the nearest SamTrans bus stop; Parcel F is in Redwood City's Downtown core, approximately 0.3 mile southeast of the Transit Center. The applicant does not have access to any other similarly located property or group of properties in the project vicinity that would be within 0.5 mile of a major transit stop, and that could support the same type and density of mixed-use development in Redwood City or nearby jurisdictions.

In addition, an off-site alternative would not clearly meet all of the project's objectives, several of which are specific to the project site and vicinity (e.g., facilitate implementation of the El Camino Real Corridor Plan; enhance connections to Caltrain). If an alternative location was identified that did meet most of the project objectives, the significant impact of the proposed project on historical resources could be avoided. However, the environmental setting would, by definition, be similar to the existing urbanized environment at the project site. Furthermore, the resulting development would be of a similar type and intensity as the proposed project. Therefore, it is uncertain whether an alternative location would reduce or avoid any of the other impacts identified for the proposed project.

Given that an alternative location has not been identified that would meet most of the project objectives, the likelihood that an alternative site would have similar environmental impacts, and feasibility considerations related to obtaining other similar sites, the City of Redwood City (City) has elected in this case not to examine an alternative location in detail.

5.3.2 Reduced Office Alternative

With the exception of the significant and unavoidable impact on to the historic Perry's Feed Shed structure, all other impacts resulting from implementation of the proposed project would be less than significant or less than significant with mitigation incorporated. Therefore, a reduction in the square footage of office uses under a project alternative would not provide a substantial reduction or avoidance of significant impacts identified for the proposed project. Moreover, to the extent that a reduction in office space would reduce the financial returns of the project, the ability of the project to provide the community benefits (e.g., open space, childcare, affordable housing) and meet the related project objectives regarding community benefits is uncertain. For these reasons, a reduced office alternative was not further analyzed in this EIR.

5.4 Description and Analysis of Alternatives Retained

5.4.1 No Project Alternative

As discussed above, CEQA Guidelines Section 15126.6(e) requires that an EIR analyze a “No Project” alternative. The purpose of describing and analyzing a no project alternative is to allow decision makers to compare the impacts of approving the project with the impacts of not approving the project.

Under the No Project Alternative, the proposed project would not be developed, and existing uses on the project site would continue. The existing use of the project site primarily consists of auto sales, repair, and warehouse space; one multi-tenant residential building owned by the City, a restaurant, and a former indoor roller rink (see Table 2-1 in Chapter 2). The project site would not be developed with multi-family residential uses; retail and office space, including a childcare facility and family-oriented entertainment/retail; or public and private open space as identified for the proposed project (see Tables 2-2 through 2-5 and Figure 2-4 in Chapter 2). Under the No Project Alternative, Perry’s Feed Shed would not be demolished and rebuilt as proposed under the project.

Although redevelopment could occur at the project site if the proposed project were not approved, it is unclear what that would entail, and is therefore considered speculative. Therefore, because no additional development proposals or concepts have been identified for any portion of the project site, it is assumed that no construction activities would occur under the No Project Alternative. In addition, because there would be no new development on the project site, there would be no construction-related impacts and no associated increases in population or employment opportunities.

With no new development or new residents or employees at the project site, there would be no operational-related impacts, as would occur under the proposed project. Overall, impacts of the proposed project described in Chapter 6 of this DEIR related to biological resources; energy; geology, soils, and seismicity; hazards and hazardous materials; hydrology and water quality; land use and planning; population and housing; public services; recreation; noise; tribal cultural resources and utilities and service systems would not occur under the No Project Alternative. Other potential impacts discussed in Chapter 3, Environmental Evaluation, are addressed below as relates to the No Project Alternative.

5.4.1.1 Impact Assessment

Aesthetics

The project site is not on or near scenic resources, and there are no views of such resources from the project site; therefore, the No Project Alternative and the proposed project would have the same impacts on scenic resources and views.

Under the No Project Alternative, the project site would not be redeveloped with a mixed-use development and the site would continue to consist of auto sales, repair, and warehouse space, one multitenant residential building, a restaurant, and a former indoor roller rink. As described in Section 3.1, Aesthetics, of this DEIR, these existing land uses make no notable contribution to the visual character of the site and surroundings, which is generally characterized as low quality. Under the No Project Alternative, existing sources of light and glare would continue to be the same as under existing conditions.

The proposed project would alter the visual character of the project site and introduce more light sources than the No Project Alternative. However, the proposed project would be subject to development standards, as presented in Section 3.1, Aesthetics, of this DEIR; and project designs would be reviewed by the City’s Architectural Advisory Committee. The proposed project would comply with the City’s

General Plan policies and the zoning code design standards that relate to aesthetic resources (e.g., building massing, open space requirements, materials selection). For the reasons presented in Section 3.1, the proposed project would have less-than-significant impacts related to conflicts with applicable zoning and regulations governing scenic quality, shadows cast by new buildings, and introduction of new sources of substantial light or glare.

Although the No Project Alternative would not improve the visual character of the project site, neither the No Project Alternative nor the proposed project would result in a significant aesthetic impact.

Air Quality

Under the No Project Alternative, there would be no construction of the proposed project, and therefore, no construction-related air quality impacts would occur. As discussed in Section 3.2, Air Quality, construction of the proposed project would result in emissions of regulated criteria pollutants and associated human health risks, primarily from particulate matter emissions from construction equipment. However, with implementation of the recommended mitigation measures, no significant air quality impacts would occur during construction of the proposed project, including criteria pollutant emissions and health risks impacts. Therefore, the No Project Alternative would avoid construction-related air quality impacts of the proposed project; however, similar to the proposed project, no significant air quality impacts would result.

As stated previously, under the No Project Alternative, the project site would not be redeveloped with a mixed-use development, and existing uses on the project site would continue to operate the same as under existing conditions. With no new development or new residents or employees at the project site, there would be no operational-related air quality impacts that would occur under the proposed project. Therefore, the criteria pollutant emission impacts and the health risk impacts resulting from proposed project operations would be avoided under this alternative. However, no significant air quality impacts would result from project operations.

Cultural Resources

As discussed in Section 3.2, Cultural Resources, demolition of the Perry's Feed Shed structure under the proposed project would result in a significant and unavoidable impact to a resource considered historic under CEQA. In contrast, the No Project Alternative would not remove Perry's Fuel & Feed Shed, thereby maintaining the historic integrity of the building. Therefore, there would be no impacts on a historical resource from the No Project Alternative. As a result, the No Project Alternative would avoid the significant and unavoidable impact that would result under the proposed project.

Furthermore, there would be no ground disturbance, so there would be no potential impacts related to the discovery of previously unknown archaeological resources identified for the proposed project. However, with mitigation, this impact would be less than significant under the proposed project. Therefore, the No Project Alternative would reduce the severity of this potential impact; however, similar to the proposed project, it would not result in a significant impact related to archaeological resources.

Greenhouse Gas Emissions

Under the No Project Alternative, there would be no construction of the proposed project, and therefore, no construction-related greenhouse gas emissions would occur.

As stated previously, under the No Project Alternative, the project site would not be redeveloped with a mixed-use development, and existing uses on the project site would continue. With no new development or new residents or employees at the project site, there would be no operational-related impacts that

would occur under the proposed project. There would be no change in existing greenhouse gases emissions produced by operation of the existing land uses at the project site.

As discussed in Section 3.4, Greenhouse Gases, the proposed project would not result in a significant impact related to emissions of greenhouse gases, or to conflicts with existing plans and regulations applicable to greenhouse gas emissions. Greenhouse gas emissions under the No Project Alternative would be reduced compared to the proposed project; however, there would be no significant impact under the proposed project.

Transportation

The No Project Alternative generates approximately 180 AM peak hour vehicle trips and 257 PM peak hour vehicle trips (refer to Table 3.5-2 in Section 3.5, Transportation). This number of vehicle peak hour vehicle trips is substantially less than the proposed project's estimated 712 AM peak hour vehicle trips and 614 PM peak hour vehicle trips. However, the No Project Alternative would not include the pedestrian and bicycle network improvements proposed by the project, or facilitate use of alternative modes of travel, including pedestrian, bicycle, and transit. As a result, the per capita vehicle miles anticipated under the proposed project would be less than the per capita vehicle miles under the No Project Alternative. However, both the proposed project and the No Project Alternative would not result in a significant impact related to transportation.

5.4.1.2 Project Objectives Assessment

The No Project Alternative would not meet any of the project objectives identified in Section 2.4, because it would not support mixed-use development that places residential and commercial uses in close proximity to each other and close to transit options; help the City to achieve its affordable housing goals through the inclusion of range of affordability types in a residential and mixed-use development; implement the El Camino Real Corridor Plan; support the Council's top three priority focus areas of strategic initiatives and goals for housing, transportation, and children and youth; or improve pedestrian, bicycle, and open spaces connections to support the circulation network for all modes of travel.

5.4.2 Preservation Alternative

The Preservation Alternative would be constructed on the same development parcels as the proposed project, and would develop the same number of multi-family residential units, square footage of retail and office space, and same amount of public and private open space as identified for the proposed project (see Tables 2-2 through 2-5 and Figure 2-4 in Chapter 2, Project Description).

The only substantive difference between the Preservation Alternative and the proposed project is that Perry's Feed Shed would be rehabilitated, instead of demolished and rebuilt with a replicate structure in the same location. The upgrades required to rehabilitate the structure would occur in accordance with all requirements of the City's building codes applicable to structures for human occupancy, and would be conducted in a manner that preserves the historic integrity of Perry's Feed Shed, specifically maintaining the historic status of the building and the character-defining features detailed in Section 3.2, Cultural Resources. For purposes of this alternative, it is assumed that the rehabilitated structure would be repurposed for retail use during operations, similar to the proposed project, which calls for retail use in a replicated version of the structure.

Similar to the proposed project, the majority of the project site would be disturbed under the Preservation Alternative, and the same types of construction activities and duration would occur. Construction-related impacts on biological resources; geology, soils, and seismicity; hazards and hazardous materials; hydrology and water quality; noise; tribal cultural resources; and utilities impacts would be the same as

those associated with the proposed project, and the same mitigation measures identified for the proposed project for these impacts would be required for the Preservation Alternative (refer to the Initial Study in Appendix IS). As with the proposed project, implementation of these mitigation measures would reduce construction-related impacts of the Preservation Alternative to a less-than-significant level.

Because the Preservation Alternative would have the same number of dwelling units and the same number of future residents and employees as the proposed project, operational-related impacts would be the same as those identified for the proposed project in the Initial Study (see Appendix IS) and Chapter 6, Effects Not Found to Be Significant. Specifically, operational impacts of the Preservation Alternative related to biological resources; energy; geology, soils, and seismicity; hazards and hazardous materials; hydrology and water quality; land use and planning; population and housing; public services; recreation; noise; tribal cultural resources, and utilities would be less than significant, or less than significant with mitigation. Potential impacts of the Preservation Alternative related to topics addressed in Chapter 3, Environmental Evaluation, of the DEIR are discussed below.

5.4.2.1 Impact Assessment

Aesthetics

The project site is not on or near scenic resources, and there are no views of these resources from the project site. Therefore, the Preservation Alternative and the proposed project would have no impacts on scenic resources and views.

Under the Preservation Alternative, the project site would be developed with the same land uses and structures as the proposed project. The Preservation Alternative would be subject to the same development standards as the proposed project presented in Section 3.1, Aesthetics, of this DEIR, and project designs would be reviewed by the Architectural Advisory Committee. Similar to the proposed project, the Preservation Alternative would have less-than-significant impacts related to conflicts with applicable zoning and regulations governing scenic quality and introduction of new sources of substantial light or glare.

The physical appearance of the repurposed Perry's Feed Shed under this alternative would be substantially similar to the appearance of the replicated structure that would be built under the proposed project. Therefore, the overall aesthetic impacts of the Preservation Alternative would be similar to those that would occur under the proposed project.

Air Quality

The Preservation Alternative would repurpose Perry's Feed Shed to ensure compliance with the City's building code requirements, and in a manner that preserves the historic integrity of the structure. The associated construction activities may be less intensive than demolishing and reconstructing a replicate structure. However, in the context of the larger construction activities that would occur on Parcels A through F under the proposed project, the reduction in the intensity of construction activity would be nominal. In addition, the replicate structure proposed under the proposed project would provide the same retail space as the rehabilitated structure under this alternative. Thus, air quality emissions associated with project operations would be substantially similar. Therefore, air quality impacts under the Preservation Alternative, including health risk effects, would be similar to those that would result under the proposed project.

Cultural Resources

As discussed in Section 3.3, Cultural Resources, demolition of the Perry's Feed Shed structure under the proposed project would result in a significant and unavoidable impact to a resource considered historic under CEQA. In contrast, the Preservation Alternative would make the necessary upgrades to Perry's Feed Shed to meet the current City building code requirements for human occupancy, while simultaneously maintaining the historic integrity of the building. As a result, the Preservation Alternative would avoid the significant and unavoidable impact that would result under the proposed project. All other impacts of the proposed project related to Cultural Resources would be identical under the Preservation Alternative (i.e., less than significant, or less than significant with mitigation).

Greenhouse Gas Emissions

As explained in the discussion of air quality impacts provided above, the Preservation Alternative would require a similar overall intensity and duration of construction activity as compared to the proposed project. This alternative would have essentially identical operational characteristics as the proposed project. Therefore, no substantive difference in the resulting greenhouse gas emissions would occur under the Preservation Alternative as compared to the proposed project, and the impacts related to greenhouse gas emissions would remain less than significant.

Transportation

The Preservation Alternative would provide the necessary structural upgrades to Perry's Feed Shed, and result in the same land uses and floor area for the various uses as under the proposed project. Therefore, the resulting operational characteristics would be identical under this alternative compared to the proposed project, as would the associated transportation effects. For the same reasons outlined in Section 3.5 of this DEIR, the transportation impacts of the Preservation Alternative would be less than significant, the same as for the proposed project.

5.4.2.2 Objectives Assessment

Because the Preservation Alternative would preserve Perry's Feed Shed (versus constructing a replicate structure on the same site under the proposed project), this alternative would meet the project's objectives to the same degree as the proposed project.

5.4.3 2018 Project Alternative

The 2018 Project Alternative would develop 249 fewer residential units than the proposed project, but increase the commercial square footage by approximately 19,000 square feet. A similar building site footprint would be implemented as part of the 2018 Project Alternative, as compared to the proposed project. The 2018 Project Alternative would change the site plan and uses on Parcels C, D, and E only. The 2018 Project Alternative and proposed project would result in the development of identical land uses on Parcels A, B, and F. Table 5-1 compares the 2018 Project Alternative to uses proposed under the project.

The 2018 Project Alternative was previously proposed by the applicant, and for that reason was the subject of the Initial Study provided in Appendix IS of this DEIR. To account for revisions to the proposed project initiated subsequent to publication of the Initial Study, the analysis and conclusions of the Initial Study were re-evaluated; the results are provided in Chapter 6, Effects Not Found to Be Significant.

Table 5-1 Comparison of 2018 Project Alternative and Proposed Project

	2018 Project	Proposed Project
Residential Use		
Total Residential Units	291 Units Total Parcel A: 252 Parcel F: 39	540 Units Total (249 more units) Parcel A: No Change Parcel D: 249 Parcel F: No Change
Office		
Office Space (square feet)	550,143 Total Parcel B: 110,329 Parcel C: 130,264 Parcel D: 110,788 Parcel E: 198,762	530,000 Total (20,143 reduction) Parcel B: 109,646 Parcel C: 166,410 Parcel D: 0 Parcel E: 253,944
Retail and Childcare Uses		
Retail and Childcare Space (square feet)	Parcel A, Retail: 4,289 Parcel B, Childcare: 8,563 Parcel B, Entertainment: 18,778 Parcel E, Retail: 4,571	Parcel A, Retail: 5,286 Parcel B, Childcare: 8,367 Parcel B, Entertainment: 18,815 Parcel E, Retail: 4,741
Open Space		
Open Space (square feet)	Parcel A: 42,443 Parcel B: 14,766 Parcel C: 5,438 Parcel D: 7,713 Parcel E: 29,046 Parcel F: 1,574	Parcel A: 42,769 Parcel B: 15,235 Parcel C: 11,822 Parcel D: 31,125 Parcel E: 30,308 Parcel F: No Change
Parking		
Parking Stalls (including residential, public, office, carpool, etc.)	Parcel A: 355 Parcel B: 458 Parcel C: 390 Parcel D: 359 Parcel E: 664 Parcel F: 12	Parcel A: 273 Parcel B: 356 Parcel C: 386 Parcel D: 254 Parcel E: 611 Parcel F: No Change
Bike Parking	Parcel A: 84 Parcel B: 15 Parcel C: 18 Parcel D: 15 Parcel E: 27 Parcel F: 0	Parcel A: No Change Parcel B: 11 Parcel C: 17 Parcel D: 84 Parcel E: 26 Parcel F: No Change

As discussed in Chapter 6, construction-related impacts on biological resources; geology, soils, and seismicity; hazards and hazardous materials; hydrology and water quality; noise; tribal cultural resources; and utilities and service systems would be substantially similar to those associated with the proposed project, and the same mitigation measures identified in the Initial Study would apply to the 2018 Project Alternative (refer to Appendix IS). Similar to the proposed project, implementation of these mitigation measures would reduce associated construction impacts of the 2018 Project Alternative to less than significant.

The 2018 Project Alternative would have 249 fewer dwelling units and an approximately 5% increase in the square footage of commercial space compared to the proposed project. Consequently, operational impacts related to energy, noise, population and housing, public services, recreation, and utilities and service systems would be incrementally reduced under this alternative. However, the resulting impacts would remain less than significant, or less than significant with mitigation. Operational impacts related to biological resources; geology, soils, and seismicity; hazards and hazardous materials; hydrology and water quality, and tribal cultural resources would be the same as the proposed project.

Potential impacts of the 2018 Project Alternative related to topics addressed in Chapter 3, Environmental Evaluation, of the DEIR are discussed below.

5.4.3.1 Impact Assessment

Aesthetics

The project site is not on or near scenic resources, and there are no views of these resources from the project site; therefore, the 2018 Project Alternative and the proposed project would have no impacts on scenic resources and views.

For aesthetic resources, the relevant difference between the 2018 Project Alternative and the proposed project is the change in the proposed building heights. The building heights for Parcels C, D, and E would be lowered by one to two stories under the 2018 Project Alternative.

Although this alternative would lessen the building heights on Parcels C, D and E, these modifications would not substantially change the impact related to the visual character or quality of the site and its surroundings, compared to the proposed project. As discussed in Section 3.1, Aesthetics, impacts related to shadows cast by new buildings on adjacent properties would be less than significant; therefore, reducing the building heights under the 2018 Project Alternative would likewise result in less-than-significant shadow impacts on adjacent properties. The 2018 Project Alternative would be subject to the same development standards as the proposed project, identified in Section 3.1 of this DEIR, and project designs would be reviewed by the Architectural Advisory Committee. Similar to the proposed project, the 2018 Project Alternative would have less-than-significant impacts related to conflicts with applicable zoning and regulations governing scenic quality and introduction of new sources of substantial light or glare. Therefore, for the same reasons provided in Section 3.1, Aesthetics, of this DEIR, the aesthetic impacts of the 2018 Project Alternative would be less than significant, and substantially similar to the proposed project.

Air Quality

Similar to the proposed project, the majority of the project site would be disturbed under the 2018 Project Alternative, and a similar intensity and duration of construction activities would occur. However, because the 2018 Project Alternative would construct 249 fewer residential units and a similar square footage of commercial space compared to the proposed project, the air quality impacts during construction would be incrementally reduced under this alternative. Although the construction activities would be slightly

different, both the 2018 Project Alternative and the proposed project would result in a potentially significant criteria pollutant and health risk impacts during construction, which would be reduced to less than significant with the implementation of recommended mitigation measures specified in Section 3.2, Air Quality.

Because the total population residing or working at the project site would also be reduced under the 2018 Project Alternative, operational air quality impacts would be incrementally reduced compared to the proposed project. However, both the proposed project and the 2018 Project Alternative would result in less-than-significant air quality impacts, including those related to criteria pollutants and health risks.

Cultural Resources

There are no major differences between the 2018 Project Alternative and the proposed project that would be relevant to impacts on cultural resources. The proposed project site, layout, and depth of construction are identical to the proposed project. Therefore, the 2018 Project Alternative would not alter the impact conclusions applicable to the proposed project related to inadvertent disturbance to archaeological resources or human remains (i.e., the impact would remain less than significant with mitigation).

Similar to the proposed project, the 2018 Project Alternative would have significant impacts related to substantial adverse changes in the significance of a historical resource. Specifically, Perry's Fuel & Feed Shed would be demolished under the 2018 Project Alternative and proposed project, and a new replica structure would be constructed, which would constitute a substantial adverse change that would impair the significance of the historical resource. The 2018 Project Alternative would implement Mitigation Measures CR-1a to CR-1c presented in Section 3.1 for the proposed project. These mitigation measures would require archival documentation (Mitigation Measure CR-1a), creation of a permanent interpretive display (Mitigation Measure CR-1b), and the opportunity to salvage and reuse architectural elements of Perry's Fuel & Feed Shed as part of the project design (Mitigation Measure CR-1c). These mitigation measures would each reduce the adverse impact of demolition by limiting the loss of historical information. However, these mitigation measures would not prevent the physical loss of a significant historical resource. The 2018 Project Alternative would not avoid the significant and unavoidable impact to a historical resource, the same as for the proposed project. Therefore, as with the proposed project, this impact would be significant and unavoidable under the 2018 Project Alternative.

Greenhouse Gas Emissions

As detailed in Section 3.4, Greenhouse Gases, the proposed project would not result in any significant impact related to greenhouse gases. The 2018 Project Alternative would result in an incremental decrease in greenhouse gas emissions due to the reduced intensity of construction activity and reduced number of residents occupying the project site. As a result, similar to the proposed project, the 2018 Project Alternative's impacts related to greenhouse gas emission and applicable plans and regulations would not be significant.

Transportation

For transportation, the relevant differences between the 2018 Project Alternative and the proposed project are the proposed number of residential units and the amount of office, retail, and childcare space. The site layout and circulation system are essentially the same as for the 2018 Project Alternative. As a result, emergency access to the site during construction and operations would be the same as the proposed project. Therefore, impacts associated with emergency access under the 2018 Project Alternative would be less than significant, the same as for the proposed project.

The 2018 Project Alternative is estimated to generate approximately 610 AM peak hour vehicle trips and 512 PM peak hour vehicle trips. This volume of vehicle trips per day would be less than the proposed project's estimated 712 AM peak hour vehicle trips and 614 PM peak hour vehicle trips. However, similar to the proposed project, the 2018 Project Alternative would be required to prepare a Transportation Demand Management Program and implement street design standards identified in the City's municipal code. In addition, per capita vehicle miles traveled under the 2018 Project Alternative would be substantially similar to the proposed project, and lower than the average countywide per capita vehicle miles traveled due to the transit-oriented location of the project site.

As with the proposed project, the 2018 Project Alternative would not result in a significant impact related to conflicts with a program plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities; increase in vehicle miles traveled in the project area; and increase in hazards due to a geometric design feature. The 2018 Project Alternative would create the same new pedestrian facilities and provide the same benefits to pedestrian and bicycle circulation, and access to transit as the proposed project. Therefore, as with the proposed project, transportation impacts under the 2018 Project Alternative would be less than significant.

5.4.3.2 Objectives Assessment

The 2018 Project Alternative would meet most of the project objectives. However, the proposed project provides a substantial increase in the number of affordable housing units than would be provided under this alternative (147 units under the proposed project versus 97 under this alternative). Therefore, the proposed project better meets the objective related to affordable housing goals.

5.5 Environmentally Superior Alternative

Table 5-2 compares the environmental impacts of the alternatives (after mitigation) to the proposed project. As stated previously, the impacts of the proposed project on land use and planning, population and housing, public services, and recreation would be less than significant. With mitigation, the proposed project would result in less-than-significant impacts on biological resources; geology, soils, and seismicity; hazards and hazardous materials; hydrology and water quality; noise; tribal cultural resources; and utilities and service systems. Although the Preservation Alternative would avoid impacts on Perry's Feed Shed and the need for mitigation, other mitigation measures applicable to the proposed project's impacts on cultural resource would apply to the Preservation Alternative (e.g., potential impacts on archaeological resources). All other mitigation measures identified in this DEIR and in the Initial Study (Appendix IS) that would apply to the proposed project would also be applicable to both the Preservation Alternative and 2018 Project Alternative.

Table 5-2 Comparison of Project Alternative Impacts Relative to the Proposed Project

	No Project Alternative	Preservation Alternative	2018 Project Alternative
Aesthetics	Similar	Similar	Similar
Air Quality	Less	Similar	Similar
Cultural Resources	Less	Less	Similar
Greenhouse Gas Emissions	Less	Similar	Similar
Transportation	Less	Similar	Similar

CEQA requires that, among the alternatives, an “environmentally superior” alternative be selected, and that the reasons for such selection be disclosed. In general, the environmentally superior alternative is the alternative that would generate the fewest or least severe adverse impacts. Identification of the environmentally superior alternative is an informational procedure, and the alternative identified may not be the alternative that best meets the goals or needs of the project applicant or the City.

The No Project Alternative is environmentally superior, because it would avoid the significant and unavoidable impact to the historical resource, and have less severe impacts related to air quality, greenhouse gas emissions, and transportation. However, although the No Project Alternative would eliminate the significant adverse effect of the proposed project, it would not achieve the project objectives.

When the No Project Alternative is the environmentally superior alternative, CEQA requires that an additional alternative be identified as environmentally superior. In this case, the Preservation Alternative would be the environmentally superior alternative, because it would meet the project objectives, and would avoid the significant and unavoidable impacts identified for the proposed project on the historical resource (Perry’s Feed Shed).

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Chapter 6. Effects Not Found to Be Significant

California Environmental Quality Act (CEQA) Guidelines Section 15128, Effects Not Found to be Significant, allows environmental issues for which there is no likelihood of significant impact to be “scoped out,” and not analyzed further in the environmental impact report (EIR). The project Initial Study provided in Appendix IS analyzed the environmental impacts of the proposed development on Parcels A through E. All topics in the CEQA Environmental Checklist (Appendix G of the CEQA Guidelines) were evaluated. As detailed in the Initial Study, all impacts were found to be less than significant or less than significant with mitigation, with the following exceptions: Aesthetics impacts on scenic vistas (item c) and visual quality (item d); Air Quality impacts on air quality plans (item a), criteria pollutants (item b) and sensitive receptors (item c); Cultural Resources impacts on historical resources (item a) and archaeological resources (item b); Greenhouse Gas Emissions impacts from emissions (item a) and conflicts with plans (item b); and Transportation impacts on the circulation system (item a) and traffic hazards (item c). These potentially significant impacts are analyzed in detail in Chapter 3 of this draft environmental impact report (DEIR). In addition, all mitigation measures identified in the Initial Study are included in the Executive Summary and proposed as part of the project to reduce potentially significant impacts.

Similarly, the proposed residential development on the non-contiguous project Parcel F at 1304 El Camino Real was evaluated through a Consistency Analysis (Appendix CNA). Parcel F is within the approved Downtown Precise Plan (DTPP) area, which was analyzed in the 2010 DTPP Program EIR. The Consistency Analysis was prepared to determine if any new or increased significant impacts would result from Parcel F development, beyond those disclosed in the DTPP Program EIR. Because no new or more severe significant impacts were identified in the Consistency Analysis, no further analysis of Parcel F is provided in this DEIR. However, where applicable, any contribution from Parcel F development to potential cumulative impacts is considered in this DEIR (e.g., construction health risks in Chapter 3). In addition, the applicable DTPP Program EIR mitigation measures identified in the Parcel F Consistency Analysis are included in the Executive Summary and proposed as part of the project to reduce potentially significant impacts.

The Initial Study was published, along with the Notice of Preparation (NOP), on July 9, 2019, for the 2018 project, as outlined in Section 1, Introduction. The Initial Study identified impacts found not to be significant that would not be further analyzed in the DEIR. This section summarizes the Initial Study findings, and compares those findings with potential project impacts for the revised project. A full analysis of each resource area is provided in Appendix IS.

6.1 Glossary

- **AB:** Assembly Bill
- **afy:** acre-feet per year

- **BMP:** best management practice
- **CEQA:** California Environmental Quality Act
- **DEIR:** draft environmental impact report
- **DTPP:** Downtown Precise Plan
- **EIR:** environmental impact report
- **MGD:** million gallons per day
- **NOP:** Notice of Preparation
- **NPDES:** National Pollutant Discharge Elimination System
- **RCFD:** Redwood City Fire Department
- **RWQCB:** Regional Water Quality Control Board
- **SFPUC:** San Francisco Public Utilities Commission
- **SUHS:** Sequoia Union High School District
- **SWPPP:** Storm Water Pollution Prevention Plan
- **UWMP:** Urban Water Management Plan
- **WSA:** Water Supply Assessment
- **WSCP:** Water Shortage Contingency Plan

6.2 Project Changes

Based on public comments received on the NOP, the applicant revised the 2018 project analyzed in the Initial Study. The “proposed project” refers to the revised project for which the applicant is currently seeking approvals. Table 6.1 presents an overview of the substantive changes to the 2018 project. The main differences between the 2018 project and the proposed project are the addition of 249 housing units on Parcel D; and the removal of approximately 20,000 square feet of office space. Both the 2018 and the proposed project would be constructed on the same development parcels, would require the same amount of ground disturbance, and would require the same construction duration.

The July 2019 Initial Study provided in Appendix IS references a pending utility study that would help define any offsite infrastructure improvements necessary to support the operation of the proposed project. This Utilities Engineering Report analyzing the proposed project is provided in Appendix UTIL. The recommended infrastructure improvements resulting from this report, including an extension of the recycled water transmission line and upgrade of the sewer collection system, are detailed in Chapter 2, Project Description.

6.2.1 Aesthetics

For aesthetic resources, the relevant difference between the 2018 project and the proposed project is the change in the proposed building heights. The building heights for Parcels A through E increased by 1 to 2 stories. The proposed project site, development parcels, and site layout are identical to the 2018 project. Because project site is not on or near scenic resources, and there are no views of these resources from the project site, the 2018 project and the proposed project would have identical impacts on scenic resources and views. Therefore, the proposed project would not alter the no impact conclusions related to scenic resources and state-designated scenic highways reported in the Initial Study.

Similar to the 2018 project, the proposed project could have significant impacts related to conflict with applicable zoning and regulations governing scenic quality, and introducing new sources of substantial light or glare. The analyses for these potential impacts are provided in Section 3.1, Aesthetics, of this DEIR.

6.2.2 Agriculture and Forestry Resources

Because there are no agriculture or forestry resources in the project vicinity, the changes between the 2018 project and the proposed project would have no effect on these resources. The proposed project is on the same site as the 2018 project, not near agriculture or forestry resources. Therefore, the proposed project would not alter the no impact conclusion reported in the Initial Study.

Table 6.1 Comparison of 2018 Project and Proposed Project

	2018 Project	Proposed Project
Residential Use		
Total Residential Units	291 Units Total Parcel A: 252 Parcel F: 39	540 Units Total (249 more units) Parcel A: No Change Parcel D: 249 Parcel F: No Change
Office		
Office Space (square feet)	550,143 Total Parcel B: 110,329 Parcel C: 130,264 Parcel D: 110,788 Parcel E: 198,762	530,000 Total (20,143 reduction) Parcel B: 109,646 Parcel C: 166,410 Parcel D: 0 Parcel E: 253,944
Retail and Childcare Uses		
Retail and Childcare Space (square feet)	Parcel A, Retail: 4,289 Parcel B, Childcare: 8,563 Parcel B, Entertainment: 18,778 Parcel E, Retail: 4,571	Parcel A, Retail: 5,286 Parcel B, Childcare: 8,367 Parcel B, Entertainment: 18,815 Parcel E, Retail: 4,741
Open Space		
Open Space (square feet)	Parcel A: 42,443 Parcel B: 14,766 Parcel C: 5,438 Parcel D: 7,713 Parcel E: 29,046 Parcel F: 1,574	Parcel A: 42,769 Parcel B: 15,235 Parcel C: 11,822 Parcel D: 31,125 Parcel E: 30,308 Parcel F: No Change
Parking		
Parking Stalls (including residential, public, office, carpool, etc.)	Parcel A: 355 Parcel B: 458 Parcel C: 390 Parcel D: 359 Parcel E: 664 Parcel F: 12	Parcel A: 273 Parcel B: 356 Parcel C: 386 Parcel D: 254 Parcel E: 611 Parcel F: 12 (No Change)
Bike Parking	Parcel A: 84 Parcel B: 15 Parcel C: 18 Parcel D: 15 Parcel E: 27 Parcel F: 0	Parcel A: 84 (No Change) Parcel B: 11 Parcel C: 17 Parcel D: 84 Parcel E: 26 Parcel F: 0 (No Change)

6.2.3 Air Quality

There are no major differences between the 2018 project and the proposed project that would be relevant to air quality impacts that relate to generating substantial odors. Construction and operation activities for the proposed project would be similar to those for the 2018 project. Therefore, the proposed project would not alter the less-than-significant odor impacts reported in the Initial Study.

Similar to the 2018 project, the proposed project could have significant impacts related to conflict with applicable air quality plans, exceedance of emission thresholds, and exposure of sensitive receptors to substantial pollutant concentrations. The analyses for these potential impacts are provided in Section 3.2, Air Quality, of this DEIR.

6.2.4 Biological Resources

There are no major differences between the 2018 project and the proposed project that would be relevant to impacts on biological resources. The proposed project is on the same site as the 2018 project, which does not provide habitat for sensitive species. Development of the proposed project would involve the same number of tree removals as the 2018 project. As a result, Mitigation Measure BIO-1, Nesting Birds Surveys, and Mitigation Measure BIO-2, Roosting Bats, would apply to the proposed project, and reduce impacts to less than significant, the same as for the 2018 project. The mitigation measures would avoid impacts to sensitive resources, because they include work window restrictions, pre-construction surveys, and species relocation procedures, if needed. Therefore, the proposed project would not alter the biological resource impact conclusions reported in the Initial Study.

6.2.5 Cultural Resources

There are no major differences between the 2018 project and the proposed project that would be relevant to impacts on cultural resources. The proposed project site, layout, and depth of construction are identical to the 2018 project. Therefore, the proposed project would not alter the less-than-significant impact conclusions related to inadvertent disturbance to human remains reported in the Initial Study.

Similar to the 2018 project, the proposed project could have significant impacts related to substantial adverse changes in the significance of a historical or archaeological resource. The analyses for these potential impacts are provided in Section 3.3, Cultural Resources, of this DEIR.

6.2.6 Energy

There are no major differences between the 2018 project and the proposed project that would be relevant to impacts on energy resources. The proposed project would implement the specific energy efficiency measures documented in the Initial Study. Although the proposed project includes more housing units, the same energy efficiency measures described previously in the Initial Study would be implemented under the proposed project. As with the 2018 project, these measures would further minimize energy consumption.

Similar to the 2018 project, the proposed project would comply with existing regulations described in the Initial Study (Appendix IS). Therefore, the proposed project would not alter the less-than-significant impact conclusions related to inefficient, wasteful, and unnecessary consumption of energy, and conflicts with any plans for renewable energy or energy efficiency that are reported in the Initial Study.

6.2.7 Geology, Soils, and Seismicity

There are no major differences between the 2018 project and the proposed project that would be relevant to impacts on geology, soils, and seismicity. The proposed project site layout, and construction (including excavation depths for underground garages) and operation activities are the same as those for the 2018 project. The proposed project would incorporate best management practices (BMPs) required by the Storm Water Pollution Prevention Plan (SWPPP) under the National Pollutant Discharge Elimination System (NPDES) General Permit, like the 2018 project. In addition, the following mitigation measures from the Initial Study analysis of the 2018 project would remain applicable to the proposed project: Mitigation Measure GEO-1, Final Geotechnical Report, Plan Review, and Construction Observations; Mitigation Measure GEO-2, Procedures for Inadvertent Discovery of Paleontological Resources; and Mitigation Measure TRIBAL-2, Worker Training. The mitigation measures would minimize potential project impacts by requiring a final project-specific geotechnical report, and putting in place measures for work stoppage for discovery of unknown paleontological resources. The mitigation measures would reduce the associated impacts to less than significant, the same as for the 2018 project. Therefore, the proposed project would not alter the impact conclusions related to geology, soils, and seismicity reported in the Initial Study.

6.2.8 Hazards and Hazardous Materials

There are no major differences between the 2018 project and the proposed project that would be relevant to impacts on hazards and hazardous materials. The proposed project site, layout, and construction (including demolition of existing structures and excavation for underground garages) and operation activities are the same as those for the 2018 project. The following mitigation measures required for the 2018 project would remain applicable to the proposed project, and reduce impacts to less than significant, the same as for the 2018 project: Mitigation Measure HAZ-1, Hazardous Building Materials Survey and Abatement; and Mitigation Measure HAZ-2, Site Mitigation Plan. The mitigation measures would minimize potential project impacts by requiring that a survey and abatement of any potential hazardous materials at the site be performed prior to initiating construction. Therefore, the proposed project would not alter the impact conclusions related to hazards and hazardous materials reported in the Initial Study.

6.2.9 Hydrology and Water Quality

There are no major differences between the 2018 project and the proposed project that would have relevant impacts on hydrology and water quality. The proposed project site, layout, and construction and operation activities are the same as for the 2018 project. The proposed project would continue to comply with San Francisco Bay Regional Water Quality Control Board's (RWQCB's) Municipal Regional Permit C.3 requirements; incorporate BMPs required by the SWPPP under the NPDES General Permit; and include low-impact development treatment measures, like the 2018 project. As indicated in Section 6.1.8, Hazards and Hazardous Materials, Mitigation Measure HAZ-2. Site Mitigation Plan, would be applicable to the proposed project, and reduce water quality impacts to less than significant. Therefore, the proposed project would not alter the impact conclusions related to hydrology and water quality reported in the Initial Study.

6.2.10 Land Use and Planning

For land use and planning, the relevant differences between the 2018 project and the proposed project include the number of housing units and associated parking, form and size of proposed buildings, and the commercial square footage.

The number of housing units would increase from 291 units to 540 units, resulting in increased density and the addition of about 1,353 residents (versus 680 residents under the 2018 project). Residential development on Parcels A, D, and F would include low-income housing units, thereby meeting the City's affordable housing mandate. Similar to the 2018 project, the proposed project would not introduce physical features that would create a barrier, divide, or separate adjacent uses; or impede movement or circulation through the neighborhood. A similar building site footprint and identical proposed street closures would be implemented as part of the proposed project, compared to the 2018 project. As with the 2018 project, the proposed project would not conflict with the adjacent commercial and residential uses.

The proposed project would include additional housing and a similar amount of open space and office space compared to the 2018 project. However, the proposed project would remain consistent with the applicable General Plan policies, as specifically identified and analyzed in the Initial Study Table 4.11-1, General Plan Consistency Analysis (Appendix CNA). In consideration of the recent General Plan and Zoning amendments that became effective on February 26, 2020,¹³ the proposed project would also remain consistent with the Redwood City Zoning Ordinance, El Camino Real Corridor Plan, and Plan Bay Area, as detailed in the Initial Study. Therefore, the proposed project would not alter the less-than-significant impact conclusions related to physical division of an established community, or conflicts with any other land use plan, policy, or regulation reported in the Initial Study.

6.2.11 Mineral Resources

Because there are no mineral resources in the project vicinity, the changes between the 2018 project and the proposed project would have no effect on these resources. The proposed project is on the same site as the 2018 project, not near mineral resources. Therefore, the proposed project would not alter the no impact conclusion related to the loss of availability of a known mineral resource of value to the region or state, or in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan reported in the Initial Study.

6.2.12 Noise

There are no major differences between the 2018 project and the proposed project for noise and vibration. Proposed construction and operation activities are similar to the 2018 project. The proposed project would continue to comply with applicable noise regulations, and would implement Mitigation Measures NOI-1, Noise Abatement; and Mitigation Measures NOI-2, Prepare and Implement a Vibration Control Plan. These mitigation measures require the implementation of a noise complaint hot line as well as a vibration control plan to avoid any potential groundborne vibration impacts to nearby structures during construction.

Project operations are similar for the 2018 project and the proposed project, because they would include residential, office, and commercial uses. Therefore, proposed construction and operational impacts on noise and vibration would remain the same as described in the Initial Study. These impacts would remain less than significant with implementation of Mitigation Measures NOI-1 and NOI-2.

¹³ Amendments to the General Plan and Zoning Ordinance applicable to Parcels C, D, and E became effective on February 26, 2020, and revised the Mixed-Use Live/Work designation and zoning at these parcels to Mixed Use Transitional (MUT), which increased the permissible density of housing from 20 dwelling units per acre to 40 dwelling units per acre with the provision of qualified community benefits.

6.2.13 Population and Housing

For population and housing, the relevant difference between the 2018 project and the proposed project is the increase in housing units. The proposed project would include 540 units, compared to 291 for the 2018 project, an increase of 249 units. As a result, the proposed project would generate approximately 1,458 residents, based on the average 2.7 people per household¹⁴ for the City, or approximately 672 more permanent residents than under the 2018 project (including Parcel F). Similar to the 2018 project, the proposed project would account for a minimal amount of the City's projected population growth of 5,520 residents by 2030. In addition, as described in Section 6.1.10, Land Use and Planning, the proposed project is consistent with local and regional plans, so the increase in permanent residents would not be considered substantial unplanned growth.

The proposed project would include an approximate reduction of 20,000 square feet of commercial, retail, and office uses compared to the 2018 project. With the development of commercial, retail, and office uses, including childcare and entertainment uses totaling approximately 567,000 square feet, the proposed project would generate approximately 2,150 net new employees on site, compared to 2,213 net new employees with the 2018 project. The increase in employees from the proposed project would represent 2.67% of the 2025 estimated employment in Redwood City, compared to 2.75% reported for the 2018 project in the Initial Study. In addition, the proposed project would increase the number of affordable housing units compared to the 2018 project by 71 units, to a new net total of 125 below-market-rate units (including Parcel F). The proposed project would continue to be within the expected population, housing, and employment growth levels, and is not expected to significantly affect the overall jobs-housing balance in Redwood City. Moreover, given the widely acknowledged regional and local housing shortage, compared to the 2018 project, the additional residential units and reduced office space under the proposed project represent an improved the job-housing balance.

Therefore, the proposed project would not alter the less-than-significant impact conclusions related to inducing unplanned growth or displacement of people or housing reported in the Initial Study.

6.2.14 Public Services

The relevant difference between the 2018 project and the proposed project for public services is the future number of permanent residents, because this feature of the project would impose the greatest demand for public services. Assuming an average household size of 2.7 residents, there would be an increase of 1,353 residents. The proposed project site, layout, and circulation system are essentially the same as those for the 2018 project. As an infill site, the proposed project would not require the extension of services to areas that are currently not served; rather, the proposed project, like the 2018 project, would be in the same service areas, and receive the same response times as described in the Initial Study. The proposed project would also incorporate design measures to minimize the risk of fire at the project site, such as installing automatic sprinkler systems consistent with Section 12.18 of the City's Municipal Code. The proposed taller building heights would not require any additional incorporated design measures beyond those detailed in the Initial Study. As a result, the proposed project would not result in the construction of new or expansion of existing fire protection facilities, based on the demand generated by the proposed project¹⁵. Therefore, the proposed project would not alter the less-than-significant impact

¹⁴ Average Household Size per Redwood City General Plan. Source: City of Redwood City, 2010, A New General Plan for Redwood City, 2015-2-23 Housing Element. Available: <https://www.redwoodcity.org/home/showdocument?id=5127>.

¹⁵ According to email communication with Fire Marshall Gareth Harris of the Redwood City Fire Department. Source: Redwood City Fire Department. Email communication with Emily Biro of AECOM regarding fire protection services to the project site. December 18, 2019.

conclusions related to Redwood City Fire Department (RCFD) response times and other performance objectives reported in the Initial Study.

Similar to the 2018 project, the proposed project would be served by the Redwood City Police Department. For the reasons cited above for RCFD, the proposed project would not affect RCPD's response times or other performance objectives, and would not result in the construction of new or expansion of existing police protection facilities, based on the demand generated by the proposed project, similar to the 2018 project.¹⁶ Therefore, the proposed project would not alter the less-than-significant impact conclusions related to law enforcement reported in the Initial Study.

Similar to the 2018 project, residential development at the project site would generate school-aged children within the Redwood City School District and Sequoia Union High School District (SUHSD) boundaries. Both Hoover Community School (grades K-8) and Sequoia High School (grades 9-12) are operating below design capacity. Enrollment at Hoover Community School is anticipated to decline between 2013 and 2023, and enrollment at Sequoia High School is anticipated to remain below design capacity beyond 2020 (RCSD, 2015; SUHSD, 2015). Therefore, it is likely that Hoover Community School and Sequoia High School would have sufficient capacity to meet the demands of project-generated elementary and middle-school students (75 students) and high school students (100 students) without requiring the construction of additional facilities; and the proposed project would not result in a shortfall of elementary, middle, or high school services or facilities. Even if the proposed project could affect school facilities, the applicant is required to comply with Senate Bill 50 (Chapter 407, Statutes of 1998), which instituted a school facility program by which school districts can levy fees for construction or reconstruction of school facilities. SUHSD levies Level I developer fees. Level I fees are \$3.79 per square foot for residential construction, and \$0.61 per square foot of commercial/industrial construction, although these fees may increase by the time development is proposed (Jack Schreder & Associates, 2018). The California Legislature has declared that payment of the State-mandated school impact fee is deemed to be full and adequate mitigation under CEQA (California Government Code Section 65996). Because the project applicant would pay State-mandated school impact fees, and the existing school facilities are capable of accommodating new students, the proposed project would not result in the need for new or expanded school facilities, similar to the 2018 project. Therefore, the proposed project would not alter the less-than-significant impact conclusions related to school facilities reported in the Initial Study.

As discussed below in Recreation, Chapter 30, Article XII of the Redwood City Municipal Code requires all new residential development to dedicate land and/or pay a fee in-lieu to meet the City's parkland standard of 3.0 acres of developed parkland per 1,000 residents. Because the project applicant would dedicate parkland or pay in-lieu fees, similar to the 2018 project, the proposed project would meet the City's parkland standard. Therefore, the proposed project would not alter the less-than-significant impact conclusions related to recreational facilities reported in the Initial Study.

6.2.15 Recreation

For recreational resources, the relevant difference between the 2018 project and the proposed project is the increase in residential units. As discussed above in Section 6.1.13, Population and Housing, the project would result in an increase in population by approximately 1,353 residents and 2,150 net new employees relative to existing conditions in Redwood City. The proposed project would provide approximately 180,000 square feet of public and private open space.

¹⁶ According to email communication with Captain Ashley Osborne of the Redwood City Police Department. Source: Redwood City Police Department. Email communication with Emily Biro of AECOM regarding police protection services to the project site. December 11, 2019.

In accordance with the Redwood City zoning regulations, areas zoned as Mixed-Use Corridor (including Mixed-Use Corridor – El Camino Real) shall provide a minimum amount of open space of 125 square feet per unit (City, 2019). The proposed project would provide a sufficient amount of open space, totaling approximately 360 square feet of open space per residential unit. Additionally, to be consistent with the Redwood City parkland standard of 3.0 acres of developed parkland per 1,000 residents, the proposed project would need approximately 4.1 acres of park space. As described in the Initial Study, the project applicant would pay park impact fees. Therefore, the proposed project would not alter the less-than-significant impact conclusions related to recreational resources reported in the Initial Study.

6.2.16 Transportation

For transportation, the relevant differences between the 2018 project and the proposed project are the proposed number of residential units, parking stalls, and office, retail, and childcare use space. These changes are noted in Table 6.1. The proposed project site, layout, and circulation system are essentially the same as for the 2018 project. As a result, emergency access to the site during construction and operations would be the same for the proposed project. Therefore, the proposed project would not alter the less-than-significant impact conclusions on emergency access reported in the Initial Study.

Similar to the 2018 project, the proposed project could have significant impacts related to conflict with a program plan, ordinance, or policy addressing the circulation system; increase in vehicle miles traveled in the project area; and increase in hazards due to a geometric design feature. The analyses of these potential impacts are provided in this DEIR in Section 3.5, Transportation.

6.2.17 Tribal Cultural Resources

There are no major differences between the 2018 project and the proposed project that would be relevant to impacts on tribal cultural resources. The proposed project site, layout, and construction activities would be identical to those for the 2018 project. Initial Study Mitigation Measure TRIBAL-1, Procedures for Inadvertent Discovery of Cultural Resources, and Mitigation Measure TRIBAL-2, Worker Training, would continue to be applicable to the proposed project, and would reduce tribal cultural resource impacts to less than significant, similar to the 2018 project. These mitigation measures would put in place stop work procedures in case inadvertent discovery of unknown cultural resources; and would implement worker training for recognition of buried resources. Therefore, the proposed project would not alter the impact conclusions related to tribal cultural resources reported in the Initial Study.

6.2.18 Utilities and Services

6.2.18.1 Infrastructure Improvements

The project would include 249 more residential units than the 2018 project. However, the project would be responsible for the cost of analysis, design, and construction of all necessary upgrades or replacement to adequately serve the project with water, recycled water, stormwater, and sewer collection and transmission facilities, in accordance with the City Standards and Guidelines. In addition, Initial Study Mitigation Measure UTL-1, Upgrade Existing Pipeline Infrastructure, would remain applicable to the proposed project, and reduce impacts to less than significant, similar to the 2018 project. The anticipated upgrades are described in Chapter 2, Project Description, and detailed in the Utilities Engineering Report provided in Appendix UTIL. Like the 2018 project, and as documented in Chapter 3 (Environmental Evaluation) of this Draft EIR, the provision of water and wastewater resulting from implementation of the proposed project would not result in substantial adverse physical effects.

Because there are no substantive differences related to the area of impermeable surface under the proposed project and the 2018 project (i.e., no change to the project footprint), the Initial Study analysis and conclusions regarding stormwater impacts would not change under the proposed project. The Utilities Engineering Report in Appendix UTIL provides a detailed analysis of existing stormwater conditions and the conditions anticipated under the proposed project. As documented in the Initial Study and supported by the Utilities Engineering Report, no significant impact is anticipated regarding stormwater.

6.2.18.2 Water Supply

Subsequent to publication of the Initial Study, in January 2020 Redwood City Public Works Services Department prepared a Water Supply Assessment (WSA) for the proposed project pursuant to Senate Bill 610, (see Appendix WSA). Due to the increase in residential units, the water supply demand for the proposed project would be greater than for the 2018 project. According to the WSA, the total estimated water demand for the proposed project is 193 acre-feet per year (afy), versus the 123.8 afy disclosed in the Initial Study for the 2018 project. However, after accounting for the use of recycled water and existing water demand from current land uses at the project site that would be removed, the net new potable water demand from proposed land uses at the project site is estimated to increase by 10.3 afy.

Although the proposed project is not specifically described in the Redwood City Urban Water Management Plan (UWMP) from 2015, the WSA indicates that the proposed project is consistent with the 2010 General Plan that provides the basis for the growth projections in the UWMP. As described in the Initial Study, according to the 2015 UWMP, the City is expected to have adequate water supplies during normal years to meet its total projected demands through 2040 (EKL, 2016). During dry and multiple-dry years, the City expects to experience some supply shortfalls. The City anticipates implementation of its Water Shortage Contingency Plan (WSCP), which would curtail demands and ensure that supplies remain sufficient to serve all users, including the proposed project (EKL, 2016). The WSCP is a flexible set of planned response measures linked to increasing degrees, or stages, of future water supply shortages and describes customer restrictions and prohibitions and consumption methods for each stage.

The project-specific WSA indicates that Redwood City's projected water supply is currently uncertain because it depends on whether and when the Bay-Delta Plan Amendment¹⁷ would be implemented. Given this uncertainty, the WSA analyzed water supply and demand under three scenarios: (1) No implementation of the Bay-Delta Plan Amendment or Voluntary Agreement; (2) Implementation of the Voluntary Agreement;¹⁸ and (3) Implementation of the Bay-Delta Plan Amendment. The WSA determined that under Scenario 1 and Scenario 2 the City would have sufficient water supplies to serve the project and all future demands during normal years. During single and multiple dry years, the City anticipates implementation of its WSCP to curtail demand and ensure water supplies remain sufficient. Both determinations are contingent upon the use of recycled water. As described in Chapter 2, Project Description, and as detailed in the Utilities Engineering Report provided in Appendix UTIL, the project would construct an extension of the existing recycled water pipeline to serve the project site. Refer to Figure 2-20 for a depiction of the recycled water pipeline extension into the project site.

Under Scenario 3 of the WSA, the City would have sufficient water supplies to serve the project and all future demands during normal years. However, during single and multiple dry years, the City would not have sufficient water supplies to meet demand, with or without the project, even with implementation of the City's WSCP. Accounting for reductions in demand from the WSCP, under Scenario 3 during a single

¹⁷ The Bay Delta Plan Amendment was adopted in December 2018 by the State Water Resources Control Board to establish water quality objectives and maintain the health of the Bay-Delta ecosystem. Pending implementation would require the release of 40 percent of the flow of three San Joaquin River tributaries from February to June of each year to increase salmonid populations.

¹⁸ Negotiations regarding a potential Voluntary Agreement are currently underway among key stakeholders to the Bay Delta Plan, which would provide an alternative to implementation of the Bay Delta Plan Amendment.

dry year the City would experience a supply shortfall of 379 afy, or 5.2%, without the proposed project; with the proposed project, there would be a supply shortfall of 390 afy, or 5.3%. During a multiple dry year scenario, the supply shortfall would be 2,004 afy, or 27.3, without the proposed project; with the proposed project, the supply shortfall would be 2,014 afy, or 27.4%.

As explained in the WSA, the potential water supply shortfall under this scenario is not a result of the proposed project, but rather a state-level change to the flows and water quality objectives affecting waterways that contribute to the City's water supply. Although approved in 2018, the amendments are being litigated, introducing uncertainty about when they may become effective and if they might be further revised. If implemented as approved, they would affect all existing and planned development in the City during single and multiple dry years. Furthermore, because the demand from the proposed project is incorporated in the growth and water demand/supply projections contained in the UWMP, the supply shortfalls under Scenario 3 are not specifically attributable to the incremental demand associated with the proposed project. For these reasons, a project-only environmental analysis of this issue is not relevant or warranted. Rather, an analysis within the cumulative context is appropriate; specifically, cumulative project development¹⁹ that has the potential to require new or expanded water supply facilities or require the City or San Francisco Public Utilities Commission (SFPUC) to take other actions, which in turn could result in significant physical environmental impacts related to water supply.

The analysis that follows considers whether the proposed project in combination with both existing development and projected growth would require new or expanded water supply facilities, the construction or relocation of which could have significant cumulative impacts on the environment. The analysis also considers whether a high level of rationing would be required that could have significant cumulative impacts and whether the project would make a considerable contribution to any significant cumulative impacts.

The City of Redwood City receives 100% of its potable water supply from the SFPUC regional water system. To address the potential limitations to the regional water system under Scenario 3, SFPUC is increasing and accelerating efforts to acquire additional water supplies and increase overall water supply resilience. As detailed in the WSA, capital projects under consideration to expand water supply include surface water storage expansion, recycled water expansion, water transfers, desalination, and potable reuse. However, because these projects are in the early planning stages, have high costs, and would require 10 to 30 years to implement, the associated yield is not currently included in the SFPUC water supply projections.

Similarly, due to the conceptual nature of these water supply capital improvement projects, the physical environmental impacts that could result from these projects is considered speculative, and would not be expected to be reasonably determined for a period of time ranging from 10 to 30 years. Although it is not possible at this time to identify the specific environmental impacts that could result, this analysis assumes that if new or expanded water supply facilities, such as those described in the WSA, were developed, the construction and/or operation of such facilities could result in significant adverse environmental impacts, and this would be a significant cumulative impact.

As mentioned above and detailed in the WSA, the proposed project's potable water demand of 10.3 afy would increase the City's supply shortfall under Scenario 3 by 0.1% during both single and multiple dry years. Thus, new or expanded dry-year water supplies would be needed under Scenario 3 regardless of whether the proposed project is constructed, and any physical environmental impacts related to the construction and/or operation of new or expanded water supplies would occur with or without the proposed project. Therefore, the proposed project would not have a considerable contribution to any

¹⁹ Cumulative development includes projected citywide growth accounted for in the UWMP, City General Plan, and project WSA.

significant cumulative impacts that could result from the construction or operation of new or expanded water supply facilities developed in response to the Bay-Delta Plan Amendment.

Higher levels of rationing on a citywide basis that could be required under the Bay-Delta Plan Amendment (Scenario 3) could also lead directly or indirectly to significant cumulative impacts. Direct impacts may include loss of vegetation cover resulting from prolonged irrigation restrictions. Indirect impacts may result if future development is encouraged to occur in non-urbanized areas to avoid substantial water rationing—the resulting potential to increase sprawl is associated with various environmental impacts such as increased greenhouse gas emissions and air pollution, higher energy use, loss of farmland, and an overall increase in water use from less water-efficient development. Therefore, higher levels of citywide rationing that may occur under Scenario 3 could lead directly or indirectly to significant cumulative impacts.

The proposed project itself would not be expected to contribute to a loss of vegetation because non-potable recycled water would remain available for irrigation in dry years. In addition, the potential citywide shortfalls under Scenario 3 would occur with or without the proposed project, and the project's estimated incremental contribution to the shortfall of 0.1% would have a negligible effect on the levels of rationing that would be required in dry years. Consequently, temporary rationing that could be imposed on the project would not cause or substantially contribute to cumulative environmental effects associated with the high levels of rationing that may be required citywide under Scenario 3. Therefore, the project would not make a considerable contribution to any significant cumulative impacts that may result from increased rationing that may be required with implementation of the Bay-Delta Plan Amendment (Scenario 3), were it to occur.

In conclusion, the need to develop new or expanded water supplies in response to the Bay Delta Plan Amendment and any resulting environmental impacts would occur irrespective of the water demand associated with the proposed project. Furthermore, the small increase in potable water demand attributable to the project compared to citywide demand would not substantially affect the levels of dry-year rationing that would otherwise be required throughout the city. Thus, the proposed project would not make a considerable contribution to a significant cumulative impact caused by implementation of the Bay-Delta Plan Amendment. Therefore, for the reasons described above, under all three scenarios described in the WSA, the impact related to water supply would be less than significant.

Regarding emergency water storage, similar to the 2018 project, the proposed project would be required to meet the required fire flow velocities and flow durations pursuant to the California Fire Code and Redwood City Engineering Standards. As with the 2018 project, Initial Study Mitigation Measure UTL-2, Emergency Water Storage, would require the project applicant to contribute funds equivalent to the cost of providing emergency water storage for all proposed uses. As a result, the impact would remain less than significant, similar to the 2018 project.

6.2.18.3 Wastewater

The proposed project would generate a higher amount of wastewater than the 2018 project. However, the Silicon Valley Clean Water Wastewater Treatment Plant would have adequate capacity to accept wastewater produced by the proposed project. Redwood City has a maximum allocated output of 11.4 million gallons per day (MGD) and, as noted in the Initial Study, the City's 2015 output of 5.8 MGD used about 51% of that capacity. The proposed project would contribute approximately 0.15 MGD to the wastewater treatment plant, or a net contribution of 0.08 MGD when accounting for existing land uses; these volumes represent approximately 1.3% (gross) and 0.7% (net) of the City's allocated output. Similar to the 2018 project, the proposed project would be required to comply with existing wastewater treatment requirements of the San Francisco Bay RWQCB and water conservation policies enacted by

the City, which would minimize the amount of wastewater generated. As described in Chapter 2, Project Description, the proposed project includes an upgraded segment of a sewer collection pipeline to ensure sufficient system capacity during project operations (refer to Figure 2.21). Therefore, the proposed project would not alter the less-than-significant impact conclusions reported in the Initial Study.

6.2.18.4 Solid Waste

Similar to the 2018 project, the proposed project would require demolition of existing development, and generate various construction-period wastes, including scrap lumber, scrap finishing materials, various scrap metals, and other recyclable and nonrecyclable construction-related wastes. As described in the Initial Study, there would be sufficient landfill capacity to accommodate solid-waste disposal needs for the 2018 project. The proposed project, like the 2018 project, would comply with City recycling programs to reduce the volume of solid waste transported to landfills. Additionally, the proposed project would comply with all statutes and regulations related to solid waste, including the 2016 CALGreen Code, the Recycling and Salvaging of Construction and Demolition Debris Code (Section 9, Article XI of the Redwood City Municipal Code), Assembly Bill (AB) 341, and AB 1826. As a result, the impacts related to solid waste would be less than significant, the same as for the 2018 project. Therefore, the proposed project would not alter the less-than-significant impact conclusions reported in the Initial Study.

6.2.19 Wildfire

Because there are no high fire hazard areas or wildlands susceptible to wildfire in the project vicinity, the changes between the 2018 project and the proposed project would have no effect on wildfire hazards. The proposed project is on the same site as the 2018 project in an urban infill area. Therefore, the proposed project would not alter the no impact conclusion related to wildfires reported in the Initial Study.

6.3 References

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Chapter 7. Other Required CEQA Topics

This chapter identifies potentially significant and irreversible changes resulting from the project, and growth-inducing impacts of the project, as required under the California Environmental Quality Act (CEQA) Guidelines Sections 15126(c) and 15126(d), respectively. A discussion of the significant and unavoidable impacts of the project, as required under State CEQA Guidelines Section 15126.2(c), is provided in Chapter 4 of this environmental impact report (EIR).

7.1 Glossary

- **CEQA:** California Environmental Quality Act
- **City:** City of Redwood City
- **EIR:** environmental impact report

7.2 Significant Irreversible Changes Due to the Project

The State CEQA Guidelines Section 15126(c) require that an EIR identify significant irreversible changes that would be caused by project implementation. Irreversible environmental changes are primarily related to the use of nonrenewable resources, and the effects that this use could have on future generations. Irreversible effects result primarily from the use or destruction of a specific resource, such as energy and minerals, that cannot be replaced within a reasonable time frame.

7.2.1 Land Use Changes that Commit Future Generations

The proposed project would demolish the existing land uses and develop one building each on Parcels A through F for residential and commercial land uses. This change in land use would represent a long-term commitment to new land uses, because the likelihood for developed land to revert to the project site's current land uses is highly unlikely. This conversion of the land to residential uses would, however, be generally consistent with the City of Redwood City's (City's) General Plan, which is the community's blueprint and vision for future development of the City. Additionally, because the project site is already urbanized, redevelopment under the proposed project would not represent a substantial land use change.

7.2.2 Irreversible Damage from Environmental Accidents

For the reasons that follow, the proposed project is not likely to result in irreversible damage from environmental accidents, such as an accidental spill or explosion of a hazardous material. Although project construction activities, including demolition, would involve a potential for accidental release of hazardous materials, the associated activities would be subject to monitoring by City staff, and compliance with applicable local, state, and federal laws and regulations, as further described in the

project Initial Study (Appendix IS), Section 4.9, Hazards and Hazardous Materials. Moreover, in accordance with the prescribed mitigation measures provided in the Initial Study, project construction would result in cleanup of existing hazardous materials encountered during project demolition and excavation. Proposed project operations would involve activities typical of residential and commercial land uses and involve household/office quantities and types of hazardous materials; therefore, the proposed project would not represent a substantial risk of damage from environmental accidents.

7.2.3 Large Commitment of Nonrenewable Resources

Energy used during project construction would be expended in the form of electricity, gasoline, and diesel fuel, which would be used primarily by construction equipment, trucks delivering equipment and supplies to the site, and construction workers driving to and from the site. There are no unusual project characteristics that would necessitate the use of construction equipment that would be less energy-efficient than at comparable construction sites in other parts of the City. Therefore, it is not expected that fuel consumption during construction activities would be more inefficient, wasteful, or unnecessary than at other construction sites in the region.

Other nonrenewable and slowly renewable resources consumed as a result of project development would include, but not necessarily be limited to, lumber and other forest products, sand and gravel, asphalt, petrochemical construction materials, and water. However, the project would be required to comply with and implement measures to reduce or offset the need for such resources, including the State's Green Building Standards Code provided under Title 24 of the California Code of Regulations. Compliance with Part 11 of Title 24 requires the project to reduce water consumption by 20%; divert 50% of construction waste from landfills; and install low-pollutant-emitting materials. Furthermore, the City does not contain any agricultural land or a mining reserve; therefore, there would be no impact to those resources. Therefore, the use of these nonrenewable resources would account for only a small portion of the region's resources, and would not affect the availability of these resources for other needs in the region.

7.3 Growth-Inducing Impacts of the Project

As required by CEQA, an EIR must discuss the ways in which a project could directly or indirectly foster economic or population growth or the construction of additional housing; and how that growth could, in turn, affect the environment (State CEQA Guidelines Section 15126[d]). Growth can be induced in a number of ways, including by eliminating obstacles to growth and stimulating economic activity outside of the project. Under CEQA, induced growth is not necessarily considered beneficial or detrimental. Induced growth is considered a significant impact only if it directly or indirectly affects the ability of agencies to provide needed public services, or if it can be demonstrated that the potential growth could, in some other way, have a significant adverse effect on the environment.

The proposed project would demolish the existing land uses on the project site, and develop 540 multi-family residential units, and approximately 530,000 square feet of office uses, an 8,400-square-foot childcare facility, and 29,000 square feet of retail uses. Applying the Redwood City average of 2.7 residents per unit, the project would result in an increase of about 1,460 permanent residents, or an approximately 1.7% increase over the 2018 population in Redwood City (City 2019a). The proposed new housing units would be available by 2023, and represent about 6% of the 9,103 new housing units anticipated under buildout under the 2030 General Plan (City 2010: Chapter 4.11, Population and Housing). Based on the total non-residential square footage to be developed and a ratio of 264 gross square feet per employee,²⁰ the proposed project would generate an estimated 2,150 new jobs (City

²⁰ The City's General Plan EIR estimates that 6,683,959 net new square feet of non-residential development projected for 2030 would generate 25,323 employees ($6,683,959 \div 264 = 25,323$).

2010: Chapter 3, Project Description). This represents an approximately 3.1% increase in the estimated number of jobs in Redwood City in 2018 (City 2019b: Table 4.11-7).

As described above, the proposed project would directly increase population and employment in the project area. However, the new housing units would fall well within the number of new housing units anticipated under the General Plan. Similarly, the resulting population increase of about 1.7% and jobs increase of 3.1% do not represent a substantial increase to the 2018 estimates of population and jobs in Redwood City. Furthermore, the proposed project would be consistent with the General Plan land use designation for the project site, and the relevant goals of the El Camino Real Corridor Plan and the Downtown Precise Plan, such as development of affordable housing and a balanced mix of commercial and residential land uses.

Thus, although the proposed project would result in an increase to population, housing, and employment, such growth would not be substantial relative to existing conditions, and the increases would not exceed the planned growth in Redwood City as provided for in the General Plan and Downtown Precise Plan. Given the proximity of the proposed project site to transit, the population and employment growth resulting from project implementation would serve to shift transportation modes away from private vehicle use and towards transit, pedestrian, and bicycle modes, as discussed in Section 3.5, Transportation. In that regard, development of the proposed project on an urbanized infill site would not induce sprawl and the associated issues with dispersed patterns of land use development, but instead would promote the City's housing development goals, consistent with sustainable regional planning efforts such as Plan Bay Area. Because transportation and other infrastructure proposed for the project site would be developed consistent with applicable land use and transportation plans, project implementation does not have the potential to induce unplanned growth.

Additionally, improvements to stormwater facilities and on-site water and wastewater infrastructure required to serve the proposed project would be sized to accommodate project-related demands, and would not be intended to serve development on lands other than the project site. Because the infrastructure for the proposed project would be upsized or extended to serve the projected demands of the project, the proposed project would not result in indirect growth-inducing effects by increasing the capacity of infrastructure to serve additional development (see discussion of utilities in Chapter 2, Project Description, and the Utilities Engineering Report provided in Appendix UTIL). A possible exception is the proposed extension of the existing 36-inch recycled water pipeline into the project site. Although this extension would facilitate additional future extensions of the recycled water pipeline into currently unserved areas, and thereby increase the overall supply of water not otherwise available, it would be consistent with the Redwood City Recycled Water Ordinance and the Recycled Water Service Area as defined in the ordinance. Moreover, the use of recycled water is accounted for in the City's 2015 Urban Water Supply Management Plan (City 2015), which in turn was prepared in accordance with the General Plan. Therefore, construction of the recycled water pipeline extension under the proposed project would not result in the potential for unplanned growth, or any indirect impacts resulting from induced growth.

In sum, the proposed project would not cause any substantial adverse effects beyond those already disclosed in Chapter 3, Environmental Evaluation, of this DEIR, and the supporting Initial Study analysis provided in Appendix IS.

7.4 References

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