



200 Portage Avenue Townhome Project

Draft Environmental Impact Report

SCH#2021120444

prepared by

City of Palo Alto

Planning and Development Services Department

250 Hamilton Avenue

Palo Alto, California 94301

Contact: Claire Raybould, AICP, Senior Planner

prepared with the assistance of

Rincon Consultants, Inc.

449 15th Street, Suite 303

Oakland, California 94612

September 2022

200 Portage Avenue Townhome Project

Draft Environmental Impact Report

SCH#2021120444

prepared by

City of Palo Alto

Planning and Development Services Department

250 Hamilton Avenue

Palo Alto, California 94301

Contact: Claire Raybould, AICP, Senior Planner

prepared with the assistance of

Rincon Consultants, Inc.

449 15th Street, Suite 303

Oakland, California 94612

September 2022



RINCON CONSULTANTS, INC.

Environmental Scientists | Planners | Engineers

rinconconsultants.com

This report prepared on 50% recycled paper with 50% post-consumer content.

Table of Contents

Executive Summary	ES-1
Project Synopsis	ES-1
Project Objectives	ES-3
Alternatives	ES-3
Areas of Known Controversy	ES-4
Issues to be Resolved	ES-4
Summary of Impacts and Mitigation Measures	ES-4
1 Introduction	1-1
1.1 Environmental Impact Report Background	1-1
1.2 Purpose and Legal Authority	1-2
1.3 Scope and Content	1-2
1.4 Lead, Responsible, and Trustee Agencies	1-3
1.5 Environmental Review Process	1-3
2 Project Description	2-1
2.1 Lead Agency and Contact	2-1
2.2 Project Applicant	2-1
2.3 Project Location	2-1
2.4 Existing Site Characteristics	2-4
2.4.1 Current Land Use Designation	2-4
2.4.2 Current Zoning	2-4
2.4.3 Surrounding Land Uses	2-5
2.4.4 Existing Project Site Conditions	2-5
2.5 Project Description	2-7
2.5.1 Proposed Parcel Changes	2-7
2.5.2 Proposed Residential Development	2-7
2.5.3 Proposed Improvement to Existing Building	2-10
2.5.4 Circulation, Access, and Parking	2-10
2.5.5 Landscaping and Open Space	2-10
2.5.6 Building and Architecture	2-12
2.5.7 Construction	2-12
2.5.8 Utilities	2-12
2.5.9 Palo Alto Green Building Checklist	2-12
2.6 Project Objectives	2-13
2.7 Required Approvals	2-13
2.8 California Native American Tribal Consultation	2-13

3	Environmental Setting	3-1
3.1	Regional Setting	3-1
3.2	Project Setting.....	3-1
3.3	Cumulative Development	3-2
4	Environmental Impact Analysis	4-1
4.1	Air Quality	4.1-1
4.1.1	Setting.....	4.1-1
4.1.2	Impact Analysis	4.1-10
4.2	Cultural Resources and Tribal Cultural Resources	4.2-1
4.2.1	Setting.....	4.2-1
4.2.2	Impact Analysis	4.2-11
4.3	Energy	4.3-1
4.3.1	Setting.....	4.3-1
4.3.2	Impact Analysis	4.3-10
4.4	Greenhouse Gas Emissions	4.4-1
4.4.1	Setting.....	4.4-1
4.4.2	Impact Analysis	4.4-12
4.5	Hazards and Hazardous Materials	4.5-1
4.5.1	Setting.....	4.5-1
4.5.2	Impact Analysis	4.5-14
4.6	Land Use and Planning.....	4.6-1
4.6.1	Setting.....	4.6-1
4.6.2	Regulatory Setting	4.6-2
4.6.3	Impact Analysis	4.6-4
4.7	Noise	4.7-1
4.7.1	Setting.....	4.7-1
4.7.2	Impact Analysis	4.7-8
4.8	Transportation	4.8-1
4.8.1	Setting.....	4.8-1
4.8.2	Impact Analysis	4.8-10
4.9	Effects Found Not to be Significant.....	4.9-1
4.9.1	Aesthetics	4.9-1
4.9.2	Agricultural Resources	4.9-1
4.9.3	Biological Resources	4.9-2
4.9.4	Geology and Soils.....	4.9-5
4.9.5	Hydrology and Water Quality	4.9-12
4.9.6	Mineral Resources	4.9-16
4.9.7	Population and Housing.....	4.9-16
4.9.8	Public Services	4.9-17

4.9.9	Recreation.....	4.9-19
4.9.10	Utilities and Service Systems	4.9-20
4.9.11	Wildfire	4.9-23
5	Other CEQA Required Discussions.....	5-1
5.1	Growth Inducement.....	5-1
5.1.1	Population Growth	5-1
5.1.2	Economic Growth	5-1
5.1.3	Removal of Obstacles to Growth.....	5-2
5.2	Irreversible Environmental Effects.....	5-2
5.3	Energy Effects.....	5-3
6	Alternatives.....	6-1
6.1	Alternative 1: No Project Alternative.....	6-2
6.1.1	Description.....	6-2
6.1.2	Impact Analysis	6-2
6.2	Alternative 2: Adaptive Reuse of Eligible Historic Resource for Housing	6-4
6.2.1	Description.....	6-4
6.2.2	Impact Analysis	6-5
6.3	Alternative 3: Development Agreement.....	6-12
6.3.1	Description.....	6-12
6.3.2	Impact Analysis	6-15
6.4	Environmentally Superior Alternative	6-20
7	References	7-1
7.1	Bibliography	7-1
7.2	List of Preparers	7-11

Tables

Table ES-1	Project Characteristics	ES-2
Table ES-2	Summary of Environmental Impacts, Mitigation Measures, and Residual Impacts.....	ES-5
Table 1-1	Written NOP Comments and EIR Response	1-1
Table 2-1	Proposed Residential Development Summary	2-7
Table 3-1	Cumulative Projects List.....	3-2
Table 4.1-1	Federal and State Ambient Air Quality Standards	4.1-4
Table 4.1-2	Ambient Air Quality Data	4.1-5
Table 4.1-3	Air Quality Thresholds of Significance.....	4.1-11
Table 4.1-4	Estimated Construction Emissions.....	4.1-15
Table 4.1-5	Estimated Operational Daily Emissions.....	4.1-15
Table 4.1-6	Estimated Operational Annual Emissions	4.1-16
Table 4.3-1	CPAU Service Area Electricity Consumption	4.3-3
Table 4.3-2	Project Construction Fuel Consumption	4.3-12

200 Portage Avenue Townhome Project

Table 4.3-3	Project Operational Energy Consumption	4.3-13
Table 4.3-4	Project Consistency with S/CAP	4.3-14
Table 4.3-5	Project Consistency with Comprehensive Plan	4.3-15
Table 4.4-1	GHG Significance Thresholds – Project Level	4.4-13
Table 4.4-2	Combined Annual Emissions of Greenhouse Gases	4.4-16
Table 4.4-3	Project Consistency with Plan Bay Area 2050	4.4-17
Table 4.4-4	Project Consistency with S/CAP	4.4-18
Table 4.4-5	Project Consistency with the City of Palo Alto 2030 Comprehensive Plan	4.4-19
Table 4.6-1	Project Consistency with the City of Palo Alto 2030 Comprehensive Plan	4.6-5
Table 4.6-2	Project Consistency with PAMC RM-30 Development Standards	4.6-8
Table 4.6-3	Project Consistency with PAMC GM Development Standards	4.6-9
Table 4.6-4	Project Consistency with the NVCAP Vision	4.6-9
Table 4.7-1	AASHTO Maximum Vibration Levels for Preventing Damage	4.7-3
Table 4.7-2	Vibration Annoyance Potential Criteria	4.7-3
Table 4.7-3	Project Site Short-Term Noise Monitoring Results	4.7-4
Table 4.7-4	Project Site Long-Term Noise Monitoring Results	4.7-5
Table 4.5-5	Palo Alto Land Use Compatibility for Community Noise Environments	4.7-7
Table 4.7-6	AASHTO Maximum Vibration Levels for Preventing Damage	4.7-9
Table 4.7-7	Human Response to Steady State Vibration	4.7-10
Table 4.7-8	Human Response to Transient Vibration	4.7-10
Table 4.7-9	Modeled HVAC Noise Levels	4.7-11
Table 4.7-10	Average Daily Traffic under Existing and Existing Plus Project Conditions	4.7-12
Table 4.7-11	Average Daily Traffic under Background and Background Plus Project Conditions	4.7-12
Table 4.7-12	Average Daily Traffic under Cumulative (2040) and Cumulative Plus Project Conditions	4.7-13
Table 4.5-13	Significance of Changes in Operational Roadway Noise Exposure	4.7-13
Table 4.7-14	Existing and Existing + Project Traffic Noise	4.7-16
Table 4.7-15	Background and Background + Project Traffic Noise	4.7-17
Table 4.7-16	Cumulative Year 2040 and Cumulative Year 2040 + Project Traffic Noise	4.7-18
Table 4.8-1	Intersection Operations under Existing Conditions	4.8-4
Table 4.8-2	Bicycle Facilities in Project Vicinity	4.8-7
Table 4.8-3	Project Trip Generation	4.8-12
Table 4.8-4	Trip Distribution Assumptions	4.8-13
Table 4.8-5	Intersection Operations under Existing and Existing Plus Project Conditions	4.8-15
Table 4.8-6	Intersection Operations under Background and Background Plus Project Conditions	4.8-16
Table 4.8-7	Vehicle Miles Traveled Analysis Summary	4.8-19
Table 4.8-8	Intersection Operations under Cumulative and Cumulative Plus Project Conditions	4.8-21
Table 4.9-1	City of Palo Alto 2020 to 2045 Projected Water Supply	4.9-21

Table 4.9-2	Estimated Wastewater Generation – 200 Portage Avenue Project	4.9-22
Table 4.9-3	Estimated Solid Waste Generation	4.9-23
Table 6-1	Comparison of Alternatives	6-2
Table 6-2	Alternative 2 Estimated Construction Emissions	6-5
Table 6-3	Alternative 2 Estimated Operational Emissions.....	6-7
Table 6-4	Alternative 2 Combined Annual Emissions of Greenhouse Gases	6-9
Table 6-5	Alternative 3 Parcels	6-13
Table 6-6	Alternative 3 Estimated Construction Emissions	6-15
Table 6-7	Alternative 3 Estimated Operational Emissions.....	6-15
Table 6-8	Alternative 3 Combined Annual Emissions of Greenhouse Gases	6-17
Table 6-9	Impact Comparison of Alternatives	6-22

Figures

Figure 1-1	Environmental Review Process	1-5
Figure 2-1	Regional Location	2-2
Figure 2-2	Project Location	2-3
Figure 2-3	Photographs of Project Site — Photos 1 and 2	2-6
Figure 2-4	Proposed Townhome Project Site Plan.....	2-8
Figure 2-5	Proposed Townhome Elevations	2-9
Figure 2-6	Work Area for Improvements to Existing Building	2-11
Figure 4.5-1	Project Site and Hazardous Materials Features/Areas of Concern.....	4.5-9
Figure 4.5-2	Schools Within One-Quarter Mile of the Project Site	4.5-13
Figure 4.7-1	Noise Measurement Locations	4.7-6
Figure 4.8-1	Study Intersections Locations and Lane Geometries.....	4.8-3
Figure 4.9-1	Geologic Units Underlying the Project Site	4.9-10
Figure 6-1	Conceptual Plan for Alternative 2	6-6
Figure 6-2	Conceptual Plan for Alternative 3	6-14

Appendices

Appendix A	Notice of Preparation (NOP) and NOP Comments
Appendix B	Air Quality Modeling Results
Appendix C	Cultural Resources Studies and AB 52/SB 18 Correspondence
Appendix D	Energy Calculations
Appendix E	Greenhouse Gas Emissions Modeling Results
Appendix F	Phase I Environmental Site Assessment and Soil Investigation Report
Appendix G	Noise Measurement Data, HVAC Specifications, and Noise Modeling Results
Appendix H	Local Transportation Analysis
Appendix I	Alternatives Air Quality, GHG, and Noise Modeling Results

This page intentionally left blank

Executive Summary

This document is an Environmental Impact Report (EIR) analyzing the environmental effects of the proposed 200 Portage Avenue Townhome Project (proposed project). This section summarizes the characteristics of the proposed project, alternatives to the proposed project, and the environmental impacts and mitigation measures associated with the proposed project.

Project Synopsis

Project Applicant

Sobrato Organization
599 Castro Street, Suite 400
Mountain View, California 94041

Lead Agency and Contact

City of Palo Alto
250 Hamilton Avenue
Palo Alto, California 94301
Contact: Claire Raybould, AICP, Senior Planner, (650) 329-2116, Claire.Raybould@cityofpaloalto.org

Project Description

This EIR has been prepared to examine the potential environmental effects of the 200 Portage Avenue Townhome Project. The following is a summary of the full project description, which can be found in Section 2, *Project Description*.

For the purposes of this analysis, the “project site” encompasses approximately 14.27 acres across four parcels. The project site includes all of Assessor’s Parcel Numbers (APNs) 132-38-071, 132-32-036, 132-32-042, and 132-32-043 in the City of Palo Alto. The project site is roughly bounded by Park Boulevard to the north, Christopher Circle and Ash Street to the south, residences to the west, and commercial uses to the east.

The proposed townhome project would be located on the “area of proposed development,” which includes a portion of the project site. The area of development encompasses approximately 4.86 acres and is generally bounded by Park Boulevard to the north, commercial development to the south, Olive Avenue and residences to the west, and Matadero Creek to the east. The area of development includes all of APNs 132-32-036, 132-38-01 and portions of 132-32-042 and 132-32-043.

The majority of the site is located in a Medium Density Multiple-Family Residence District (RM-30) zone with a 2030 Comprehensive Plan land use designation of Multiple Family Residential (MF), which allows for net densities ranging from 8 to 40 units and 8 to 90 persons per acre. The parcel at 3040 Park Boulevard is located in a General Manufacturing zone (GM) with a Comprehensive Plan designation of Light Industrial, which allows for a maximum Floor Area Ratio (FAR) of up to 0.5. The proposed project would not require amendments to the City’s Comprehensive Plan or the Palo Alto Municipal Code (PAMC).

The project site includes an existing two-story commercial building located at 200 Portage Avenue that is currently used by several businesses, including software companies and a computer repair business. Total floor area of the building is approximately 232,383 square feet, which includes approximately 142,744 square feet of research and development (R&D) uses, 5,639 square feet of warehouse space, and 84,000 square feet of retail space that is currently vacant. The building has its main frontage on Park Boulevard and is surrounded on the east and west by surface parking lots. The existing building is industrial in character and was constructed in 1918. Known as the Bayside Canning Company (later occupied by Fry's Electronics store), the cannery was previously recommended eligible for listing in the California Register of Historical Resources for its association with Palo Alto's early agricultural history. On the northwest corner of the project site at 3040 Park Boulevard is a one-story building currently occupied by a fitness use. On the eastern boundary of the project site at 3250 Park Boulevard and 276 Lambert Avenue are one-story office and accessory buildings.

Project Characteristics

The proposed project would involve a vesting tentative map to subdivide and merge portions of four parcels into two parcels. On one of the new parcels (4.86 acres), the project would involve a condominium subdivision to create 91 new condominium units. The other parcel (9.41 acres) would include the remaining parts of the existing commercial building.

The proposed townhome project would involve demolition of the portion of the existing commercial building at 200 Portage Avenue and the commercial building at 3040 Park Boulevard within the area of proposed development and construction of 91 new residential units within 16 three-story buildings. Table ES-1 summarizes the project characteristics.

Table ES-1 Project Characteristics

Feature	Details
Proposed Lot Changes	
Lot Changes	Merge four existing lots into two lots: one 4.86-acre parcel for the proposed townhome project and one 9.41-acre parcel for the portions of existing development to remain
Townhome Project Characteristics	
Residential area	194,128 square feet
Floor Area Ratio (FAR)	1.39
Density	18.7 dwelling units/acre
Building Height	Maximum parapet height of 34 feet
Proposed Dwelling Units	
Three-Bedroom	59 units
Four-Bedroom	32 units
Total Units	91 units
Proposed Parking	
Garage Parking	182 (2 per residential unit)
Surface Parking	36 spaces
Total	218 spaces
Total Bicycle Parking Spaces	101 (91 in garages and 10 surface guest spaces)

Feature	Details
Proposed Open Space	
Private Open Space (private unit balconies)	8,403 square feet (92 square feet per dwelling unit)
Common Open Space	24,499 square feet (247 square feet per dwelling unit)

Project Objectives

1. Develop a well-designed ownership residential townhome project that adds diversity to the City of Palo Alto's ownership housing supply and will meet a variety of residents' needs by providing a mix of 3- and 4-bedroom units to meet the needs of families.
2. Develop residential uses (including on-site affordable units) on a site specifically designated for housing in the City of Palo Alto's Housing Element but that does not currently contain any housing, and that will help meet the City's Regional Housing Needs Assessment (RHNA) obligations.
3. Construct a single, cohesive development consisting of high-quality, contemporary urban design that respects and relates well to its surroundings and respects the historic uses at the site including the portion of the Cannery building that will remain.
4. Contribute to the concept of a "complete neighborhood" and overall balance and mix of uses in Palo Alto, consistent with the orderly development of the area and the ongoing North Ventura Coordinated Area Plan (NVCAP) process. Provide sufficient parking but do not overpark the site, consistent with regional transportation and climate policy goals.
5. Achieve the streamlined and efficient processing and approval of the project including benefits available to developments that include affordable housing consistent with State housing law, including the Housing Accountability Act, State Density Bonus Law, and Permit Streamlining Act.

Alternatives

As required by the California Environmental Quality Act (CEQA), this EIR examines alternatives to the proposed project. Studied alternatives include the following three alternatives. Based on the alternatives analysis, Alternative 2 was determined to be the environmentally superior alternative.

- Alternative 1: No Project Alternative
- Alternative 2: Adaptive Reuse of Eligible Historic Resource for Housing Alternative
- Alternative 3: Development Agreement Alternative

Alternative 1 (No Project). The No Project Alternative assumes that the 91 townhome units proposed at the 200 Portage Avenue project site would not be constructed. The existing buildings and uses on the site would remain under this alternative and uses would be governed by the City's non-conforming use regulations. This alternative would not fulfill the objectives of the proposed project because new residential units would not be developed in the near term to help the City meet its housing supply and affordability goals and would not contribute towards the concept of a "complete neighborhood" consistent with the NVCAP.

Alternative 2 (Adaptive Reuse of Eligible Historic Resource for Housing). Under Alternative 2, the CRHR-eligible building at 200 Portage would not be demolished. All of the existing uses within the cannery building and at 3040 Park would be removed and 7,400 sf of retail would be added to the site. However, because no development plans are available and it's unclear whether proposed development would comply with the secretary of the interior's standards for rehabilitation, this

analysis conservatively assumes that impacts related to cultural resources would remain significant and unavoidable. But it is assumed to be less impactful than the proposed project because demolition of a portion of the building would not occur. Because this alternative would result in fewer vehicle trips than the proposed project, associated impacts including air quality, energy, GHG emissions, and traffic noise would be reduced compared to the proposed project and would remain less than significant, the same as the proposed project. Alternative 2 would meet most of the objectives for the 200 Portage Avenue project. However, as with the proposed project, Alternative 2 may conflict with the City's Bicycle and Pedestrian Transportation Plan since an enhanced bikeway traversing the site is not included as part of the project description or site plans. Implementation of Mitigation Measure T-1 would still be required to reduce impacts to a less than significant level.

Alternative 3 (Development Agreement). Under Alternative 3, a portion of the CRHR-eligible building at 200 Portage would still be demolished and the unavoidably significant impact related to cultural resources would occur. Alternative 3 would meet all the objectives of the 200 Portage Avenue project. Although it would increase the number of housing units from 91 to 149, and accordingly would result in increased air quality, energy, noise and GHG emissions, the net new total emissions for air quality and GHG would still be below BAAQMD thresholds, and impacts related to air quality, energy, GHG emissions, and noise would be less than significant. Additionally, Alternative 3 would include a provision dedicating land to the City and a public easement for ingress/egress across the identified area for an enhanced bikeway. Because this would be documented in the Development Agreement and is therefore part of the proposed project, Mitigation Measure T-1 would no longer be required and impacts on transportation would be less than significant without mitigation.

Although none of the Alternatives (other than the No Project Alternative) would reduce the significant and unavoidable impact on a historic resource to a less than significant level, because Alternative 2 would slightly reduce impacts related to air quality, energy, GHG emissions, and traffic noise, and transportation in comparison to proposed project and Alternative 3, Alternative 2 would be considered the Environmentally Superior Alternative.

Refer to Section 6, *Alternatives*, for the complete alternatives analysis.

Areas of Known Controversy

The EIR scoping process identified areas of known controversy for the proposed project including traffic congestion and consistency with applicable bicycle facility plans. Responses to the Notice of Preparation of a Draft EIR are summarized in Section 1, *Introduction*.

Issues to be Resolved

There are no issues to be resolved that have been identified.

Summary of Impacts and Mitigation Measures

Table ES-2 summarizes the environmental impacts of the proposed project, proposed mitigation measures, and residual impacts (the impact after application of mitigation, if required). Impacts are categorized as follows:

- **Significant and Unavoidable.** An impact that cannot be reduced to below the threshold level given reasonably available and feasible mitigation measures. Such an impact requires a

Statement of Overriding Considerations to be issued if the project is approved per §15093 of the CEQA Guidelines.

- **Less than Significant with Mitigation Incorporated.** An impact that can be reduced to below the threshold level given reasonably available and feasible mitigation measures. Such an impact requires findings under §15091 of the CEQA Guidelines.
- **Less than Significant.** An impact that may be adverse, but does not exceed the threshold levels and does not require mitigation measures. However, mitigation measures that could further lessen the environmental effect may be suggested if readily available and easily achievable.
- **No Impact:** The proposed project would have no effect on environmental conditions or would reduce existing environmental problems or hazards.

Table ES-2 Summary of Environmental Impacts, Mitigation Measures, and Residual Impacts

Impact	Mitigation Measure (s)	Residual Impact
Air Quality		
Impact AQ-1. The proposed project would not conflict with or obstruct the implementation of the 2017 Clean Air Plan. This impact would be less than significant.	None required.	Less than significant without mitigation.
Impact AQ-2. Construction and operation of the proposed project would not result in emissions of criteria pollutants in excess of BAAQMD daily and annual thresholds. This impact would be less than significant.	None required.	Less than significant without mitigation.
Impact AQ-3. The proposed project would not generate substantial concentrations of carbon monoxide (CO) or create new stationary sources of toxic air contaminant (TAC) emissions. In addition, compliance with existing City of Palo Alto requirements for using best management practices for construction and air filtration recommended by the BAAQMD would reduce impacts from TACs. This impact would be less than significant.	None required.	Less than significant without mitigation.
Impact AQ-4. The proposed project would not involve uses that generate substantial odors. Construction activities, specifically operation of heavy equipment, may generate odors. However, this odor generation would be temporary in nature and limited to the duration of construction activities on the project site. This impact would be less than significant.	None required.	Less than significant without mitigation.
Cultural Resources and Tribal Cultural Resources		
Impact CUL-1. The proposed project would involve partial demolition of the building located at 200 Portage Avenue, also known as 340 Portage Avenue, which is a historical resource. Due to the irreversible alteration	CR-1 Building Recordation. Impacts resulting from the partial demolition of the warehouse building at 200 Portage Avenue, also known as 340 Portage Avenue, shall be minimized through archival documentation of as-built and as-found condition. Prior to issuance of demolition	Significant and unavoidable.

Impact	Mitigation Measure (s)	Residual Impact
of a historical resource, this impact would be significant and unavoidable.	permits, the lead agency shall ensure that documentation of the buildings and structures proposed for demolition is completed that follows the general guidelines of Historic American Building Survey (HABS)- Level III documentation. The documentation shall include high resolution digital photographic recordation, a historic narrative report, and compilation of historic research. The documentation shall be completed by a qualified architectural historian or historian who meets the Secretary of the Interior's Professional Qualification Standards for History and/or Architectural History. The original archival-quality documentation shall be offered as donated material to repositories that will make it available for current and future generations. Archival copies of the documentation also would be submitted to the City of Palo Alto and the Palo Alto Public Library, where it would be available to local researchers. Completion of this mitigation measure shall be monitored and enforced by the City of Palo Alto. CR-2 Interpretive Display. Impacts resulting from the partial demolition of the warehouse building at 200 Portage Avenue, also known as 340 Portage Avenue, shall be minimized through the installation of a high-quality, on-site interpretive display in a publicly-accessible location, preferably near or within a portion of the retained warehouse building at 200 Portage Avenue at the applicant's expense. The display could focus on the property's history, particularly the agricultural past of Santa Clara County and the canning operations of Bayside Canning Company. The interpretive display should be prepared by a professional exhibit designer and historian; historic information contained in Page & Turnbull's HRE can serve as the basis for the interpretive display. The goal of the interpretive display would be to educate the public about the property's historic themes and associations within broader cultural contexts. The content of the display shall be approved by the Director of Planning & Development Services or designee.	
Impact CUL-2. Construction of the proposed project would involve ground-disturbing activities such as grading and surface excavation, which have the potential to unearh or adversely impact previously unidentified archaeological resources. This impact would be less than significant with mitigation incorporated.	CR-3 Worker Environmental Awareness Program. Prior to commencement of any project-related construction activities, a qualified Archeologist shall provide a worker environmental awareness training to all site personnel. The training shall discuss the appearance of resources that may be encountered during construction as well as the procedures and notification process in the event of discovery. CR-4 Unanticipated Discovery of Archaeological Resources. In the event that archaeological	

Impact	Mitigation Measure (s)	Residual Impact
	resources are unearthed during project construction, all earth-disturbing work near the find must be temporarily suspended or redirected until an archaeologist meeting the Secretary of the Interior's Professional Qualification Standards for archaeology (NPS 1983) has evaluated the nature and significance of the find. If the discovery proves to be significant under CEQA (Section 15064.5f; PRC 21082), additional work, such as preservation in place or archaeological data recovery, shall occur as recommended by the archeologist in coordination with City staff and if applicable, descendants and/or stakeholder groups. Once the resource has been properly treated or protected, work in the area may resume. A Native American representative shall be retained to monitor mitigation work associated with Native American cultural material.	
Impact CUL-3. Ground-disturbing activities associated with development of the proposed project could result in damage to or destruction of human burials. Impacts would be less than significant through adherence to State Health and Safety Code Section 7050.5 and Public Resources Code Section 5097.98.	None required.	Less than significant without mitigation.
Impact CUL-4. Grading and excavation required for the proposed project would have the potential to adversely impact tribal cultural resources. Impacts would be less than significant with implementation of mitigation.	CR-5 Suspension of Work Around Tribal Cultural Resources. In the event that cultural resources of Native American origin are identified during implementation of the proposed project, all earth-disturbing work within 50 feet of the find shall be temporarily suspended or redirected until an archaeologist and culturally affiliated Native American representative have evaluated the nature and significance of the find. If the City, in consultation with local Native Americans, determines that the resource is a tribal cultural resource and thus significant under CEQA, a mitigation plan shall be prepared and implemented in accordance with state guidelines and in consultation with local Native American group(s). The plan shall include avoidance of the resource or, if avoidance of the resource is infeasible, the plan shall outline the appropriate treatment of the resource in coordination with the culturally affiliated local Native American tribal representative and, if applicable, a qualified archaeologist. Examples of appropriate mitigation for tribal cultural resources include, but are not limited to, protecting the cultural character and integrity of the resource, protecting traditional use of the resource, protecting the confidentiality of the resource, or heritage recovery.	Less than significant.

City of Palo Alto
200 Portage Avenue Townhome Project

Impact	Mitigation Measure (s)	Residual Impact
Energy		
Impact E-1. The proposed project would consume electricity and fuel during construction and operation. However, the project would not place significant additional demand on City of Palo Alto utilities and would be required to comply with applicable conservation standards. Construction and operation of new development would not result in wasteful, inefficient, or unnecessary consumption of energy. This impact would be less than significant.	None required.	Less than significant without mitigation.
Impact E-2. The project would not conflict with or obstruct state regulations or the City's 2030 Comprehensive Plan or Sustainability and Climate Action Plan. This impact would be less than significant.	None required.	Less than significant without mitigation.
Greenhouse Gas Emissions		
Impact GHG-1. The proposed project would generate GHG emissions but would not exceed the interpolated significance threshold of 660 MT CO _{2e} per year. This impact would be less than significant.	None required.	Less than significant without mitigation.
Impact GHG-2. The proposed project would be generally consistent with the applicable goals, policies, and strategies in Plan Bay Area 2050, the City of Palo Alto S/CAP, and the 2030 Comprehensive Plan, as well as state legislation (SB 32). This impact would be less than significant.	None required.	Less than significant without mitigation.
Hazards and Hazardous Materials		
Impact HAZ-1. The proposed project would include demolition of buildings with potential hazardous materials. Construction and operation of the proposed project could involve the use, storage, disposal or transportation of hazardous materials. In addition, upset or accident conditions could involve the release of hazardous materials into the environment. However, compliance with federal, state, and local regulations would reduce potential impacts. Impacts would be less than significant.	None required.	Less than significant without mitigation.
Impact HAZ-2. El Carmelo Elementary is located within one-quarter mile of the proposed project. The proposed project would not emit or handle hazardous or acutely hazardous materials. This impact would be less than significant.	None required.	Less than significant without mitigation.

Impact	Mitigation Measure (s)	Residual Impact
Impact HAZ-3. Several areas of the project site are listed on hazardous materials sites compiled pursuant to Section 65962.5 and construction activities could expose the public and environment to contaminated groundwater and soils. Known VOCs below the project site could also contribute to vapor intrusion impacts during the operation of the proposed project. This impact would be less than significant with incorporation of mitigation.	HAZ-1 Regulatory Agency Notification and Approval. Prior to the issuance of deconstruction, demolition, grading, building, or other permits necessary for beginning of construction or development, the project applicant shall contact the Santa Clara County Department of Environmental Health (SCDEH) to discuss the proposed redevelopment project, the proposed residential land use, and the prior environmental investigations. The project applicant shall provide SCDEH with the proposed site use plans regarding the conversion of commercial land use to residential land use, copies of the 2020 and 2021 PES investigative reports, and discuss the onsite presence of groundwater impacted by VOCs at the project site as well as any concerns regarding potentially impacted soils or soil vapor. SCDEH may require the project applicant to conduct additional investigation/studies, including, but not limited to, soil investigation, soil vapor surveys, and/or groundwater investigations to delineate the extent of contaminated soil, soil vapor, and groundwater. SCDEH may require approval of the final Soil Management Plan (SMP) required by Mitigation Measure HAZ-2, below, prior to issuance of any required project permits. The project applicant shall comply with SCDEH requirements, conduct further investigations as required, and submit the results to SCDEH. The SCDEH closure and agency approval documents shall be delivered to and reviewed by the project applicant. The project applicant shall furnish copies of the documents to the City Planning Department prior to issuance of grading permits. It should also be noted that SCDEH may determine that SFBRWQCB or DTSC may be best suited to perform the lead agency duties for assessment and/or remediation at the project site. Should the SFBRWQCB or DTSC serve as the oversight agency, this and other mitigation measures will still apply. If groundwater wells or soil vapor monitoring probes are identified during demolition, subsurface demolition, or construction at the project site, they will be abandoned per Santa Clara Valley Water District specifications. Abandonment activities will be documented in a letter report submitted to Santa Clara Valley Water District within 60 days of the completion of abandonment activities. HAZ-2 Site Management Plan for Impacted Soils, Soil Vapor and/or Groundwater. The project applicant shall retain a qualified environmental consultant, California Professional Geologist (PG)	Less than significant.

Impact	Mitigation Measure (s)	Residual Impact
	or California Professional Engineer (PE), to prepare a Soil Management Plan (SMP) prior to construction. The SMP, or equivalent document, will be prepared to address onsite handling and management of impacted soils, soil vapor, groundwater, or other impacted wastes, and reduce hazards to construction workers and offsite receptors during construction. The plan shall establish remedial measures and/or soil management practices to ensure construction worker safety, the health of future workers and visitors, and the off-site migration of contaminants from the project site. These measures and practices may include, but are not limited to: ▪ Stockpile management, including stormwater pollution prevention and the installation of BMPs ▪ Proper disposal procedures of contaminated materials ▪ Monitoring, reporting, and regulatory oversight notifications ▪ A health and safety plan for contractors working at the project site that addresses the safety and health hazards of each phase of site construction activities with the requirements and procedures for employee protection ▪ The health and safety plan will also outline proper soil handling procedures and health and safety requirements to minimize worker and public exposure to hazardous materials during construction. The City of Palo Alto and/or SCDEH will review and approve the SMP for impacted soils, soil vapor, and groundwater prior to issuance of any permits necessary for the beginning of construction. The project applicant will review and implement the SMP prior to and during demolition and grading (construction).	
Impact HAZ-4. The proposed project site is not located within an airport land use plan or vicinity of a private airstrip. No impact related to airport hazards would occur.	None required.	Less than significant without mitigation.
Impact HAZ-5. Implementation of the proposed project would not impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan. This impact would be less than significant.	None required.	Less than significant without mitigation.
Impact HAZ-6. The project site is in an urban area and is not near wildlands. No impact related to wildland fires would occur.	None required.	Less than significant without mitigation.

Impact	Mitigation Measure (s)	Residual Impact
Land Use and Planning		
Impact LU-1. The project would not involve development of new structures, roads, or infrastructure that would divide or separate existing communities. No impact would occur.	None required.	Less than significant without mitigation.
Impact LU-2. The project would not conflict with the goals or policies in the City's 2030 Comprehensive Plan, the Palo Alto Municipal Code, or the North Ventura Coordinated Area Plan. This impact would be less than significant.	None required.	Less than significant without mitigation.
Noise		
Impact N-1. Construction and demolition activities associated with implementation of the project would intermittently generate noise within and adjacent to the project site. However, construction noise levels would not exceed the applicable noise level thresholds. Noise associated with operation of the project would be generally similar to existing noise generated by nearby single-family residences and commercial uses and would not cause a significant change in ambient noise levels. This impact would be less than significant.	None required.	Less than significant without mitigation.
Impact N-2. Construction activities associated with implementation of the proposed project would intermittently generate groundborne vibration within and adjacent to the project site. Institutional land uses with sensitive daytime activities could be exposed to vibration levels exceeding FTA guidelines. Additionally, vibration could exceed Caltrans standards for potential damage to historical buildings due to the proximity of construction equipment with vibration levels similar to a large dozer. This impact would be less than significant with mitigation incorporated.	N-1 Vibration Reduction. The applicant shall retrofit the remaining historical building at 200 Portage/340 Portage to withstand construction vibration up to 0.4 in/sec PPV or higher (the Caltrans threshold for buildings in good repair) prior to demolition or construction activities. The structure's ability to accommodate vibration at the specific level shall be verified by a qualified engineer.	Less than significant.
Impact N-3. The project site is located outside of noise contours associated with airports. Therefore, new development under the proposed project would not be exposed to excessive noise levels from aircraft operations and no impact would occur.	None required.	Less than significant without mitigation.

Impact	Mitigation Measure (s)	Residual Impact
Transportation		
Impact T-1. The proposed project would not conflict with applicable policies addressing transit, roadway, or pedestrian facilities. However, an enhanced bikeway is planned between El Camino Real and Park Boulevard along the alignment of Portage Avenue and traversing the project site in the City's Bicycle and Pedestrian Transportation Plan and Countywide Trails Plan. Therefore, the project may conflict with these plans. This impact would be less than significant with mitigation incorporated.	T-1 Inclusion of Enhanced Bikeway. The project applicant shall modify the project to include an appropriate enhanced bikeway facility that is consistent with the City's Bicycle and Pedestrian Transportation Plan and County of Santa Clara's Countywide Trails Plan and provide an easement to make the enhanced bikeway facility accessible to the public.	Less than significant.
Impact T-2. Vehicle miles traveled (VMT) attributable to the proposed project would not exceed the City's thresholds for residential projects. Therefore, the impact related to VMT would be less than significant.	None required.	Less than significant without mitigation.
Impact T-3. The proposed project would not introduce design features or incompatible uses that could increase traffic hazards. This impact would be less than significant.	None required.	Less than significant without mitigation.
Impact T-4. The project would meet City design standards and would provide adequate access for emergency vehicles. This impact would be less than significant.	None required.	Less than significant without mitigation.
Biological Resources		
The project may result in impacts to protected nesting bird species. This impact would be significant but mitigable. (See Section 4.9, <i>Effects Found not to be Significant</i>)	BIO-1 Nesting Bird Surveys and Avoidance. Construction of the project and any other site disturbing activities that would involve vegetation or tree removal, shall be prohibited during the general avian nesting season (February 1 – August 31), if feasible. If nesting season avoidance is not feasible, the applicant shall retain a qualified biologist, as approved by the City of Palo Alto, to conduct a preconstruction nesting bird survey to determine the presence/absence, location, and activity status of any active nests on or adjacent to the project site. The extent of the survey buffer area surrounding the site shall be established by the qualified biologist to ensure that direct and indirect effects to nesting birds are avoided. To avoid the destruction of active nests and to protect the reproductive success of birds protected by the MBTA and CFGC, nesting bird surveys shall be performed not more than 14 days prior to scheduled vegetation clearance and structure demolition. In the event that active nests are discovered, a suitable buffer (typically a minimum buffer of 50 feet for passerines and a	Less than significant

Impact	Mitigation Measure (s)	Residual Impact
	minimum buffer of 250 feet for raptors) shall be established around such active nests and no construction shall be allowed within the buffer areas until a qualified biologist has determined that the nest is no longer active (i.e., the nestlings have fledged and are no longer reliant on the nest). No ground disturbing activities shall occur within this buffer until the qualified biologist has confirmed that breeding/nesting is completed, and the young have fledged the nest. Nesting bird surveys are not required for construction activities occurring between August 31 and February 1.	

This page intentionally left blank.

1 Introduction

This document is an Environmental Impact Report (EIR) for the proposed 200 Portage Avenue Townhome Project. The proposed project would involve the demolition of a portion of the existing commercial building at 200 Portage Avenue and the commercial building at 3040 Park Boulevard. The project includes a proposed tentative map and final map to merge and subdivide four parcels in order to create two resulting parcels, one parcel of 4.86 acres for the proposed townhome development, including condominium parcels for each proposed townhome, and one parcel of 9.41 acres for the portions of existing development to remain. The project would involve construction of 91 new condominium units distributed throughout 16 three-story buildings.

This section discusses (1) the project and EIR background; (2) the legal basis for preparing an EIR; (3) the scope and content of the EIR; (4) issue areas found not to be significant by the Initial Study; (5) the lead, responsible, and trustee agencies; and (6) the environmental review process required under the California Environmental Quality Act (CEQA). The proposed project is described in detail in Section 2, *Project Description*.

1.1 Environmental Impact Report Background

The City of Palo Alto distributed a Notice of Preparation (NOP) of the EIR for a 30-day agency and public review period starting on December 20, 2021 and ending on January 19, 2022. The City received four written letters in response to the NOP during the comment period. The NOP and NOP responses are presented in Appendix A of this EIR. Table 1-1 summarizes the content of the NOP response letters and describes how and where the issues raised are addressed in the EIR.

Table 1-1 Written NOP Comments and EIR Response

Commenter	Comment/Request	How and Where It was Addressed
Native American Heritage Commission	This comment letter is a summary of requirements under state law related to cultural resources, tribal cultural resources, and Native American tribal outreach.	Section 4.2, <i>Cultural Resources</i> , includes an explanation of how the project complies with the applicable requirements described in the letter.
California Department of Transportation (Caltrans)	The commenter explains that a vehicle miles traveled (VMT) analysis should be prepared and provides information that should be included in the VMT analysis. The commenter states the City of Palo Alto is responsible for project mitigation including improvements to the State Transportation Network. The commenter states that if Caltrans facilities are impacted by the project the facilities must meet American Disabilities Act standards and an encroachment permit would be needed.	Section 4.8, <i>Transportation</i> , includes a VMT analysis for the project. The project would not involve impacts to Caltrans facilities or the State Transportation Network.
County of Santa Clara	The commenter indicates that the Countywide Trails Master Plan includes the Matadero Creek/Page Mill Trail in the project vicinity and recommends the EIR evaluate and assess impacts related to the trail.	Section 4.8, <i>Transportation</i> , includes an analysis of impacts related to bicycle and pedestrian facilities and consistency with bicycle and pedestrian plans.

Commenter	Comment/Request	How and Where It was Addressed
Herb Borock	The commenter provides comments related to project parking and the potential for cut-through traffic and states that there is a need for parkland in the neighborhood.	Section 4.8, <i>Transportation</i> , includes an information analysis related to impacts to the local transportation system. Section 4.9, <i>Effects Found Not to be Significant</i> , includes an analysis of impacts related to parks and recreation.

1.2 Purpose and Legal Authority

The proposed project requires the discretionary approval of the City of Palo Alto City Council and a recommendation from the Architectural Review Board; therefore, the project is subject to the environmental review requirements of CEQA. In accordance with *CEQA Guidelines* Section 15121 (California Code of Regulations, Title 14), the purpose of this EIR is to serve as an informational document that:

“...will inform public agency decision makers and the public generally of the significant environmental effects of a project, identify possible ways to minimize the significant effects, and describe reasonable alternatives to the project.”

This EIR has been prepared as a project EIR pursuant to *CEQA Guidelines* Section 15161. A Project EIR is appropriate for a specific development project. As stated in the *CEQA Guidelines*:

“This type of EIR should focus primarily on the changes in the environment that would result from the development project. The EIR shall examine all phases of the project, including planning, construction, and operation.”

This EIR is to serve as an informational document for the public and City of Palo Alto decision makers. The process will include public hearings before the Planning Commission to consider certification of a Final EIR and approval of the proposed project.

1.3 Scope and Content

Impacts related to the following issue areas were found to be potentially significant and have been studied in depth in the EIR:

- Air Quality
- Cultural Resources
- Energy
- Greenhouse Gas Emissions
- Hazards and Hazardous Materials
- Land Use and Planning
- Noise
- Transportation

Impacts in the following issue areas were found to be less than significant or less than significant with mitigation and are analyzed in Section 4.9, *Effects Found not to Be Significant*.

- Aesthetics
- Agriculture and Forestry Resources
- Biological Resources
- Geology and Soils
- Hydrology and Water Quality
- Population and Housing
- Public Services
- Recreation
- Utilities and Service Systems
- Wildfire

In preparing the EIR, use was made of pertinent City policies and guidelines, certified EIRs and adopted CEQA documents, and other background documents. A full reference list is contained in Section 7, *References and Preparers*.

The alternatives section of the EIR (Section 6) was prepared in accordance with *CEQA Guidelines* Section 15126.6 and focuses on alternatives that are capable of eliminating or reducing significant adverse effects associated with the project while feasibly attaining most of the basic project objectives. In addition, the alternatives section identifies the “environmentally superior” alternative among the alternatives assessed. The alternatives evaluated include the CEQA-required “No Project” alternative and three alternative development scenarios for the project area.

The level of detail contained throughout this EIR is consistent with the requirements of CEQA and applicable court decisions. *CEQA Guidelines* Section 15151 provides the standard of adequacy on which this document is based. The *Guidelines* state:

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

1.4 Lead, Responsible, and Trustee Agencies

The *CEQA Guidelines* define lead, responsible and trustee agencies. The City of Palo Alto is the lead agency for the project because it holds principal responsibility for approving the project.

A responsible agency refers to a public agency other than the lead agency that has discretionary approval over the project. There are no responsible agencies for this project, and no discretionary approval from other public agencies is required.

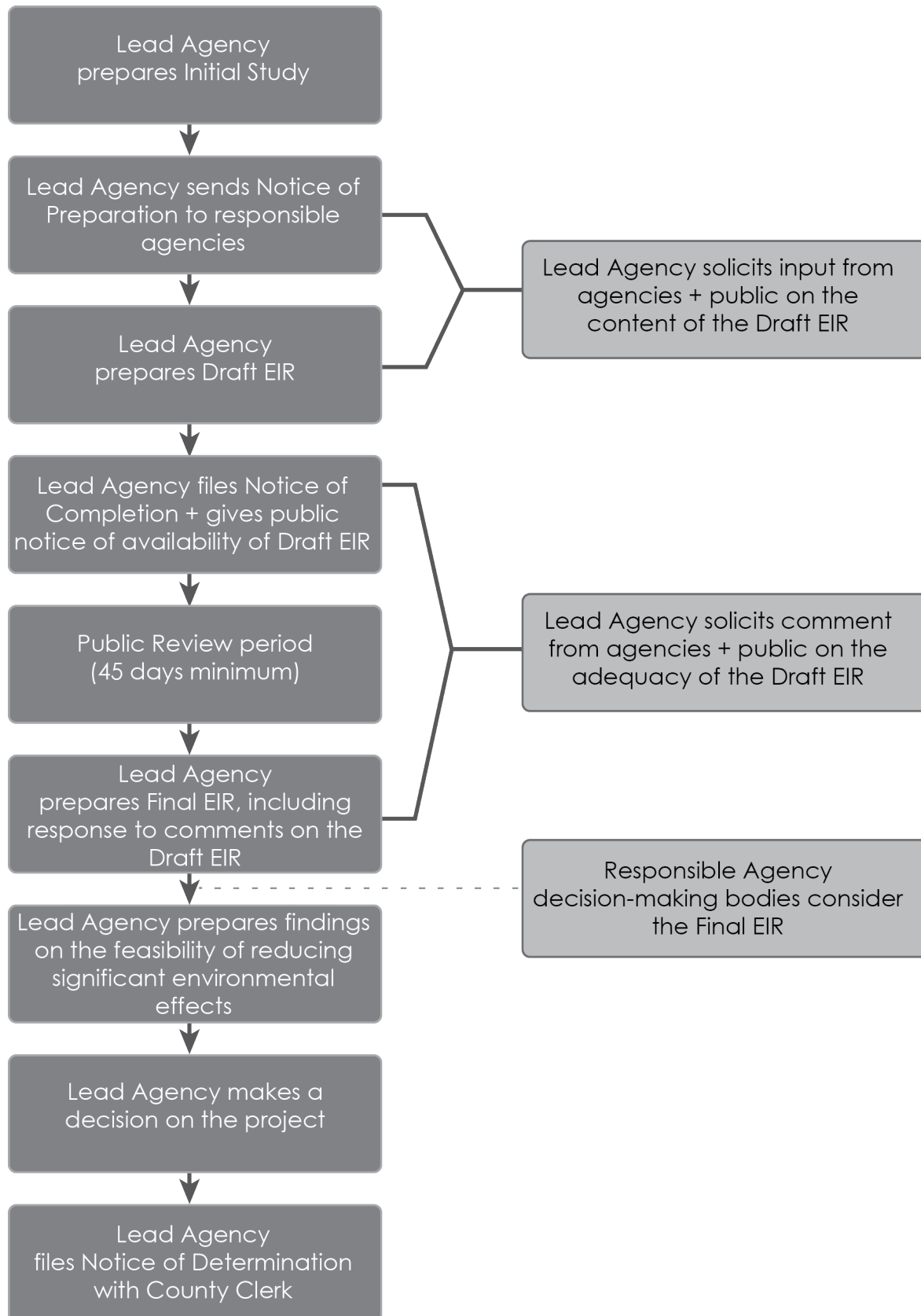
A trustee agency refers to a state agency having jurisdiction by law over natural resources affected by a project. There are no trustee agencies for the proposed project.

1.5 Environmental Review Process

The environmental impact review process, as required under CEQA, is summarized below and illustrated in Figure 1-1. The steps are presented in sequential order.

1. **Notice of Preparation (NOP) and Initial Study.** After deciding that an EIR is required, the lead agency (City of Palo Alto) must file a NOP soliciting input on the EIR scope to the State Clearinghouse, other concerned agencies, and parties previously requesting notice in writing (*CEQA Guidelines* Section 15082; Public Resources Code Section 21092.2). The NOP must be posted in the County Clerk’s office for 30 days. The NOP may be accompanied by an Initial Study that identifies the issue areas for which the project could create significant environmental impacts.
2. **Draft EIR Prepared.** The Draft EIR must contain: a) table of contents or index; b) summary; c) project description; d) environmental setting; e) discussion of significant impacts (direct,

- indirect, cumulative, growth-inducing and unavoidable impacts); f) a discussion of alternatives; g) mitigation measures; and h) discussion of irreversible changes.
3. **Notice of Completion (NOC)/Notice of Availability of a Draft EIR.** The lead agency must file a NOC with the State Clearinghouse when it completes a Draft EIR and prepare a Public Notice of Availability of a Draft EIR. The lead agency must place the NOC in the County Clerk's office for 30 days (Public Resources Code Section 21092) and send a copy of the NOC to anyone requesting it (*CEQA Guidelines* Section 15087). Additionally, public notice of Draft EIR availability must be given through at least one of the following procedures: a) publication in a newspaper of general circulation; b) posting on and off the project site; and c) direct mailing to owners and occupants of contiguous properties. The lead agency must solicit input from other agencies and the public and respond in writing to all comments received (Public Resources Code Sections 21104 and 21253). The minimum public review period for a Draft EIR is 30 days. When a Draft EIR is sent to the State Clearinghouse for review, the public review period must be 45 days unless the State Clearinghouse approves a shorter period (Public Resources Code 21091).
 4. **Final EIR.** A Final EIR must include: a) the Draft EIR; b) copies of comments received during public review; c) list of persons and entities commenting; and d) responses to comments.
 5. **Certification of Final EIR.** Prior to making a decision on a proposed project, the lead agency must certify that: a) the Final EIR has been completed in compliance with CEQA; b) the Final EIR was presented to the decision-making body of the lead agency; and c) the decision making body reviewed and considered the information in the Final EIR prior to approving a project (*CEQA Guidelines* Section 15090).
 6. **Lead Agency Project Decision.** The lead agency may a) disapprove the project because of its significant environmental effects; b) require changes to the project to reduce or avoid significant environmental effects; or c) approve the project despite its significant environmental effects, if the proper findings and statement of overriding considerations are adopted (*CEQA Guidelines* Sections 15042 and 15043).
 7. **Findings/Statement of Overriding Considerations.** For each significant impact of the project identified in the EIR, the lead agency must find, based on substantial evidence, that either: a) the project has been changed to avoid or substantially reduce the magnitude of the impact; b) changes to the project are within another agency's jurisdiction and such changes have or should be adopted; or c) specific economic, social, or other considerations make the mitigation measures or project alternatives infeasible (*CEQA Guidelines* Section 15091). If an agency approves a project with unavoidable significant environmental effects, it must prepare a written Statement of Overriding Considerations that sets forth the specific social, economic, or other reasons supporting the agency's decision.
 8. **Mitigation Monitoring Reporting Program.** When the lead agency makes findings on significant effects identified in the EIR, it must adopt a reporting or monitoring program for mitigation measures that were adopted or made conditions of project approval to mitigate significant effects.
 9. **Notice of Determination (NOD).** The lead agency must file a NOD after deciding to approve a project for which an EIR is prepared (*CEQA Guidelines* Section 15094). A local agency must file the NOD with the County Clerk. The NOD must be posted for 30 days and sent to anyone previously requesting notice. Posting of the NOD starts a 30-day statute of limitations on CEQA legal challenges (Public Resources Code Section 21167[c]).

Figure 1-1 Environmental Review Process

This page left intentionally blank.

2 Project Description

This section describes the proposed project, including the project applicant, the project site and surrounding land uses, major project characteristics, project objectives, and discretionary actions needed for approval.

2.1 Lead Agency and Contact

City of Palo Alto
250 Hamilton Avenue
Palo Alto, California 94301
Contact: Claire Raybould, AICP, Senior Planner, Planning and Development Services Department,
(650) 329-2116

2.2 Project Applicant

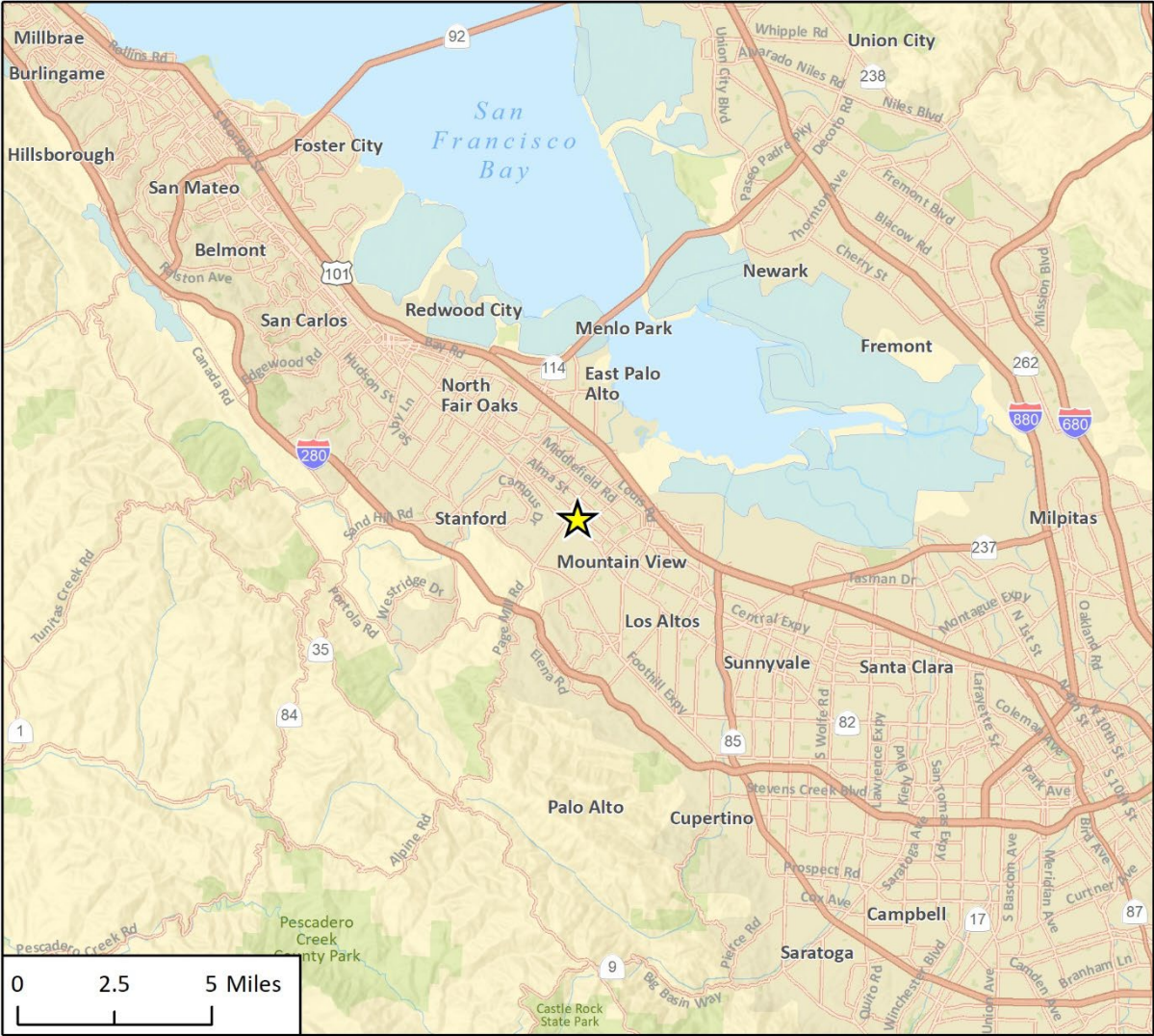
The Sobrato Organization
599 Castro Street, Suite 400
Mountain View, California 94041

2.3 Project Location

Figure 2-1 shows the regional location of the project site and Figure 2-2 shows the project site's immediate location and selected nearby land uses. For the purposes of this analysis, the "project site" includes the entire area bounded in a yellow line on Figure 2-2. The project site encompasses approximately 14.27 acres across four parcels. The project site includes all of Assessor's Parcel Numbers (APNs) 132-38-071, 132-32-036, 132-32-042, and 132-32-043 in the City of Palo Alto. The project site is roughly bounded by Park Boulevard to the north, Christopher Circle and Ash Street to the south, residences to the west, and commercial uses to the east.

The proposed townhome project would be located on the "area of proposed development" as indicated on Figure 2-2, which includes a portion of the project site. The area of development encompasses approximately 4.86 acres and is generally bounded by Park Boulevard to the north, commercial development to the south, Olive Avenue and residences to the west, and Matadero Creek to the east. The area of development includes all of APNs 132-32-036, 132-38-01 and portions of 132-32-042 and 132-32-043. There are numerous addresses associated with the area of proposed development, including: 200-404 Portage Avenue, 3040-3250 Park Boulevard, and 3201-3225 Ash Street.

Figure 2-1 Regional Location



Imagery provided by Esri and its licensors © 2021.

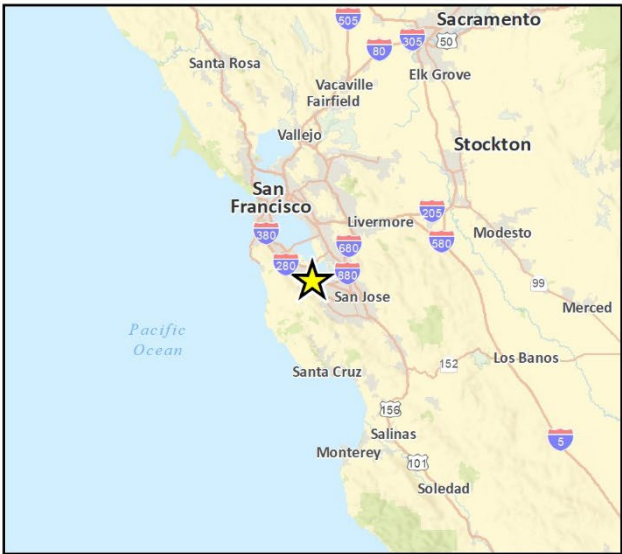


Fig. 1 Regional Location

Figure 2-2 Project Location



Imagery provided by Microsoft Bing and its licensors © 2021.

Fig. 2-2 Project Location

2.4 Existing Site Characteristics

2.4.1 Current Land Use Designation

The majority of the project site has a 2030 Comprehensive Plan designation of Multiple Family Residential (MF). The City of Palo Alto's 2030 Comprehensive Plan Land Use and Community Design Element (City of Palo Alto 2017) defines the Multiple-Family Residential category as follows:

The permitted number of housing units will vary by area, depending on existing land use, proximity to major streets and public transit, distance to shopping and environmental problems. Net densities will range from 8 to 40 units and 8 to 90 persons per acre. Density should be on the lower end of the scale next to single-family residential areas. Densities higher than what is permitted may be allowed where measurable community benefits will be derived, services and facilities are available, and the net effect will be consistent with the Comprehensive Plan. Population densities will range up to 2.25 persons per unit by 2030.

The parcel at 3040 Park Boulevard (APN #132-32-036) has a Comprehensive Plan designation of Light Industrial. The City of Palo Alto's 2030 Comprehensive Plan Land Use and Community Design Element defines the Light Industrial category as follows:

Wholesale and storage warehouses and the manufacturing, processing, repairing and packaging of goods. Emission of fumes, noise, smoke, or other pollutants is strictly controlled. Examples include portions of the area south of Oregon Avenue between El Camino Real and Alma Street that historically have included these land uses, and the San Antonio Road industrial area. Compatible residential and mixed-use projects may also be located in this category. FAR will range up to 0.5. Consistent with the Comprehensive Plan's encouragement of housing near transit centers, higher density multi-family housing may be allowed in specific locations.

2.4.2 Current Zoning

The majority of the project site is within the Medium Density Multiple-Family Residence District (RM-30). The Palo Alto Municipal Code (PAMC) defines the RM-30 district as follows:

intended to create, preserve and enhance neighborhoods for multiple-family housing with site development standards and visual characteristics intended to mitigate impacts on nearby lower density residential districts. Projects at this density are intended for larger parcels that will enable developments to provide their own parking spaces and to meet their open space needs in the form of garden apartments or cluster developments. Permitted densities in the RM-30 residence district range from sixteen to thirty dwelling units per acre. (PAMC Section 18.13.010).

The cannery building on the site is also subject to a site-specific portion of the zoning code that governs non-conforming uses. PAMC Section 18.70.030(b)(2)(E) states:

The nonconforming uses of the property at 3200 Park Boulevard/340 Portage Avenue/Olive Avenue for retail, research and development, warehouse, and storage uses are permitted in approximately the same ratio of uses existing as of October 16, 2006, subject to the following limitations: (1) retail uses shall not exceed 60,000 square feet, and (2) truck deliveries and other noisy outdoor activities shall be limited to the hours of 8:00 a.m. to 9:00 p.m. weekdays and 9:00 a.m. to 9:00 p.m. weekends.

The parcel at 3040 Park Boulevard is zoned General Manufacturing (GM). According to the PAMC:

The GM general manufacturing district provides for light manufacturing, research, and commercial service uses. Office uses are very limited in order to maintain the district as a desirable location for manufacturing uses. The GM district is intended for application to land designated for light industrial use in the Palo Alto Comprehensive Plan (PAMC Section 18.20.010).

2.4.3 Surrounding Land Uses

The project site is in a neighborhood characterized by a mix of uses including residential, retail, office, and commercial. Single-family residential uses about the site to the west, and a mix of residential, retail, and office uses are located further west, across Olive Avenue. Uses to the east and west of the site are primarily commercial and include offices, restaurants, and various retail uses. Commercial uses including offices are located north of the site, and a single-family residential neighborhood is located further north across Alma Street.

2.4.4 Existing Project Site Conditions

The project site includes an existing two-story commercial building located at 200 Portage Avenue that is currently used by several businesses, including software companies and a computer repair business. Total floor area of the building is approximately 232,383 square feet, which includes approximately 142,744 square feet of research and development (R&D) uses, 5,639 square feet of warehouse space, and 84,000 square feet of retail space that is currently vacant. The building has its main frontage on Park Boulevard and is surrounded on the east and west by surface parking lots. The existing building is industrial in character and was constructed in 1918. Known as the Bayside Canning Company (later occupied by Fry's Electronics store), the cannery was previously recommended eligible for listing in the California Register of Historical Resources for its association with Palo Alto's early agricultural history. On the northwest corner of the project site at 3040 Park Boulevard is a one-story, 1,750 square foot building currently occupied by a fitness use. On the eastern boundary of the project site at 3250 Park Boulevard and 278 Lambert Avenue are two one-story office buildings totaling 11,762 square feet that are currently occupied by an automotive service use (Audi). On the Southern portion of the site at 3201-3225 Ash Street is an existing 4,707 sf office building.

The project site is generally flat but slightly slopes to the northeast. The elevation is approximately 25 feet above mean sea level. The project site is bisected by Matadero Creek, which is entirely channelized and concrete lined through the site. Matadero Creek runs approximately 8 miles from the foothills of the Santa Cruz Mountains in a northeasterly direction where it joins Adobe Creek and eventually drains through the Palo Alto Baylands to the San Francisco Bay. The creek is managed by the Santa Clara Valley Water District.

The area of proposed development comprises a portion of a 4.86-acre parcel located southeast of the intersection of Park Boulevard and Olive Avenue. The area of proposed development only includes the northern portion of the building at 200 Portage Avenue. The area of proposed development also includes a one-story commercial building occupied by a fitness use at 3040 Park Boulevard. This building is accessed via a single driveway on Park Boulevard. Aside from some perimeter landscaping, the area of development is almost entirely covered in impermeable surfaces. Figure 2-3 shows photographs of the existing buildings on the area of development.

Figure 2-3 Photographs of Project Site — Photos 1 and 2



Photo 1. View of existing structure on the project site, taken from the northwest portion of the project site looking south.



Photo 2. View of existing structure at 3040 Park Boulevard from Park Boulevard sidewalk looking southwest.

2.5 Project Description

2.5.1 Proposed Parcel Changes

The proposed project would involve a proposed tentative map and final map to merge and subdivide four parcels in order to create two resulting parcels. On one of the new parcels (4.86 acres), the project would involve a condominium subdivision to create 91 new condominium units utilizing density bonus allowances. The other parcel (9.41 acres) would include the remaining parts of the existing cannery building as well as other existing commercial buildings, including a one-story office building located at 3201-3225 Ash Street and two one-story office buildings located at 3250 Park Boulevard and 278 Lambert Avenue.

2.5.2 Proposed Residential Development

The proposed townhome project would involve demolition of the portion of the existing commercial building at 200 Portage Avenue and the commercial building at 3040 Park Boulevard within the area of proposed development and construction of 91 new residential units within 16 three-story buildings. Table 2-1 provides a summary of the proposed development. Figure 2-4 shows the proposed site plan and Figure 2-5 shows the proposed project elevations.

Table 2-1 Proposed Residential Development Summary

Feature	Details
Proposed Lot Changes	
Lot Changes	Merge four existing lots into two lots: one 4.86-acre parcel for the proposed townhome project and one 9.41-acre parcel for the portions of existing development to remain
Townhome Project Characteristics	
Residential area	194,128 square feet
Floor Area Ratio (FAR)	1.39
Density	18.7 dwelling units/acre
Building Height	Maximum parapet height of 34 feet
Proposed Dwelling Units	
Three-Bedroom	59 units
Four-Bedroom	32 units
Total Units	91 units
Proposed Parking	
Garage Parking	182 (2 per residential unit)
Surface Parking	36 spaces
Total	218 spaces
Total Bicycle Parking Spaces	101 (91 in garages and 10 surface guest spaces)
Proposed Open Space	
Private Open Space (private unit balconies)	8,403 square feet (92 square feet per dwelling unit)
Common Open Space	26,182 square feet (288 square feet per dwelling unit)

Figure 2-4 Proposed Townhome Project Site Plan



Figure 2-5 Proposed Townhome Elevations



The proposed residential units would be distributed throughout four building types: four-plex buildings, five-plex buildings, six-plex buildings, and seven-plex buildings. The buildings would be distributed in four rows throughout the site, and new private streets would be constructed between and surrounding the buildings. Each residential unit would be three stories and would include a two-car garage and bedroom at the first floor, kitchen and living spaces at the second floor, and additional bedrooms at the third floor. Fifty-nine units would include three bedrooms, and 32 units would include four bedrooms.

Pursuant to the City's inclusionary housing requirements, the project would provide 15 percent of the units (14 units) at the moderate income affordability level. The project applicant is seeking two waivers pursuant to state law (SB 1818 and Palo Alto Municipal Code (PAMC) Section 18.15.080). The requested waivers are:

- **Waiver of floor area ratio (FAR) maximum.** Pursuant to the PAMC, the project site is subject to a maximum FAR of 0.6 whereas the proposed project involves a FAR of 1.39.
- **Waiver of open space requirement.** The project site is subject to a 30 percent minimum requirement for open space uses whereas the proposed project involves 20 percent open space uses.

2.5.3 Proposed Improvement to Existing Building

The proposed project would also involve improvements to an existing portion of the on-site, two-story commercial building. The current tenants in the portion of the commercial building that would be demolished would move into the vacant portion of the building. Therefore, the current on-site commercial uses would remain the same.

The area of improvements for the existing commercial building is shown on Figure 2-6. The improvements would involve architectural changes to add skylights, gable windows, corrugated siding, and other architectural details.

2.5.4 Circulation, Access, and Parking

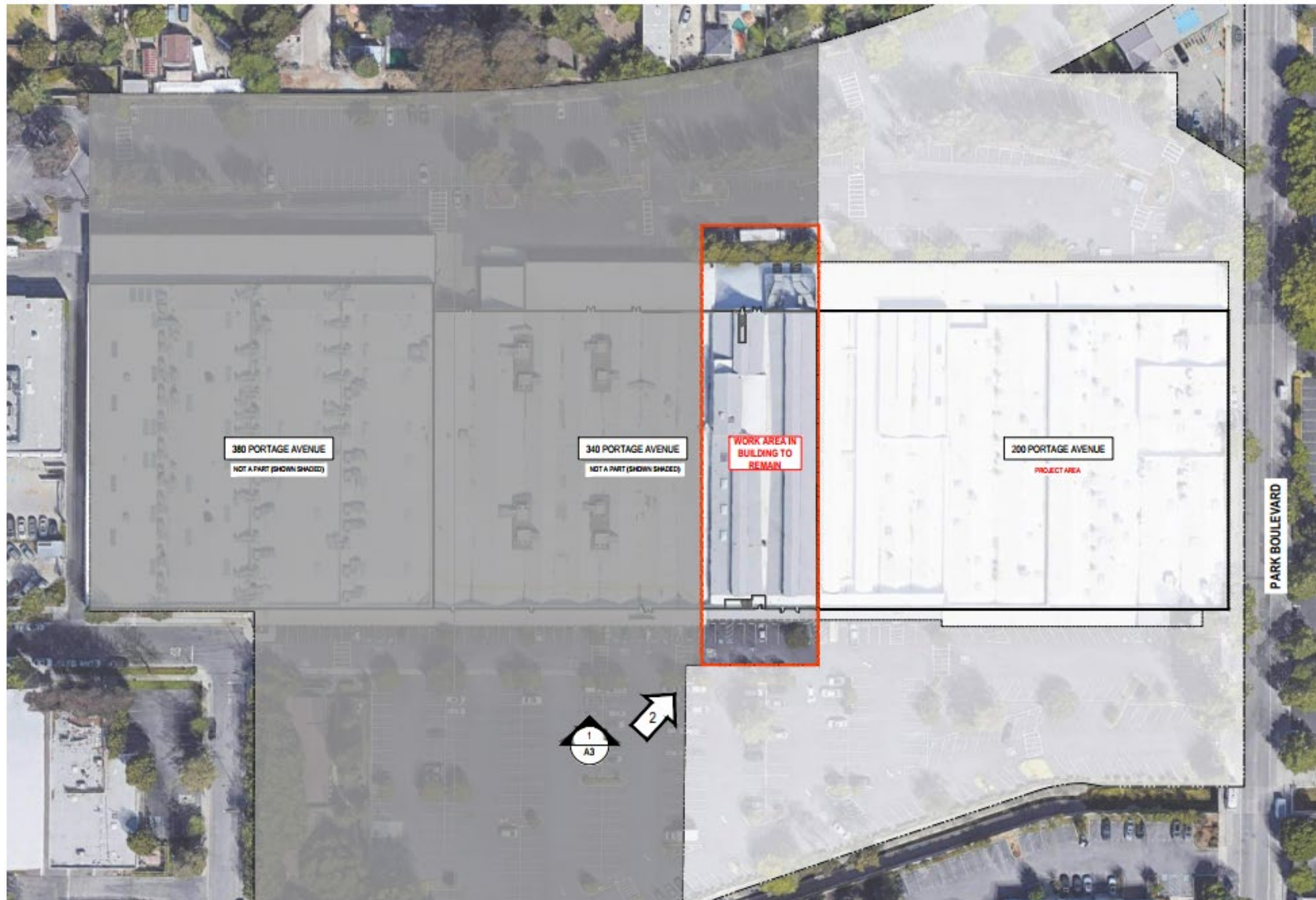
Access to the proposed residential units and garages would be taken from newly constructed private streets between the buildings, which would be accessed from new private streets from Park Boulevard and Portage Avenue. The project would include a total of 182 parking spaces in garages and 36 surface spaces near the southern portion of the area of proposed development.

Pedestrian and bicycle access to the buildings would be provided via the new drive aisles. The project would include 101 bicycle parking spaces, with 91 long-term spaces located in each residential garage and 10 short-term guest spaces.

2.5.5 Landscaping and Open Space

In addition to the proposed residential development, the project would include construction of a landscaped paseo at the northeast corner of the proposed area of development adjacent to Park Boulevard, which would include a fenced play area, fenced dog run, seating and benches, and a lawn area. The project would also include landscaped outdoor seating areas along the eastern side of the site next to Matadero Creek.

Figure 2-6 Work Area for Improvements to Existing Building



There are currently 88 trees within or adjacent to the area of development. The proposed project would preserve 16 trees on the site and 2 trees off-site, while removing 70 trees. Of the trees to be removed, two redwoods and one Coast live oak are considered “protected trees” under the City’s Tree Protection Ordinance. The project would involve planting 176 proposed new trees around the site. Proposed landscaping would include new plantings throughout the open spaces, including the paseo, at the setbacks along drive aisles, roadways, and streets, and surrounding the proposed buildings.

To treat stormwater, the proposed project would include flow-through planters and permeable pavement throughout the project site.

2.5.6 Building and Architecture

The buildings would feature a contemporary design, with flat roofs, large rectangular windows, wood paneling, and painted stucco.

2.5.7 Construction

Construction would occur over approximately 18 months and would involve the following phases and timeframes:

- Demolition: approximately 10 weeks
- Site preparation: approximately 1 week
- Grading/excavation: approximately 3 weeks
- Trenching/Foundation: approximately 16 weeks
- Building exterior: 34 weeks
- Interior/architectural coating: 32 weeks
- Paving: 12 weeks

To complete the construction of the project grading would take place over most of the area of development, and approximately 1,600 tons of pavement materials and 2,000 cubic yards of earth material would be exported. An estimated 1,500 cubic yards of earth material would be imported to the site. Excavation would involve a depth up to 5 feet for building construction and up to 10 feet for utility work (water/sewer).

2.5.8 Utilities

The City of Palo Alto Utilities department (CPAU) provides electric, natural gas, refuse, recycled water, storm drain, and wastewater collection, treatment, and disposal. Water would be provided by the San Francisco Public Utilities Commission (SFPUC). Police and fire protection services would be provided by the City of Palo Alto.

2.5.9 Palo Alto Green Building Checklist

In addition to California Building Code (CBC) requirements, the City of Palo Alto has adopted more stringent green building regulations. The Palo Alto Green Building Ordinance (Ord. 5393, 2017) requires applicants to incorporate sustainable design, construction, and operational requirements into most single-family residential, multi-family residential, and non-residential projects. For residential development, the City has adopted California Green Building Standards Code (CALGreen) Tier 1 for additions and renovations over 1,000 square feet and CALGreen for Tier 2 for new

construction. To achieve Tier 2 status, a project must comply with the requirements identified in CALGreen Appendix A4, Division A4.601.5 and be 10 percent more energy efficient than the base CALGreen code requirements. In accordance with the City's Green Building Ordinance, the proposed project would satisfy requirements for CALGreen Tier 2.

2.6 Project Objectives

The objectives for the proposed project are to:

1. Develop a well-designed ownership residential townhome project that adds diversity to the City of Palo Alto's ownership housing supply and will meet a variety of residents' needs by providing a mix of 3- and 4-bedroom units to meet the needs of families.
2. Develop residential uses (including on-site affordable units) on a site specifically designated for housing in the City of Palo Alto's Housing Element but that does not currently contain any housing, and that will help meet the City's Regional Housing Needs Assessment (RHNA) obligations.
3. Construct a single, cohesive development consisting of high-quality, contemporary urban design that respects and relates well to its surroundings and respects the historic uses at the site including the portion of the Cannery building that will remain.
4. Contribute to the concept of a "complete neighborhood" and overall balance and mix of uses in Palo Alto, consistent with the orderly development of the area and the ongoing North Ventura Coordinated Area Plan (NVCAP) process. Provide sufficient parking but do not overpark the site, consistent with regional transportation and climate policy goals.
5. Achieve the streamlined and efficient processing and approval of the project including benefits available to developments that include affordable housing consistent with State housing law, including the Housing Accountability Act, State Density Bonus Law, and Permit Streamlining Act.

2.7 Required Approvals

The proposed project would require approval of the following entitlements by the City of Palo Alto City Council:

- Major Architectural Review application for 91 condominium units
- A Vesting Tentative Map to create two new parcels and for 91 condominium units on one of the two resulting parcels
- Tree removal permit

No approvals from other public agencies would be required for the proposed development.

2.8 California Native American Tribal Consultation

California Native American Tribes traditionally and culturally affiliated with the project area have not requested consultation pursuant to Public Resources Code Section 21080.3.1.

This page intentionally left blank.

3 Environmental Setting

This section provides a general overview of the environmental setting for the proposed project. More detailed descriptions of the environmental setting for each environmental issue area can be found in Section 4, *Environmental Impact Analysis*.

3.1 Regional Setting

The project is in the City of Palo Alto, which is located in the southeastern portion of the San Francisco Peninsula in Santa Clara County. Palo Alto covers an area of approximately 26 square miles and is bordered by the cities of Menlo Park, East Palo Alto, Mountain View, and Los Altos, as well as the Town of Los Altos Hills, the unincorporated community of Portola Valley, and Stanford University.

A grid system of east-west and north-south roadways, including arterials, collectors, and local streets, provide vehicular access throughout the city. The major roadways include El Camino Real (SR-82), Bayshore Freeway (US 101), Junipero Sierra Freeway (I-280), Junipero Sierra Boulevard, and Middlefield Road. Regional access to Palo Alto is provided by US 101, I-280, and SR 82/El Camino Real. US 101 is located approximately 1.6 miles northeast of the project site and I-280 is located over 2.5 miles southwest of the project site. The city is also served by the Caltrain passenger rail network. Figure 2-1 in Section 2, *Project Description*, shows the regional location of the project.

The Mediterranean climate of the region and the coastal influence produce moderate to cool temperatures year-round, with rainfall concentrated in the winter months. Although air quality in the area has steadily improved in recent years, the entirety of Santa Clara County remains an Environmental Protection Agency (EPA) nonattainment area for ozone (urban smog). The City of Palo Alto is located approximately sixteen miles inland from the coastline of the Pacific Ocean.

3.2 Project Setting

The project site is located adjacent to Park Boulevard and Alma Street. Park Boulevard is a major corridor and arterial roadway that connects to Menlo Park to the north and Mountain View to the south. Figure 2-2 in Section 2, *Project Description*, shows the project location. The project is in a neighborhood characterized by a mix of uses, including residential, retail, office, and commercial. The areas north of the project site on Alma Street and directly west of the project site on Olive Avenue consist of single-family residential housing, while surrounding uses east, south and further north and west are primarily low-density commercial and retail uses, including automobile repair businesses, office buildings and restaurants.

The project site is currently mainly developed with a two-story commercial building that is used by several businesses, including software companies and a computer repair business. Total floor area of the building is approximately 231,707 square feet, which includes approximately 123,368 square feet of research and development (R&D) uses, 10,000 square feet of warehouse space, and 98,339 square feet of retail space that is currently vacant. The building has its main frontage on Park Boulevard and is surrounded on the east and west by surface parking lots. On the northwest corner of the project site at 3040 Park Boulevard is a one-story building currently occupied by a fitness use.

On the eastern boundary of the project site at 3250 Park Boulevard and 276 Lambert Avenue are one-story office and accessory buildings.

The project site is generally flat but slightly slopes to the northeast. The elevation is approximately 25 feet above mean sea level. The project site is bisected by Matadero Creek, which is entirely channelized and concrete-lined through the site.

The area of proposed development comprises a portion of a 4.86-acre parcel located southeast of the intersection of Park Boulevard and Olive Avenue. The area of proposed development consists of the northern portion of the building at 200 Portage Avenue. The area of proposed development also includes the one-story commercial building occupied by a fitness use at 3040 Park Boulevard. This building is accessed via a single driveway on Park Boulevard. Aside from some perimeter landscaping, the area of development is almost entirely covered in impermeable surfaces. There are currently 88 trees within or adjacent to the area of development.

The majority of the project site is zoned Medium Density Multi-family Residential (RM-30), as defined by the City's Zoning Ordinance and has a 2030 Comprehensive land use designation of Multi-family Residential (MF). The parcel at 3040 Park Street has a Comprehensive Plan designation of Light Industrial and is zoned General Manufacturing (GM).

3.3 Cumulative Development

In addition to the specific impacts of individual projects, CEQA requires EIRs to consider potential cumulative impacts of the proposed project. CEQA defines "cumulative impacts" as two or more individual impacts that, when considered together, are substantial or will compound other environmental impacts. Cumulative impacts are the combined changes in the environment that result from the incremental impact of development of the proposed project and other nearby projects. For example, noise impacts of two nearby projects may be less than significant when analyzed separately but could have a significant impact when analyzed together. Cumulative impact analysis allows the EIR to provide a reasonable forecast of future environmental conditions and can more accurately gauge the effects of a series of projects.

CEQA requires cumulative impact analysis in EIRs to consider either a list of planned and pending projects that may contribute to cumulative effects or a forecast of future development potential. Currently planned and pending projects within approximately one mile of the project site are listed in Table 3-1. These projects are considered in the cumulative analyses in Section 4, *Environmental Impact Analysis*.

Table 3-1 Cumulative Projects List

Project Location	Land Use	Size	Status	Distance to Project Site
3241 Park Boulevard	Office	7,861 sf	Approved not yet under construction	50 feet
3045 Park Boulevard	Office	17,756 sf	Under construction	50 feet
123 Sherman Avenue	Office	52,013 sf	Under review	0.3 mile
739 Sutter Avenue	Residential	12 units	Under review	0.8 mile
702 Clara Drive	Residential	3 units	Approved not yet under construction	0.8 mile
250 Sherman Avenue	Public safety	48,00 sf	Under construction	0.3 mile

Project Location	Land Use	Size	Status	Distance to Project Site
380 Cambridge Avenue	Commercial	17,502 sf	Approved not yet under construction	0.5 mile
901 California Avenue	Laboratory	55,582 sf laboratory	Under review	0.5 mile
1450 Page Mill Road	Office	74,400 sf	Under construction	0.75 mile
3223 Hanover Street	Office/R&D	67,200 sf	Under construction	0.75 mile
2585 El Camino Real	Mixed-use residential and commercial	14 units Commercial	Under construction	0.3 mile
2755 El Camino Real	Residential	60 units	Construction complete	0.2 mile
2951 El Camino Real	Mixed-use residential and commercial	113 units 5,000 sf office 1,000 sf retail	Preliminary	500 feet
3150 El Camino Real	Mixed-use residential and commercial	129 units 2,800 sf retail	Preliminary	0.1 mile
3225 El Camino Real	Mixed-use residential and commercial	11,984 sf commercial 8 units	Under construction	400 feet
3265 El Camino Real	Mixed-use residential and commercial	3 units 275 sf commercial	Under construction	450 feet
3300 El Camino Real	Office/R&D	52,872 sf	Under review	0.1 mile
3585 El Camino Real	Mixed-use residential and office	3 units 3,126 sf office	Approved not yet under construction	0.3 mile
3705 El Camino Real	Residential	59 units	Under construction	0.4 mile
3709 El Camino Real	Mixed use residential and office	67 units 3,530 sf office	Preliminary	0.4 mile
3877 El Camino Real	Mixed-use residential and commercial	17 units 4,675 sf commercial	Under construction	0.5 mile
4115 El Camino Real	Mixed-use residential and commercial	7 units	Under construction	0.8 mile
300 Lambert Ave	Residential	49 units	Preliminary	25 feet

Source: City of Palo Alto 2022. Cumulative project details were sourced from buildingeye, a citizen-facing mapping interface provided by the City of Palo Alto and available online at <https://paloalto.buildingeye.com/planning> and verified with City planning staff. Excludes single-family homes and duplexes.

sf = square feet

This page intentionally left blank

4 Environmental Impact Analysis

This section discusses the possible environmental effects of the proposed 200 Portage Avenue Townhome Project for the specific issue areas that were identified through the scoping process as having the potential to experience significant effects. “Significant effect” is defined by the *CEQA Guidelines* §15382 as:

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

The assessment of each issue area begins with a discussion of the environmental setting related to the issue, which is followed by the impact analysis. In the impact analysis, the first subsection identifies the methodologies used and the “significance thresholds,” which are those criteria adopted by the City and other agencies, universally recognized, or developed specifically for this analysis to determine whether potential effects are significant. The next subsection describes each impact of the proposed project, mitigation measures for significant impacts, and the level of significance after mitigation. Each effect under consideration for an issue area is separately listed in bold text with the discussion of the effect and its significance. Each bolded impact statement also contains a statement of the significance determination for the environmental impact as follows:

Significant and Unavoidable. An impact that cannot be reduced to below the threshold level given reasonably available and feasible mitigation measures. Such an impact requires a Statement of Overriding Considerations to be issued if the project is approved per §15093 of the *CEQA Guidelines*.

Less than Significant with Mitigation Incorporated. An impact that can be reduced to below the threshold level given reasonably available and feasible mitigation measures. Such an impact requires findings under §15091 of the *CEQA Guidelines*.

Less than Significant. An impact that may be adverse, but does not exceed the threshold levels and does not require mitigation measures. However, mitigation measures that could further lessen the environmental effect may be suggested if readily available and easily achievable.

No Impact. The proposed project would have no effect on environmental conditions or would reduce existing environmental problems or hazards.

Following each environmental impact discussion is a list of mitigation measures (if required) and the residual effects or level of significance remaining after implementation of the measure(s). In cases where the mitigation measure for an impact could have a significant environmental impact in another issue area, this impact is discussed and evaluated as a secondary impact. The impact analysis concludes with a discussion of cumulative effects, which evaluates the impacts associated with the proposed project in conjunction with other planned and pending developments in the area listed in Section 3, *Environmental Setting*. The Executive Summary of this EIR summarizes all impacts and mitigation measures that apply to the proposed project.

This page intentionally left blank

4.1 Air Quality

This section analyzes both temporary air quality impacts relating to construction activity and long-term air quality impacts associated with the proposed project. The analysis herein is based partially on the Local Transportation Analysis prepared by W-Trans in August 2022 and included in Appendix H. Energy impacts are discussed in Section 4.3, *Energy*, and impacts related to greenhouse gas (GHG) emissions and global climate change are discussed in Section 4.4, *Greenhouse Gas Emissions*.

4.1.1 Setting

a. Regional Climate and Meteorology

The project site is located in the city of Palo Alto in the northwest corner of Santa Clara County, which is a subregion of the San Francisco Bay Area Air Basin (SFBAAB). The SFBAAB includes the counties of San Francisco, Santa Clara, San Mateo, Marin, Napa, Contra Costa, and Alameda, along with the southeast portion of Sonoma County and the southwest portion of Solano County.

Typical of the San Francisco Bay Area, Palo Alto has a Mediterranean climate with cool, wet winters and warm, dry summers. Typically, in the warmer months, as the sun goes down, the fog bank flows over the foothills to the west and covers the night sky, thus creating a blanket that helps trap the summer warmth absorbed during the day. Even so, it is rare for the overnight low temperature to exceed 60 °F. In January, average temperatures range from 39 °F to 57°F. In July, average temperatures range from 55 °F to 78 °F (Western Regional Climate Center 2020). Due to the Santa Cruz Mountains to the west, there is a “rain shadow” in Palo Alto, resulting in an average annual rainfall of 15.3 inches. Measurable rainfall occurs on an average of 57 days annually, with most rainfall occurring from November to March.

The prevailing wind in most of Palo Alto is primarily from a northerly direction, especially during the winter and summer. In spring and fall, winds become somewhat variable with more of a northwesterly direction. Bay breezes push cool air onshore during the daytime and draw air from the land offshore at night. Wind speeds are moderate in this subregion, with annual average wind speeds during the spring and summer at about nine miles per hour (mph), while during the winter they average seven mph.

b. Air Pollutants of Primary Concern

Primary criteria pollutants are emitted directly from a source (e.g., vehicle tailpipe, an exhaust stack of a factory, etc.) into the atmosphere. Primary criteria pollutants include carbon monoxide (CO), reactive organic gases (ROG), nitrogen oxides (NO_x), fine particulate matter (PM₁₀ and PM_{2.5}), sulfur dioxide (SO₂), and lead (Pb). Secondary criteria pollutants are created by atmospheric chemical and photochemical reactions; ROGs together with NO_x form the building blocks for the creation of photochemical (secondary) pollutants. Secondary pollutants include oxidants, ozone (O₃), and sulfate and nitrate particulates (smog). The characteristics, sources and effects of critical air contaminants are described below.

Ozone

O₃ is produced by a photochemical reaction (triggered by sunlight) between NO_x and ROG. Nitrogen oxides are formed during the combustion of fuels, while reactive organic compounds are formed during combustion and evaporation of organic solvents. Because O₃ requires sunlight to form, it

mostly occurs in concentrations considered serious between the months of April and October. O₃ is a pungent, colorless, toxic gas with direct health effects on humans including respiratory and eye irritation and possible changes in lung functions. Groups most sensitive to O₃ include children, the elderly, people with respiratory disorders, and people who exercise strenuously outdoors.

Carbon Monoxide

CO is a local pollutant that is found in high concentrations only near the source. The major source of CO, a colorless, odorless, poisonous gas, is automobile traffic. Elevated concentrations, therefore, are usually only found near areas of high traffic volumes. CO's health effects are related to its affinity for hemoglobin in the blood. At high concentrations, CO reduces the amount of oxygen in the blood, causing heart difficulties in people with chronic diseases, reduced lung capacity and impaired mental abilities.

Nitrogen Dioxide

Nitrogen dioxide (NO₂) is a by-product of fuel combustion, with the primary source being motor vehicles and industrial boilers and furnaces. The principal form of nitrogen oxide produced by combustion is nitric oxide (NO), but NO reacts rapidly to form NO₂, creating the mixture of NO and NO₂ commonly called NO_x. Nitrogen dioxide is an acute irritant. A relationship between NO₂ and chronic pulmonary fibrosis may exist, and an increase in bronchitis in young children at concentrations below 0.3 ppm may occur. Nitrogen dioxide absorbs blue light and causes a reddish-brown cast to the atmosphere and reduced visibility. It can also contribute to the formation of PM₁₀ and acid rain.

Suspended Particulates

PM₁₀ is particulate matter measuring no more than 10 microns in diameter, while PM_{2.5} is fine particulate matter measuring no more than 2.5 microns in diameter. Suspended particulates are mostly dust particles, nitrates and sulfates. Both PM₁₀ and PM_{2.5} are by-products of fuel combustion and wind erosion of soil and unpaved roads and are directly emitted into the atmosphere through these processes. Suspended particulates are also created in the atmosphere through chemical reactions. The characteristics, sources, and potential health effects associated with the small particulates (those between 2.5 and 10 microns in diameter) and fine particulates (PM_{2.5}) can be very different. The small particulates generally come from windblown dust and dust kicked up from mobile sources. The fine particulates are generally associated with combustion processes, as well as being formed in the atmosphere as a secondary pollutant through chemical reactions. Fine particulate matter is more likely to penetrate deeply into the lungs and poses a health threat to all groups, but particularly to the elderly, children, and those with respiratory problems. More than half of the small and fine particulate matter that is inhaled into the lungs remains there. These materials can damage health by interfering with the body's mechanisms for clearing the respiratory tract or by acting as carriers of an absorbed toxic substance.

Sulfur Dioxide

Sulfur dioxide is included in a group of highly reactive gases known as "oxides of sulfur." The largest sources of sulfur dioxide emissions are from fossil fuel combustion at power plants (73 percent) and other industrial facilities (20 percent). Smaller sources of sulfur dioxide emissions include industrial processes such as extracting metal from ore and the burning of fuels with a high sulfur content by locomotives, large ships, and off-road equipment. Sulfur dioxide is linked to a number of adverse

effects on the respiratory system, including aggravation of respiratory diseases, such as asthma and emphysema, and reduced lung function.

Lead

Lead is a metal found naturally in the environment, as well as in manufacturing products. The major sources of lead emissions historically have been mobile and industrial sources. However, as a result of the U.S. EPA's regulatory efforts to remove lead from gasoline, atmospheric lead concentrations have declined substantially over the past several decades. The most dramatic reductions in lead emissions occurred prior to 1990 due to the removal of lead from gasoline sold for most highway vehicles. Lead emissions were further reduced substantially between 1990 and 2008, with reductions occurring in the metals industries at least in part as a result of national emissions standards for hazardous air pollutants (United States Environmental Protection Agency [U.S. EPA] 2013). As a result of phasing out leaded gasoline, metal processing currently is the primary source of lead emissions. The highest level of lead in the air is generally found near lead smelters. Other stationary sources include waste incinerators, utilities, and lead-acid battery manufacturers. The health impacts of lead include behavioral and hearing disabilities in children and nervous system impairment.

Toxic Air Contaminants

The Air Toxic "Hot Spots" Information and Assessment Act of 1987 (Assembly Bill [AB] 2588) seeks to identify and evaluate risk from air toxics sources but does not directly regulate air toxics emissions. A toxic air contaminant (TAC) is a substance CARB has determined to have the potential to cause serious health effects. Examples include certain aromatic and chlorinated hydrocarbons, certain metals, and asbestos. TACs tend to be localized and are found in relatively low concentrations in ambient air; however, exposure to low concentrations over long periods can result in increased risk of cancer and/or adverse health effects. Noncarcinogenic effects typically affect one or more target organ systems and may be experienced on either short-term (acute) or long-term (chronic) exposure to a given TAC.

TACs are generated by a number of sources, including stationary sources, such as dry cleaners, gas stations, combustion sources, and laboratories; mobile sources, such as automobiles; and area sources, such as landfills. Because some communities in the Bay Area experience relatively high exposure to TACs compared with other communities, the Bay Area Air Quality Management District (BAAQMD) established the Community Air Risk Evaluation program in 2004 to identify impacted communities. The City of Palo Alto is not considered an impacted community based on the Bay Area TAC inventory developed in 2005, demographic, and health data.

While CO is not defined as a TAC, it can cause acute health effects such as impairment of the central nervous system and cardiovascular system (California Office of Environmental Health Hazard Assessment 2019). The SFBAAB is an attainment area for CO, although CO "hotspots" can form if there is a high level of congested traffic, poor atmospheric ventilation, and many vehicles are cold-starting.

c. Air Pollution Regulation

The federal and state governments have authority under the federal and state Clean Air Acts to regulate emissions of airborne pollutants and have established ambient air quality standards (AAQS) for the protection of public health. The U.S. EPA is the federal agency designated to administer air quality regulation, while the California Air Resources Board (CARB) is the state equivalent in

California. Federal and state standards have been established for six criteria pollutants, including O₃, CO, NO₂, SO₂, PM₁₀ and PM_{2.5}, and Pb.

Air quality monitoring stations measure pollutant ground-level concentrations (typically, ten feet above ground level). Depending on whether the standards are met or exceeded, the local air basin is classified as in “attainment” or “non-attainment.” Some areas are unclassified, which means no monitoring data are available. Unclassified areas are considered to be in attainment. Table 4.1-1 lists the current federal and state standards for each of these pollutants as well as the attainment status of the SFBAAB. California air quality standards are identical to or stricter than federal standards for all criteria pollutants.

Local control in air quality management is provided by CARB through county-level or regional (multi-county) air districts. CARB establishes statewide air quality standards and is responsible for control of mobile emission sources, while the local APCDs are responsible for enforcing standards and regulating stationary sources. CARB has established 15 air basins statewide. Palo Alto is located in the SFBAAB, which is under the jurisdiction of the BAAQMD.

Table 4.1-1 Federal and State Ambient Air Quality Standards

Pollutant	Averaging Time	California Standards		National Standards	
		Concentration	Attainment Status	Concentration	Attainment Status
Ozone	8 Hour	0.070 ppm	N	0.070 ppm	N
	1 Hour	0.09 ppm	N		
Carbon Monoxide	8 Hour	9.0 ppm	A	9 ppm	A
	1 Hour	20 ppm	A	35 ppm	A
Nitrogen Dioxide	1 Hour	0.18 ppm	A	0.100 ppm	U
	Annual Arithmetic Mean	0.030 ppm		0.053 ppm	A
Sulfur Dioxide	24 Hour	0.04 ppm	A	0.14 ppm	A
	1 Hour	0.25 ppm	A	0.075 ppm	A
	Annual Arithmetic Mean			0.030 ppm	A
Particulate Matter (PM ₁₀)	Annual Arithmetic Mean	20 µg/m ³	N		
	24 Hour	50 µg/m ³	N	150 µg/m ³	U
Particulate Matter - Fine (PM _{2.5})	Annual Arithmetic Mean	12 µg/m ³	N	12 µg/m ³	U/A
	24 Hour			35 µg/m ³	N
Sulfates	24 Hour	25 µg/m ³	A		
Lead	Calendar Quarter			1.5 µg/m ³	A
	Rolling 3 Month Average			0.15 µg/m ³	
	30 Day Average	1.5 µg/m ³)			A
Hydrogen Sulfide	1 Hour	0.03 ppm	U		
Vinyl Chloride (chloroethene)	24 Hour	0.010 ppm	No information available		

Pollutant	Averaging Time	California Standards		National Standards	
		Concentration	Attainment Status	Concentration	Attainment Status
Visibility Reducing particles	8 Hour (10:00 to 18:00 PST)		U		
A=Attainment N=Nonattainment U=Unclassified; mg/m3=milligrams per cubic meter ppm=parts per million µg/m3=micrograms per cubic meter Source: BAAQMD 2017a					

d. Current Air Quality

As the local air quality management agency, the BAAQMD is required to monitor air pollutant levels to ensure that state and federal air quality standards are met and, if they are not met, to develop strategies to meet the standards.

The Redwood City Monitoring Station is the closest BAAQMD-operated monitoring station that records the major pollutants listed above and is approximately 5.4 miles northwest of the project site. Table 4.1-2 summarizes the most recent available representative annual air quality data for the project site from 2018 through 2020 at the Redwood City Monitoring Station for all criteria pollutants, except for PM₁₀, which was taken from the San Jose – Jackson Street Station as it was next closest monitoring station to the project site. No information for CO concentrations was available at monitoring stations in Santa Clara County.

Table 4.1-2 Ambient Air Quality Data

Pollutant	2018	2019	2020
Ozone (ppm), Worst 1-Hour	0.067	0.083	0.098
Number of days of State exceedances (>0.09 ppm)	0	0	1
Ozone (ppm), 8-Hour Average	0.050	0.077	0.078
Number of days of State exceedances (>0.07 ppm)	0	2	1
Number of days of Federal exceedances (>0.07 ppm)	0	2	1
Particulate Matter <10 microns, µg/m ³ , Worst 24 Hours	121.8	77.1	137.1
Number of days above State standard (>50 µg/m ³)	4	4	10
Number of days above Federal standard (>150 µg/m ³)	0	0	0
Particulate Matter <2.5 microns, µg/m ³ , Worst 24 Hours	120.9	29.5	124.1
Number of days above Federal standard (>35 µg/m ³)	13	0	9
ppm = parts per million; µg/m ³ = micrograms per cubic meter Redwood City Monitoring Station was used for Ozone 1-hour, Ozone 8-hour average, and PM _{2.5} . San Jose-Jackson Street Monitoring Station was used for PM ₁₀ . Source: CARB 2022Error! Hyperlink reference not valid.			

As shown in Table 4.1-2, one-hour ozone concentrations exceeded State standards once in 2020 and eight-hour ozone concentrations exceeded federal and State standards twice each in 2019 and once each in 2020. Additionally, PM₁₀ concentrations exceeded State standards multiple times in 2018, 2019, and 2020, and PM_{2.5} concentrations exceeded federal standards several times in 2018. No other thresholds were exceeded in the years 2018 through 2020.

e. Regulatory Setting

The Federal Clean Air Act governs air quality in the United States. In addition to being subject to federal requirements, air quality in California is also governed by more stringent regulations under the California Clean Air Act. At the federal level, the U.S. EPA administers the Clean Air Act (CAA). The CAA is administered by the CARB at the state level and by the AQMDs at the regional and local levels. The BAAQMD regulates air quality at the regional level, which includes the nine-county Bay Area.

Federal

The U.S. EPA is responsible for enforcing the federal CAA. The U.S. EPA is also responsible for establishing the National Ambient Air Quality Standards (NAAQS). The NAAQS are required under the 1977 CAA and subsequent amendments. The EPA regulates emission sources that are under the exclusive authority of the federal government, such as aircraft, ships, and certain types of locomotives. The agency has jurisdiction over emission sources outside state waters (e.g., beyond the outer continental shelf) and establishes various emission standards, including those for vehicles sold in states other than California. Automobiles sold in California must meet the stricter emission standards established by the CARB.

State

In California, the CARB, which became part of the California Environmental Protection Agency in 1991, is responsible for meeting the State requirements of the federal CAA, administering the California CAA, and establishing the California Ambient Air Quality Standards (CAAQS). The California CAA, as amended in 1992, requires all air districts in the state to endeavor to achieve and maintain the CAAQS. The CAAQS are generally more stringent than the corresponding federal standards and incorporate additional standards for sulfates, hydrogen sulfide, vinyl chloride and visibility reducing particles. The CARB regulates mobile air pollution sources, such as motor vehicles. The agency is responsible for setting emission standards for vehicles sold in California and for other emission sources, such as consumer products and certain off-road equipment. CARB established passenger vehicle fuel specifications, which became effective on March 1996. CARB oversees the functions of local APCDs, which in turn administer air quality activities at the regional and county level.

Regional

BAAQMD Clean Air Plan

The BAAQMD is responsible for assuring that the federal and state ambient air quality standards are attained and maintained in the Bay Area. The BAAQMD is also responsible for adopting and enforcing rules and regulations concerning air pollutant sources, issuing permits for stationary sources of air pollutants, inspecting stationary sources of air pollutants, responding to citizen complaints, monitoring ambient air quality and meteorological conditions, awarding grants to reduce motor vehicle emissions, conducting public education campaigns, as well as many other activities.

The BAAQMD adopted the 2017 Clean Air Plan (2017 Plan) on April 19, 2017, as an update to the 2010 Clean Air Plan. The 2017 Plan, which focuses on protecting public health and the climate, defines an integrated, multi-pollutant control strategy that includes all feasible measures to reduce emissions of ozone precursors (including transport of ozone and its precursors to neighboring air

basins), PM, and toxic air contaminants (TACs). To protect public health, the control strategy will decrease population exposure to PM and TACs in communities that are most impacted by air pollution with the goal of eliminating disparities in exposure to air pollution between communities. The control strategy will protect the climate by reducing GHG emissions and developing a long-range vision of how the Bay Area could look and function in a year 2050 post-carbon economy (BAAQMD 2017b).

Plan Bay Area 2050

Plan Bay Area 2050 is a state-mandated, integrated long-range transportation, land-use, and housing plan that would support a growing economy, provide more housing and transportation choices and reduce transportation-related pollution in the nine-county San Francisco Bay Area (Association of Bay Area Governments [ABAG] and Metropolitan Transportation Commission [MTC] 2021). The SCS builds on earlier efforts to develop an efficient transportation network and grow in a financially and environmentally responsible way. Plan Bay Area 2050 focuses on advancing equity and improving resiliency in the Bay Area by creating strategies in the following four elements: Housing, Economy, Transportation, and Environment. The Plan discusses how the future is uncertain due to anticipated employment growth, lack of housing options, and outside forces, such as climate change and economic turbulence. These uncertainties will impact growth in the Bay Area and exacerbate issues for those who are historically and systemically marginalized and underserved and excluded. Thus, Plan Bay Area 2050 has created strategies and considered investments that will serve those systemically underserved communities and provide equitable opportunities. The Plan presents a total of 35 strategies to outline how the \$1.4 trillion dollar investment would be utilized. The strategies include, but are not limited to, the following: providing affordable housing, allowing higher-density in proximity to transit-corridors, optimizing the existing roadway network, creating complete streets, providing subsidies for public transit, reducing climate emissions, and expanding open space area. To bring these strategies to fruition, it will require participation by agencies, policymakers, and the public. An implementation plan is also included as part of the Plan to assess the requirements needed to carry out the strategies, identify the roles of pertinent entities, create an appropriate method to implement the strategies, and create a timeline for implementation (ABAG/MTC 2021).

City of Palo Alto 2030 Comprehensive Plan

The City's 2030 Comprehensive Plan Natural Environment Element describes the City's efforts and programs to improve air quality. The plan includes goals and policies focused on supporting alternative modes of transportation to reduce dependence on the automobile (City of Palo Alto 2017). Goal N-5 identifies the City's commitment to "Clean, healthful air for Palo Alto and the San Francisco Bay Area."

Relevant policies from the Comprehensive Plan include:

- Policy N-5.1** Support regional, State, and federal programs that improve air quality in the Bay Area because of its critical importance to a healthy Palo Alto.
- Policy N-5.2** Support behavior changes to reduce emissions of particulates from automobiles.
- Policy N-5.3** Reduce emissions of particulates from, manufacturing, dry cleaning, construction activity, grading, wood burning, landscape maintenance, including leaf blowers and other sources.

- Policy N-5.4** All potential sources of odor and/or toxic air contaminants shall be adequately buffered, or mechanically or otherwise mitigated to avoid odor and toxic impacts that violate relevant human health standards.
- Policy N-5.5** Support the BAAQMD in its efforts to achieve compliance with existing air quality regulations by continuing to require development applicants to comply with BAAQMD construction emissions control measures and health risk assessment requirements.
- Policy N-5.6** Mitigate potential sources of toxic air contaminants through siting or other means to reduce human health risks and meet the BAAQMD's applicable threshold of significance. When siting new sensitive receptors such as schools, day care facilities, parks or playgrounds, medical facilities and residences within 1,000 feet of stationary sources of toxic air contaminants or roadways used by more than 10,000 vehicles per day, require projects to consider potential health risks and incorporate adequate precautions such as high-efficiency air filtration into project design.

In addition, Mitigation Measure AIR-2a in the EIR for the City's Comprehensive Plan states, "as part of the City's development approval process, the City shall require applicants for future development projects to comply with the current BAAQMD basic control measures for reducing construction emissions of PM₁₀ (Table 8-2, *Basic Construction Mitigation Measures Recommended for All Proposed Projects*, of the BAAQMD CEQA Guidelines)" (City of Palo Alto 2016a).

Further, Mitigation Measure AIR-3b in the EIR for the City's Comprehensive Plan requires compliance with best practices for air filtration recommended by the BAAQMD. Such measures include, but are not limited to, the following, which would be incorporated into the project as conditions of approval:

- Air intakes shall be located away from high volume roadways and/or truck loading zones
- Heating, ventilation, and air conditioning systems of the buildings shall be provided with appropriately sized MERV filters (City of Palo Alto 2016a).

For reference, the BAAQMD Basic Construction Mitigation Measures are listed below (BAAQMD 2017c).

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

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

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

City of Palo Alto Municipal Code

Development projects in the City are required to comply with Title 16, Chapter 16.14, California Green Building Standards, and Chapter 16.18, Local Energy Efficiency Standards for Certain Buildings and Improvements, contained in the City of Palo Alto Municipal Code). Compliance with these requirements would reduce the overall energy demand of the project.

The Palo Alto Green Building Program includes implementation of the Green Building Ordinance, the Climate Protection Plan, and the Zero Waste Program. The Palo Alto Green Building Ordinance (Ord. 5393, 2017) requires applicants to incorporate sustainable design, construction, and operational requirements into most single-family residential, multi-family residential, and non-residential projects.

f. Sensitive Receptors

BAAQMD generally defines a sensitive receptor as a facility or land use that houses or attracts members of the population who are particularly sensitive to the effects of air pollutants, such as children, the elderly, and people with illnesses. Most sensitive receptor locations are therefore residences, schools, and hospitals and are located throughout the City. In addition, the project would introduce new sensitive receptors to the project site by constructing new residences.

The following existing places are considered sensitive receptor locations within 1,000 feet of the project site:

- Single-family residences along Olive Avenue approximately 90 feet west of the project site
- Single-family residences along Lambert Avenue approximately 380 feet southeast of the project site
- Single-family residences fronting Alma Street approximately 395 feet northeast of the project site
- Park Plaza Apartments fronting Park Boulevard approximately 410 feet north of the project site
- Single-family residences along Pepper Avenue approximately 700 feet southwest of the project site

4.1.2 Impact Analysis

a. Methodology and Significance Thresholds

Significance Thresholds

Based on Appendix G of the CEQA Guidelines, the proposed project would have a significant impact on air quality if it would:

1. Conflict with or obstruct the 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 nonattainment under an applicable federal or state ambient air quality standard;
3. Expose sensitive receptors to substantial pollutant concentrations; or
4. Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people.

Emissions Thresholds

This analysis uses the numeric thresholds in BAAQMD's May 2017 *CEQA Air Quality Guidelines* to evaluate air quality and to determine whether the impacts of the project exceed the thresholds identified in Appendix G of the State CEQA Guidelines.

The BAAQMD has developed screening criteria to provide lead agencies and project applicants with a conservative indication of whether a project could result in potentially significant air quality impacts. If all of the screening criteria are met by a project, then the lead agency or applicant would not need to perform a detailed air quality assessment of their project's air pollutant emissions and air quality impacts would be considered less than significant. These screening levels are generally representative of new development on greenfield sites without any form of mitigation measures taken into consideration. For projects that are infill, such as this project, emissions would be less than the greenfield-type project on which the screening criteria are based (BAAQMD 2017c). The operational screening size for condo/townhouse is 451 units and the construction-related screening size is 240 units. In order for construction related emissions to be considered less than significant, however, projects must comply with All *Basic Construction Mitigation Measures* and may not include demolition. Since the project would involve demolition of a portion of the existing commercial building at 200 Portage Avenue and the commercial building at 3040 Park Boulevard within the area of development. Therefore, the screening criteria for construction emissions would not be met.

For projects that do not meet the screening criteria, BAAQMD provides numeric significance thresholds. Table 4.1-3 presents the significance thresholds for construction and operational-related criteria air pollutant and precursor emissions being used for the purposes of this analysis. These 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. For the purposes of this analysis, the project would result in a significant impact if construction or operational emissions would exceed any of the thresholds shown in Table 4.1-3.

Table 4.1-3 Air Quality Thresholds of Significance

Pollutant/Precursor	Construction-Related Thresholds	Operation-Related Thresholds	
	Average Daily Emissions (pounds per day)	Maximum Annual Emissions (tpy)	Average Daily Emissions (lbs/day)
ROG	54	10	54
NOX	54	10	54
PM ₁₀	82 (exhaust)	15	82
PM _{2.5}	54 (exhaust)	10	54

Notes: tpy = tons per year; lbs/day = pounds per day; NOX = oxides of nitrogen; PM_{2.5} = fine particulate matter with an aerodynamic resistance diameter of 2.5 micrometers or less; PM₁₀ = respirable particulate matter with an aerodynamic resistance diameter of 10 micrometers or less; ROG = reactive organic gases; tpy = tons per year.

Source: Table 2-1, BAAQMD 2017c

Localized Carbon Monoxide Concentrations

BAAQMD has project-level screening criteria for carbon monoxide hotspots. A project would result in a less than significant impact to localized carbon monoxide concentrations if:

1. The project is consistent with an applicable congestion management program for designated roads or highways, regional transportation plan, and local congestion management agency plans
2. The project would not increase traffic volumes at affected intersections to more than 44,000 vehicles per hour
3. The project traffic would not increase traffic volumes at the affected intersections to more than 24,000 vehicles per hour where vertical and/or horizontal mixing is substantially limited (e.g., tunnel, parking garage).

Toxic Air Contaminants

In the absence of a qualified Community Risk Reduction Plan, BAAQMD has established the following *Thresholds of Significance* for local community risks and hazards associated with TACs and PM_{2.5} for assessing individual source impacts at a local level. Impacts would be significant if

- The Project would result in an increased cancer risk of > 10 in one-millions
- The Project would result in an increased non-cancer (i.e., Chronic or Acute) risk of > 1.0 Hazard Index
- The Project would result in an ambient PM_{2.5} concentration increase of > 0.3 µg/m³ annual average

A project would be considered to have a cumulatively considerable impact if the aggregate total of current and proposed TAC sources within a 1,000 feet radius of the project fence-line in addition to the project would exceed the *Cumulative Thresholds of Significance*. Impacts would be significant if:

- The Project would result in an increased cancer risk of > 100 in one million
- The Project would result in an increased non-cancer (i.e., Chronic or Acute) risk of > 10 Hazard Index
- The Project would result in an ambient PM_{2.5} concentration increase of > 0.8 µg/m³ annual average

Excess cancer risks are defined as those occurring in excess of or above and beyond those risks that would normally be associated with a location or activity if toxic pollutants were not present. Non-carcinogenic health effects are expressed as a hazard index, which is the ratio of expected exposure levels to an acceptable reference exposure level.

Methodology for Estimating Emissions

CalEEMod version 2020.4.0 was used to calculate total project emissions, which include construction and operational emissions.

Short-Term Construction Emissions

Construction-related emissions are generally short-term in duration but may still cause adverse air quality impacts. Demolition of the existing on-site commercial structures and construction of the proposed project would generate temporary emissions. Temporary emissions would result from three primary sources: operation of construction vehicles (e.g., scrapers, loaders, and excavators); ground disturbance during clearing and grading, which creates fugitive dust; and the application of asphalt, paint, or other oil-based substances. The extent of daily emissions, particularly ROGs and NO_x emissions, generated by construction equipment depends on the quantity of equipment used and the hours of operation for each project. The extent of fugitive dust (PM_{2.5} and PM₁₀) emissions would depend upon the following factors: 1) the amount of disturbed soils; 2) the length of disturbance time; 3) whether existing structures are demolished; 4) whether excavation is involved; and 5) whether transporting excavated materials offsite is necessary. The amount of ROG emissions generated by paints and oil-based substances, such as asphalt, depends upon the type and amount of material utilized.

CalEEMod was used to estimate air pollutant emissions associated with the project construction, which was assumed to occur over 18 months (see Appendix B for CalEEMod calculations). Construction would include demolition, site preparation, grading, trenching, building construction, paving, and architectural coating. Grading would require approximately 2,000 cubic yards of soil to be exported and 1,500 cubic yards of soil to be imported based on applicant provided information. Construction activities would result in temporary air quality impacts that may vary substantially from day to day, depending on the level of activity, the specific type of operation, and, for dust, the prevailing weather conditions.

In addition, it was assumed the project would comply with applicable regulatory standards, including BAAQMD rules and regulations regarding construction emission control measures. These include using equipment with Best Available Control Technology (BACT) such as diesel particulate filters (DPF) and using low VOC architectural coatings. CalEEMod was run using equipment equipped with DPF and using architectural coating factors in adherence to BAAQMD Regulation 8 Rule 3. Pursuant to Palo Alto Comprehensive Plan Policy N-5.5 and Mitigation Measure AIR-2a, which requires development applicants to comply with BAAQMD construction emissions control measures, watering of exposed surfaces was assumed to occur twice daily. CalEEMod settings were changed from default of no watering to reflect this policy requirement. Therefore, the modeling results provide a conservative estimate of emissions.

Long-Term Emissions

CalEEMod was also used to estimate operational emissions for the project, which included emissions from area sources, energy use, and mobile sources. Area source emissions are generated by landscape maintenance equipment, consumer products and architectural coatings. Emissions

attributed to energy use include natural gas consumption by appliances as well as for space and water heating. Mobile source emissions are generated by vehicle trips to and from the project site. The daily trips provided in the Local Transportation Analysis prepared by W-Trans in August 2022 were used to develop trip generation rates for the proposed development (Appendix H).

Existing Operational Emissions

The project site includes the northern portion of an existing two-story, 232,388 square feet commercial building located at 200 Portage Avenue that is used by several businesses, including 142,744 square feet of Research and Development (R&D) uses, 84,000 square feet of retail use, and 5,639 square feet of warehouse use. The retail use sits in the middle of the site and is currently vacant. The existing R&D uses, and the warehouse use are still in operation. The proposed project would result in the existing uses being demolished and relocated to the site previously occupied by the vacant retail use. The 91 townhouse units would then be constructed where the R&D uses, and the warehouse use were demolished. Once relocated and constructed, the R&D and warehouse uses would operate the same as before. Aside from demolition of the 3040 Park Boulevard structure, there would be no change in existing operational emissions since the existing land uses and how they operate would not change. The operational emissions analysis takes into account the demolition of the building at 3040 Park Boulevard. Operational emissions associated with the building were estimated using CalEEMod and subtracted from emissions associated with the proposed project in order to calculate the net new operational emissions associated with the project. To determine whether a significant regional air quality impact would occur, the increase in emissions was compared to the BAAQMD's recommended regional thresholds for operational emissions.

b. Project Impacts and Mitigation Measures

Threshold 1: Would the project conflict with or obstruct implementation of the applicable air quality plan?

Impact AQ-1 THE PROPOSED PROJECT WOULD NOT CONFLICT WITH OR OBSTRUCT THE IMPLEMENTATION OF THE 2017 CLEAN AIR PLAN. THIS IMPACT WOULD BE LESS THAN SIGNIFICANT.

The California Clean Air Act requires that air districts create a Clean Air Plan that describes how the jurisdiction will meet air quality standards. The most recently adopted air quality plan is the BAAQMD 2017 Plan. The 2017 Plan updates the most recent Bay Area plan, the 2010 Clean Air Plan, pursuant to air quality planning requirements defined in the California Health and Safety Code. To fulfill state ozone planning requirements, the 2017 control strategy includes all feasible measures to reduce emissions of ozone precursors—ROG and NO_x—and reduce transport of ozone and its precursors to neighboring air basins. The Clean Air Plan builds upon and enhances the BAAQMD's efforts to reduce emissions of fine particulate matter and TACs. The 2017 Plan does not include control measures that apply directly to individual development projects. Instead, the control strategy includes control measures related to stationary sources, transportation, energy, buildings, agriculture, natural and working lands, waste management, water, and super-GHG pollutants.

The 2017 CAP focuses on two paramount goals, both consistent with the mission of BAAQMD:

- Protect air quality and health at the regional and local scale by attaining all national and state air quality standards and eliminating disparities among Bay Area communities in cancer health risk from TACs

- Protect the climate by reducing Bay Area GHG emissions to 40 percent below 1990 levels by 2030, and 80 percent below 1990 levels by 2050

Under BAAQMD's methodology, a determination of consistency with the 2017 Plan should demonstrate that a project:

- Supports the primary goals of the air quality plan
- Includes applicable control measures from the air quality plan
- Does not disrupt or hinder implementation of any air quality plan control measures

A project that would not support the 2017 Clean Air Plan's goals would not be considered consistent with the 2017 Plan. On an individual project basis, consistency with BAAQMD quantitative thresholds is interpreted as demonstrating support for the Clean Air Plan's goals. As discussed under Impact AQ-2 below, the project would not result in exceedances of BAAQMD thresholds for criteria air pollutants and thus would not conflict with the 2017 Plan's goal to attain air quality standards.

The 2017 Clean Air Plan includes goals and measures to increase the use of electric vehicles, promote the use of on-site renewable energy, and encourage energy efficiency. The project includes features that are consistent with these goals and measures, including meeting California Green Building Standards, incorporating energy efficient appliances and lighting, providing Electric Vehicle (EV) charging in each unit, and providing 86 bicycle parking spaces. In addition, the project would include an all-electric design pursuant to the City's All-Electric Mandate and the 2019 California State Energy Standards, Title 24 Part 6. The project would also be required to install PV systems equal to the expected electricity usage pursuant to Section 150.1(c)(14) of the 2019 Building Energy Efficiency Standards. Therefore, the project would not conflict with or obstruct the implementation of an applicable air quality plan and the project would have a less than significant impact.

Mitigation Measures

No mitigation measures would be required.

Threshold 2: Would the project result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard?

Impact AQ-2 CONSTRUCTION AND OPERATION OF THE PROPOSED PROJECT WOULD NOT RESULT IN EMISSIONS OF CRITERIA POLLUTANTS IN EXCESS OF BAAQMD DAILY AND ANNUAL THRESHOLDS. THIS IMPACT WOULD BE LESS THAN SIGNIFICANT.

Construction of the project would generate temporary construction emissions (direct emissions) and long-term operational emissions (indirect emissions). Temporary air pollutant emissions generated by construction are associated with fugitive dust (PM₁₀ and PM_{2.5}) and exhaust emissions from heavy construction vehicles, in addition to ROG that would be released during the drying phase following application of architectural coatings.

Long-term emissions associated with operation of the project would include emissions from vehicle trips (mobile sources); electricity use (energy sources); and landscape maintenance equipment, consumer products, and architectural coating associated with on-site development (area sources).

Construction Emissions

Table 4.1-4 summarizes the estimated maximum daily construction emissions each year during the construction period. While BAAQMD thresholds apply to average daily construction emissions, this analysis conservatively analyzes estimated maximum daily construction emissions, as reported by CalEEMod. As shown in Table 4.1-4, project construction emissions would not exceed BAAQMD thresholds for ROG, NO_x, PM₁₀, or PM_{2.5} and impacts would be less than significant.

Table 4.1-4 Estimated Construction Emissions

Sources	Average Daily Emissions (lbs/day)					
	ROG	NO _x	CO	PM ₁₀ (exhaust)	PM _{2.5} (exhaust)	SO _x
Maximum Daily Construction Emissions	18	27	25	<1	<1	<1
BAAQMD Thresholds	54	54	N/A	82	54	N/A
Threshold Exceeded?	No	No	N/A	No	No	N/A

See Appendix B for AQ CalEEMod worksheets; emission data presented is the highest of winter or summer outputs
 N/A = not applicable; lbs/day = pounds per day; ROG = reactive organic gases; NO_x = oxides of nitrogen; CO = Carbon Monoxide; PM_{2.5} = fine particulate matter with an aerodynamic resistance diameter of 2.5 micrometers or less; PM₁₀ = respirable particulate matter with an aerodynamic resistance diameter of 10 micrometers or less; SO_x = oxides of sulfur.
 No BAAQMD threshold for CO or SO_x

Operational Emissions

Operational emissions are those associated with the general use of the project after construction. As mentioned in Section 4.1.1e, since existing land uses on the site would not change, operational emissions from existing R&D uses would remain the same. Therefore, net emissions were not analyzed for this project.

Table 4.1-5 summarizes the project's net operational daily emissions and compares them to BAAQMD thresholds and Table 4.1-6 summarizes the project's net operational annual emissions and compares them to BAAQMD thresholds.

Table 4.1-5 Estimated Operational Daily Emissions

Sources	Estimated Emissions (lbs/day)					
	ROG	NO _x	CO	PM ₁₀	PM _{2.5}	SO _x
Proposed Project						
Area	5	<1	8	<1	<1	<1
Energy	0	0	0	0	0	0
Mobile	2	2	14	3	1	<1
<i>Maximum Daily Operational Emissions (Proposed Project)</i>	<i>7</i>	<i>2</i>	<i>21</i>	<i>3</i>	<i>1</i>	<i><1</i>
Existing Uses to be Removed						
Area	(<1)	(0)	(<1)	(<1)	(<1)	(<1)
Energy	(<1)	(<1)	(<1)	(<1)	(<1)	(<1)
Mobile	(<1)	(<1)	(1)	(<1)	(<1)	(<1)
<i>Maximum Daily Operational Emissions (Existing Uses to be Removed)</i>	<i>(<1)</i>	<i>(<1)</i>	<i>(1)</i>	<i>(<1)</i>	<i>(<1)</i>	<i>(<1)</i>

Sources	Estimated Emissions (lbs/day)					
	ROG	NO _x	CO	PM ₁₀	PM _{2.5}	SO _x
Total Net Daily Operational Emissions	7	2	20	3	1	<1
BAAQMD Average Daily Thresholds	54	54	N/A	82	54	N/A
Threshold Exceeded?	No	No	No	No	No	No

See Appendix B for AQ CalEEMod worksheets; emission data presented is the highest of winter or summer outputs

N/A = not applicable; lbs/day = pounds per day; ROG = reactive organic gases; NO_x = oxides of nitrogen; CO = Carbon Monoxide; PM_{2.5} = fine particulate matter with an aerodynamic resistance diameter of 2.5 micrometers or less; PM₁₀ = respirable particulate matter with an aerodynamic resistance diameter of 10 micrometers or less; SO_x = oxides of sulfur.

() denotes subtraction

No BAAQMD threshold for CO or SO_x

Table 4.1-6 Estimated Operational Annual Emissions

Sources	Estimated Emissions (tpy)					
	ROG	NO _x	CO	PM ₁₀	PM _{2.5}	SO _x
Proposed Project						
Area	1	<1	1	<1	<1	<1
Energy	0	0	0	0	0	0
Mobile	<1	<1	2	1	<1	<1
Total Annual Emissions (Proposed Project)	1	<1	3	1	<1	<1
Existing Uses to be Removed						
Area	(<1)	(0)	(<1)	(0)	(0)	(0)
Energy	(<1)	(<1)	(<1)	(<1)	(<1)	(<1)
Mobile	(<1)	(<1)	(<1)	(<1)	(<1)	(<1)
Total Annual Emissions (Existing Uses to be Removed)	(<1)	(<1)	(<1)	(<1)	(<1)	(<1)
Total Net Annual Operational Emissions	1	<1	3	1	<1	<1
BAAQMD Annual Thresholds	10	10	N/A	15	10	N/A
Threshold Exceeded?	No	No	No	No	No	No

See Appendix B for AQ CalEEMod worksheets; annual output

N/A = not applicable; tpy = tons per year; ROG = reactive organic gases; NO_x = oxides of nitrogen; CO = Carbon Monoxide; PM_{2.5} = fine particulate matter with an aerodynamic resistance diameter of 2.5 micrometers or less; PM₁₀ = respirable particulate matter with an aerodynamic resistance diameter of 10 micrometers or less; SO_x = oxides of sulfur.

() denotes subtraction

No BAAQMD threshold for CO or SO_x

As shown in Table 4.1-5 and Table 4.1-6, the project's estimated net daily and annual emissions would not exceed BAAQMD maximum daily and annual emissions thresholds for ROG, NO_x, PM₁₀, or PM_{2.5}. Therefore, the project would not result in potentially significant air quality impacts from operation emissions and impacts would be less than significant.

Mitigation Measures

No mitigation measures would be required.

Threshold 3: Would the project expose sensitive receptors to substantial pollutant concentrations?

Impact AQ-3 THE PROPOSED PROJECT WOULD NOT GENERATE SUBSTANTIAL CONCENTRATIONS OF CARBON MONOXIDE (CO) OR CREATE NEW STATIONARY SOURCES OF TOXIC AIR CONTAMINANT (TAC) EMISSIONS. IN ADDITION, COMPLIANCE WITH EXISTING CITY OF PALO ALTO REQUIREMENTS FOR USING BEST MANAGEMENT PRACTICES FOR CONSTRUCTION AND AIR FILTRATION RECOMMENDED BY THE BAAQMD WOULD REDUCE IMPACTS FROM TACS. THIS IMPACT WOULD BE LESS THAN SIGNIFICANT.

Certain population groups such as children, the elderly, and people with health issues are particularly sensitive to air pollution. The majority of sensitive receptor locations are schools, residences and hospitals. The closest sensitive receptors to the project site are single-family residences along Olive Avenue approximately 90 feet west of the site. The project also includes the siting of new sensitive receptors in the form of 91 new units. Localized air quality impacts to sensitive receptors typically result from CO hotspots and TACs, which are discussed in the following subsections.

Carbon Monoxide Hotspots

A CO hotspot is a localized concentration of CO that is above a CO ambient air quality standard. Localized CO hotspots can occur at areas with high vehicle density, such as intersections with heavy peak hour traffic. A project's localized air quality impact is considered significant if CO concentrations exceed the federal one-hour standard of 35.0 ppm and state one-hour standard of 20 ppm, or the federal and state eight-hour standard of 9.0 ppm (California Air Resources Board [CARB] 2021a).

BAAQMD recommends comparing project's attributes with the following screening criteria as a first step to evaluating whether the project would result in the generation of CO concentrations that would substantially contribute to an exceedance of the *Thresholds of Significance* (BAAQMD 2017c). The project would result in a less than significant impact to localized CO concentrations if:

1. The project is consistent with an applicable congestion management program for designated roads or highways, regional transportation plan, and local congestion management agency plans.
2. The project would not increase traffic volumes at affected intersections to more than 44, 000 vehicles per hour.
3. The project traffic would not increase traffic volumes at the affected intersections to more than 24,000 vehicles per hour where vertical and/or horizontal mixing is substantially limited (e.g., tunnel, parking garage).

According to the Local Transportation Analysis prepared by W-Trans, project would be consistent with an applicable congestion management program [Santa Clara Valley Transportation Authority (VTA) Congestion Management Program (CMP)]. In addition, the project would generate an average of 596 net new vehicle trips per day and would not increase traffic volumes at affected intersections to more than 44,000 vehicles per hour. As discussed under Section 4.8, *Transportation*, the seven studied intersections would be expected to operate at the same LOS as without the addition of project-related traffic, except for two minor street approaches to El Camino Real. During the a.m. and p.m. peak hours, intersection 5 (El Camino Real/Olive Avenue – Westbound Olive Avenue Approach) and intersection 7 (El Camino Real/Lambert Avenue – Westbound Lambert Avenue Approach) would operate at an unacceptable LOS F with or without the addition of project-

generated vehicle trips. The project would not increase traffic volumes at affected intersections to more than 24,000 vehicles per hour where vertical and/or horizontal mixing is substantially limited (e.g., tunnels, bridge underpasses, parking garages, natural or urban street canyons, below-grade roadways), as the project site is not located near such intersections. Therefore, the project would satisfy the screening threshold and have a less than significant impact on local CO concentrations.

Toxic Air Contaminants

TACs are defined by California law as air pollutants that may cause or contribute to an increase in mortality or an increase in serious illness, or which may pose a present or potential hazard to human health. The following subsections discuss the project's potential to result in impacts related to TAC emissions during construction and operation.

Construction

Construction-related activities would result in temporary project-generated emissions of diesel particulate matter (DPM) exhaust emissions from off-road, heavy-duty diesel equipment for site preparation, grading, building construction, and other construction activities. DPM was identified as a TAC by CARB in 1998 (CARB 2021).

Generation of DPM from construction projects typically occurs in a single area for a short period. Construction of the proposed project would occur over approximately 18 months. The dose to which the receptors are exposed is the primary factor used to determine health risk. Dose is a function of the concentration of a substance or substances in the environment and the extent of exposure that person has with the substance. Dose is positively correlated with time, meaning that a longer exposure period would result in a higher exposure level for the Maximally Exposed Individual. The risks estimated for a Maximally Exposed Individual are higher if a fixed exposure occurs over a longer period of time. According to the California Office of Environmental Health Hazard Assessment, health risk assessments, which determine the exposure of sensitive receptors to toxic emissions, should be based on a 70-year exposure period; however, such assessments should be limited to the period/duration of activities associated with the project. Thus, the duration of proposed construction activities (i.e., 18 months) is approximately five percent of the total exposure period used for 30-year health risk calculations. Current models and methodologies for conducting health-risk assessments are associated with longer-term exposure periods of 9, 30, and 70 years, which do not correlate well with the temporary and highly variable nature of construction activities, resulting in difficulties in producing accurate estimates of health risk (BAAQMD 2017c).

The maximum PM₁₀ and PM_{2.5} emissions would occur during demolition, site preparation and grading activities. These activities would last for approximately 70 days. PM emissions would decrease for the remaining construction period because construction activities such as building construction and architectural coating would require less intensive construction equipment. While the maximum DPM emissions associated with demolition, site preparation, and grading activities would only occur for a portion of the overall construction period, these activities represent the worst-case condition for the total construction period. This would represent less than one percent of the total 30-year exposure period for health risk calculation. Given the aforementioned discussion, DPM generated by project construction would not create conditions where the probability is greater than one in one million of contracting cancer for the Maximally Exposed Individual or to generate ground-level concentrations of non-carcinogenic TACs that exceed a Hazard Index greater than one for the Maximally Exposed Individual.

In addition, as mentioned above under *City of Palo Alto 2030 Comprehensive Plan*, the project would be required to implement the current BAAQMD *Basic Construction Mitigation Measures* during all phases of construction on the project site to reduce dust emissions, and all equipment would be equipped with DPF technology. Therefore, project construction would not expose sensitive receptors to substantial TAC concentrations, and impacts would be less than significant.

Operation

Sources of operational TACs include, but are not limited to, land uses such as freeways and high-volume roadways, truck distribution centers, ports, rail yards, refineries, chrome plating facilities, dry cleaners using perchloroethylene, and gasoline dispensing facilities. The project does not include construction of new gas stations, dry cleaners, highways, roadways, or other sources that could be considered new permitted or non-permitted source of TAC or PM_{2.5} in proximity to receivers. In addition, the project would not introduce a new stationary source of emissions and the mobile emissions generated from the project would be minimal and spread over a broad geographical area.

Therefore, project operation would not expose sensitive receptors to substantial TAC concentrations, and impacts would be less than significant.

Mitigation Measures

No mitigation measures would be required.

Threshold 4: Would the project result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?
--

Impact AQ-4 THE PROPOSED PROJECT WOULD NOT INVOLVE USES THAT GENERATE SUBSTANTIAL ODORS. CONSTRUCTION ACTIVITIES, SPECIFICALLY OPERATION OF HEAVY EQUIPMENT, MAY GENERATE ODORS. HOWEVER, THIS ODOR GENERATION WOULD BE TEMPORARY IN NATURE AND LIMITED TO THE DURATION OF CONSTRUCTION ACTIVITIES ON THE PROJECT SITE. THIS IMPACT WOULD BE LESS THAN SIGNIFICANT.

Table 3-3 in the BAAQMD's 2017 *CEQA Air Quality Guidelines* provides odor screening distances for land uses that have the potential to generate substantial odor complaints. The uses in the table include wastewater treatment plants, landfills or transfer stations, refineries, composting facilities, confined animal facilities, food manufacturing, smelting plants, and chemical plants (BAAQMD 2017c). Odors are typically associated with industrial projects involving the use of chemicals, solvents, petroleum products, and other strong-smelling elements used in manufacturing processes, as well as sewage treatment facilities and landfills. The Palo Alto Comprehensive Plan EIR notes that residential and nonresidential development could include sources of odors, such as composting, greenwaste, and recycling operations; food processing; chemical manufacturing; and painting/coating operations, because these are permitted uses in the commercial and industrial areas in the city.

During construction activities, heavy equipment and vehicles would emit odors associated with vehicle and engine exhaust and during idling. However, these odors would be intermittent and temporary and would cease upon completion.

The project does not propose, nor would locate, new sensitive receptors in proximity to, odor-emitting uses as identified in BAAQMD's 2017 *CEQA Air Quality Guidelines* or the Palo Alto Comprehensive Plan EIR. The proposed residential uses would not generate objectionable odors that would affect a substantial number of people. Furthermore, the project would be subject to

BAAQMD Regulation 7, Odorous Substances, which requires abatement of any nuisance generating an odor complaint. Therefore, the project would not substantially cause new sources of odors and would not significantly expose sensitive receptors to existing odors, and impacts would be less than significant.

Mitigation Measures

No mitigation measures are required.

c. Cumulative Analysis

The planned and pending projects near the proposed project are listed in Table 3-1 (Section 3, *Environmental Setting*). In developing thresholds of significance for air pollutants, BAAQMD considered the emission levels for which a project's individual emissions would be cumulatively considerable. If a project exceeds the identified significance thresholds, its emissions would be cumulatively considerable, resulting in significant adverse air quality impacts to the region's existing air quality conditions. Therefore, additional analysis to assess cumulative impacts is unnecessary (BAAQMD 2017a). Construction and operation of the proposed project would not exceed emission thresholds and would therefore have a less than significant cumulative impact on air quality.

In addition, the project is not located in proximity to existing or planned projects that would generate TAC or odor emissions affecting a substantial number of people. Furthermore, BAAQMD Regulation 7 would require abatement of any nuisance generating an odor complaint. Therefore, no cumulative TAC or odor emissions impacts would occur.

4.2 Cultural Resources and Tribal Cultural Resources

This section analyzes the proposed project's potential impacts related to cultural resources including historical, archeological, and tribal cultural resources as well as human remains. The analysis in this section is based partially on a Historic Resource Evaluation (HRE) prepared for 340 Portage Avenue by Page & Turnbull in February 2019, an HRE prepared for 3040 Park Boulevard prepared by Rincon Consultants in September 2021, a Historical Resources Assessment and Impact Findings prepared by Rincon Consultants in February 2022, and an Archaeological Resources Assessment prepared by Rincon Consultants in February 2022. These reports are provided in Appendix C of this EIR.

4.2.1 Setting

a. Regulatory Framework

This regulatory framework section identifies the federal, state, and local laws, statutes, guidelines, and regulations that govern the identification and treatment of cultural resources as well as the analysis of potential impacts to cultural resources. The lead agency must consider the provisions and requirements of this regulatory framework when rendering decisions on projects that have the potential to affect cultural resources.

Federal

National Register of Historic Places

The National Register of Historic Places (NRHP) was established by the National Historic Preservation Act of 1966 as "an authoritative guide to be used by federal, state, and local governments, private groups and citizens to identify the Nation's cultural resources and to indicate what properties should be considered for protection from destruction or impairment" (Code of Federal Regulations [CFR] 36, 60.2). The NRHP recognizes 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. Districts, sites, buildings, structures, and objects of potential significance must also possess integrity of location, design, setting, materials, workmanship, feeling, and association. A property is eligible for the NRHP if it is significant under one or more of the following criteria:

- Criterion A:** It is associated with events that have made a significant contribution to the broad patterns of our history;
- Criterion B:** It is associated with the lives of persons who are significant in our past;
- Criterion C:** It embodies the distinctive characteristics of a type, period, or method of construction, or represents the work of a master, or possesses high artistic values, or represents a significant and distinguishable entity whose components may lack individual distinction; and/or
- Criterion D:** It has yielded, or may be likely to yield, information important in prehistory or history.

In addition to meeting at least one of these criteria, a property must retain “historic integrity,” which is defined in National Register Bulletin 15 as the “ability of a property to convey its significance” (National Park Service 1990). In order to assess integrity, the National Park Service recognizes seven aspects or qualities that, considered together, define historic integrity. To retain integrity, a property must possess several, if not all, of these seven qualities, which are defined in the following manner in National Register Bulletin 15:

1. Location – the place where the historic property was constructed or the place where the historic event occurred;
2. Design – the combination of elements that create the form, plan, space, structure, and style of a property;
3. Setting – the physical environment of a historic property;
4. Materials – are the physical elements that were combined or deposited during a particular period of time and in a particular pattern or configuration to form a historic property.
5. Workmanship – the physical evidence of the crafts of a particular culture or people during any given period in history or prehistory;
6. Feeling – a property’s expression of the aesthetic or historic sense of a particular period of time;
7. Association – the direct link between an important historic event or person and a historic property.

State

California Environmental Quality Act

CEQA Guidelines §15064.5(a)(3) states that a resource shall be considered by the lead agency to be “historically significant” if the resource meets the criteria for listing on the California Register of Historical Resources (CRHR) (Pub. Res. Code §§5024.1, Title 14 CCR, Section 4852), including the following:

1. Is associated with events that have made a significant contribution to the broad patterns of California’s history and cultural heritage;
2. Is associated with the lives of persons important in our past;
3. Embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values; or
4. Has yielded, or may be likely to yield, information important in prehistory or history.

Cultural resources meeting one or more of these criteria are defined as “historical resources” under CEQA (Office of Historic Preservation 2000). Resources included in a local register of historical resources [pursuant to Section 5020.1(k) of the Public Resources Code] or identified as significant in a historical resources survey [meeting the criteria in Section 5024.1(g) of the Public Resources Code], also are considered “historical resources” for the purposes of CEQA.

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, or identified in a historical resources survey, does not preclude a lead agency from determining that the resource may be a historical resource as defined in Public Resources Code Sections 5020.1(j) or 5024.1.

In addition, the CEQA Guidelines (Section 15064.5(c) (3), and (4)) provide tests for significance for archaeological resources, as summarized below:

1. If the site does not meet the criteria [for a historical resource] (a) but does meet the definition of a unique archaeological resource in Section 21083.2 of the PRC, the site shall be treated in accordance with the provisions of section 21083.2.
2. If an archaeological resource is neither a unique archaeological nor an historical resource, the effects of the project on those resources shall not be considered a significant effect on the environment.

However, in practice, archaeological resources that are unique are also eligible for the CRHR, and are, thus, historical resources.

Secretary of the Interior's Standards for the Treatment of Historic Properties

In accordance with the California Code of Regulations and CEQA Guidelines, a project that has been determined to conform with the *Secretary of the Interior's Standards for the Treatment of Historic Properties* (*Secretary's Standards*) is generally considered to be a project that will not cause a significant adverse impact to a historical resource (14 California Code of Regulations {CCR} Section 15126.4). If a project meets the *Secretary's Standards*, the project can qualify for a potential categorical exemption from CEQA (14 CCR Section 15331).

The goal of the *Secretary's Standards* is to outline treatment approaches that allow for the retention of and/or sensitive changes to the distinctive materials and features that lend a historical resource its significance. When changes are carried out according to the Secretary of the Interior's Standards, the historical resource retains its historic integrity and thereby continues to convey the reasons for its significance. The *Secretary's Standards* and associated Guidelines (36 CFR 67) are "neither technical nor prescriptive but are intended to promote responsible preservation practices that help protect" cultural resources. The *Secretary of the Interior's Standards and Guidelines* offer general recommendations for preserving, maintaining, repairing, and replacing historical materials and features, as well as designing new additions or making alterations.

The *Secretary's Standards* also provide guidance on new construction adjacent to historic districts and properties, in order to ensure that there are no adverse impacts to integrity as a result of a change in setting. The ten *Secretary's Standards for Rehabilitation* are:

1. A property shall be used for its historic purpose or be placed in a new use that requires minimal change to the defining characteristics of the building and its site and environment.
2. The historic character of a property shall be retained and preserved. The removal of historic materials or alteration of features and spaces that characterize a property shall be avoided.
3. Each property shall be recognized as a physical record of its time, place, and use. Changes that create a false sense of historical development, such as adding conjectural features or architectural elements from other buildings, shall not be undertaken.
4. Most properties change over time; those changes that have acquired historic significance in their own right shall be retained and preserved.
5. Distinctive features, finishes, and construction techniques or examples of craftsmanship that characterize a property shall be preserved.
6. Deteriorated historic features shall be repaired rather than replaced. Where the severity of deterioration requires replacement of a distinctive feature, the new feature shall match the old in design, color, texture, and other visual qualities and, where possible, materials. Replacement of missing features shall be substantiated by documentary, physical, or pictorial evidence.

7. Chemical or physical treatments, such as sandblasting, that cause damage to historic materials shall not be used. The surface cleaning of structures, if appropriate, shall be undertaken using the gentlest means possible.
8. Significant archeological resources affected by a project shall be protected and preserved. If such resources must be disturbed, mitigation measures shall be undertaken.
9. New additions, exterior alterations, or related new construction shall not destroy historic materials that characterize the property. The new work shall be differentiated from the old and shall be compatible with the massing, size, scale, and architectural features to protect the historic integrity of the property and its environment.
10. New additions and adjacent or related new construction shall be undertaken in such a manner that if removed in the future, the essential form and integrity of the historic property and its environment would be unimpaired.

In order to determine whether a project complies with the *Secretary's Standards*, the analysis must consider the "character-defining," or historically significant, features of the historical resource. Alterations and replacement of character-defining features over time can impair a historic property's integrity and result in a loss of historic status. Therefore, to ensure that a historic property remains eligible after implementation of projects, character-defining features should be identified and preserved.

Assembly Bill 52

As of July 1, 2015, California Assembly Bill 52 of 2014 (AB 52) was enacted and expands CEQA by defining a new resource category, "tribal cultural resources." Assembly Bill 52 establishes that "[a] project with an effect that may cause a substantial adverse change in the significance of a tribal cultural resource is a project that may have a significant effect on the environment" (PRC Section 21084.2). It further states that the lead agency shall establish measures to avoid impacts that would alter the significant characteristics of a tribal cultural resource, when feasible (PRC Section 21084.3). PRC Section 21084.3 (b)(2) provides examples of mitigation measures that lead agencies may consider to avoid or minimize impacts to tribal cultural resources.

PRC Section 21074 (a)(1)(A) and (B) defines tribal cultural resources as "sites, features, places, cultural landscapes, sacred places, and objects with cultural value to a California Native American tribe" and meets either of the following criteria:

- a. Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in PRC section 5020.1(k)
- b. A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of PRC Section 5024.1. In applying the criteria set forth in subdivision (c) of PRC Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.

In recognition of California Native American tribal sovereignty and the unique relationship of California local governments and public agencies with California Native American tribal governments, and respecting the interests and roles of project proponents, it is the intent AB 52 to accomplish all of the following:

- (1) Recognize that California Native American prehistoric, historic, archaeological, cultural, and sacred places are essential elements in tribal cultural traditions, heritages, and identities

- (2) Establish a new category of resources in CEQA called “tribal cultural resources” that considers the tribal cultural values in addition to the scientific and archaeological values when determining impacts and mitigation
- (3) Establish examples of mitigation measures for tribal cultural resources that uphold the existing mitigation preference for historical and archaeological resources of preservation in place, if feasible
- (4) Recognize that California Native American tribes may have expertise with regard to their tribal history and practices, which concern the tribal cultural resources with which they are traditionally and culturally affiliated. Because CEQA calls for a sufficient degree of analysis, tribal knowledge about the land and tribal cultural resources at issue should be included in environmental assessments for projects that may have a significant impact on those resources
- (5) In recognition of their governmental status, establish a meaningful consultation process between California Native American tribal governments and lead agencies, respecting the interests and roles of all California Native American tribes and project proponents, and the level of required confidentiality concerning tribal cultural resources, at the earliest possible point in CEQA environmental review process, so that tribal cultural resources can be identified, and culturally appropriate mitigation and mitigation monitoring programs can be considered by the decision making body of the lead agency
- (6) Recognize the unique history of California Native American tribes and uphold existing rights of all California Native American tribes to participate in, and contribute their knowledge to, the environmental review process pursuant to CEQA
- (7) Ensure that local and tribal governments, public agencies, and project proponents have information available, early in CEQA environmental review process, for purposes of identifying and addressing potential adverse impacts to tribal cultural resources and to reduce the potential for delay and conflicts in the environmental review process
- (8) Enable California Native American tribes to manage and accept conveyances of, and act as caretakers of, tribal cultural resources
- (9) Establish that a substantial adverse change to a tribal cultural resource has a significant effect on the environment

AB 52 also establishes a formal consultation process for California Native American tribes regarding those resources. The formal consultation process must be completed before a CEQA document can be released if a California Native American tribe traditionally and culturally affiliated with the geographic area of the proposed project requests consultation from the lead agency (PRC Section 21080.3.1). California Native American tribes to be included in the process are those that have requested notice of any proposed projects within the jurisdiction of the lead agency.

Codes Governing Human Remains

The disposition of human remains is governed by Section 7050.5 of the California Health and Safety Code and Sections 5097.94 and 5097.98 of the Public Resources Code and falls within the jurisdiction of the Native American Heritage Commission (NAHC). If human remains are discovered, the County Coroner must be notified within 48 hours and there should be no further disturbance to the site where the remains were found. If the remains are determined by the coroner to be Native American, the coroner is responsible for contacting the NAHC within 24 hours. The NAHC, pursuant

to Section 5097.98, will immediately notify those persons it believes to be most likely descended from the deceased Native Americans so they can inspect the burial site and make recommendations for treatment or disposal.

Local

City of Palo Alto 2030 Comprehensive Plan

The City's 2030 Comprehensive Plan Land use and Community Design Element includes the following goals and policies related to historic and archeological resources that apply to the project:

- **Goal L-7:** Conservation and preservation of Palo Alto's historic buildings, sites and districts.
 - **Policy L-7.1:** Encourage public and private upkeep and preservation of resources that have historic merit, including residences listed in the City's Historic Resource Inventory, the California Register of Historical Resources, or the National Register of Historic Places.
 - **Policy L-7.2:** If a proposed project would substantially affect the exterior of a potential historic resource that has not been evaluated for inclusion into the City's Historic Resources Inventory, City staff shall consider whether it is eligible for inclusion in State or federal registers prior to the issuance of a demolition or alterations permit. Minor exterior improvements that do not affect the architectural integrity of potentially historic buildings shall be exempt from consideration. Examples of minor improvements may include repair or replacement of features in kind, or other changes that do not alter character-defining features of the building.
 - **Policy L-7.15:** Protect Palo Alto's archaeological resources, including natural land formations, sacred sites, the historical landscape, historic habitats and remains of settlements here before the founding of Palo Alto in the 19th century.
 - **Policy L-7.16:** Continue to consult with tribes as required by California Government Code Section 65352.3. In doing so, use appropriate procedures to accommodate tribal concerns when a tribe has a religious prohibition against revealing precise information about the location or previous practice at a particular sacred site.
 - **Policy L-7.17:** Assess the need for archaeological surveys and mitigation plans on a project-by-project basis, consistent with the California Environmental Quality Act and the National Historic Preservation Act.
 - **Policy L-7.18:** Require project proponents to meet State codes and regulations regarding the identification and protection of archaeological and paleontological deposits, and unique geologic features.

Palo Alto Municipal Code

According to Section 16.49.040 of the City of Palo Alto Historic Preservation Ordinance, a building, structure, object or site may be designated as a Historic Landmark if it possesses sufficient character-defining features, integrity of location, design, setting, materials, workmanship, feeling or association and meets at least of the following criteria:

1. The structure or site is identified with the lives of historic people or with important events in the city, state, or nation;
2. The structure or site is particularly representative of an architectural style or way of life important to the city, state, or nation;

3. The structure or site is an example of a type of building which was once common, but is now rare;
4. The structure or site is connected with a business or use which was once common, but is now rare;
5. The architect or building was important; or
6. The structure of site contains elements demonstrating outstanding attention to architectural design, detail, materials, or craftsmanship.

In addition to the criteria for designation, the definitions of historic categories and districts, as defined in the ordinance, shall be used for designation of properties to the inventory. The definitions are as follows:

- Category 1: An “Exceptional Building” of pre-eminent national or State importance. These buildings are meritorious works of the best architects, outstanding examples of a specific architectural style, or illustrate stylistic development of architecture in the United States. These buildings have had either no exterior modifications or such minor ones that the overall appearance of the building is in its original character.
- Category 2: A “Major Building” of regional importance. These buildings are meritorious works of the best architects, outstanding examples of an architectural style, or illustrate stylistic development of architecture in the State or region. A major building may have some exterior modifications, but the original character is retained.
- Category 3 or 4: A “Contributing Building” which is a good local example of an architectural style and relates to the character of a neighborhood grouping in scale, materials, proportion, or other factors. A contributing building may have had extensive or permanent changes made to the original design, such as inappropriate additions, extensive removal of architectural details, or wooden facades resurfaced in asbestos or stucco.

b. Cultural and Tribal Resources Setting

Natural Environment

The Bay Area and the surrounding region contain an abundance of natural resources, which prehistoric and early historic-period people utilized. Deer, elk, and waterfowl were plentiful in prehistory, as were marine and Bay resources such as seals, otters, abalone, mussels, oysters, clams and numerous fish species. Franciscan chert was an easily obtainable local raw material used for stone tools. Obsidian, another material used in tool making, could be obtained from the Anadel and Napa Glass Mountain quarries north of the Bay Area (City of Palo Alto 2016).

Archaeological Setting

The area that now contains the city of Palo Alto is known to have been inhabited by indigenous peoples for thousands of years prior to the arrival of Europeans. Archaeological excavation of the banks of San Francisquito Creek indicated that the area around Palo Alto was inhabited as far back as 2400 BC, during the late Archaic period. Additionally, carbon dating of a human skull belonging to Stanford Man I places humans in the area approximately 3,130 years ago. During the late Archaic period, prehistoric peoples lived widely throughout the region in small groups.

With more than 50 archaeological surveys conducted in Palo Alto, several prehistoric sites with shell midden components, including human burials, have been found, particularly in the flatland areas of

the city. There is still the potential that additional undiscovered archeological resources exist in the city. Areas categorized as extremely sensitive can generally be found in riparian areas surrounding Adobe and San Francisquito Creeks as well scattered urbanized sites distributed throughout the city. Site-specific mapping of known resources is prohibited by CEQA Guidelines §15120(d). The project site is located in the traditional tribal territory of the Ohlone peoples, who originated in present day eastern Contra Costa County, settled in the Palo Alto region around 3,500 years ago replacing the groups that had settled there earlier. The Ohlone peoples are a group defined by commonalities in their language, though the group is made up of several autonomous tribes that spoke eight distinct but related languages. Together with the related Miwok, a Native American group that ranged from present day Oregon to California, the Ohlone languages comprise the Utian language family, which is in turn part of a larger group of related languages among tribes originally from present day California and Oregon. Ohlone subsistence included a heavy reliance on plants, seeds, berries, roots, birds, and seafood, including shellfish. They developed bows and arrows, tobacco pipes, intensive acorn use, and increasingly complicated exchange systems. The territory of the Ohlone people ranges from the San Francisco Bay Area, south to Carmel and approximately 60 miles inland. This territory includes miles of coastline and several inland valleys. As noted above, the Ohlone people were organized politically by tribes, each of which had a designated territory. Tribes consisted of villages and camps, designated by features of the environment. The title of chief of the tribe was inherited patrilineally and could be held by both men and women. As the chief, responsibilities included directing hunting, fishing, and gathering expeditions, as well as hosting visitors and directing ceremonial activities (City of Palo Alto 2016).

Historical Setting

Post-European contact history for California is generally divided into three periods: the Spanish Period (1769–1822), the Mexican Period (1822–1848), and the American Period (1848–present). The Spanish Period brought the establishment of the California mission system, while the Mexican Period is largely known for the division of the land of California into private land holdings. Following the Mexican-American war the United States purchased California from Mexico and the population of the state subsequently increased, particularly during the Gold Rush.

European contact in the Palo Alto region began in 1769 with the visit of Don Gaspar de Portola to San Francisco Bay. His group camped at a location they called El Palo Alto, for a tall tree located in present day Palo Alto. In 1776, Juan Bautista DeAnza established Mission Dolores and the Presidio of San Francisco, and soon after this, the colonization of the San Francisco Peninsula by the Spanish began. As elsewhere, induction into the missions had a devastating effect on the local inhabitants, requiring them to live and work at the mission and abandon their former lifeways. By 1821, four presidios and 21 missions were established in Spanish California. The trail between missions became known as El Camino Real, which today spans through the present-day City of Palo Alto.

Spanish architectural styles, which arrived in California via Mexico, can be seen in the city of Palo Alto today, including the Spanish Colonial and Early California styles present in the Ramona Street Architectural District. Later, James Marshall's discovery of gold on the American River would lead to the gold rush. The lure of wealth from gold prospecting brought the parents of Palo Alto's founder, Timothy Hopkins, to Northern California (City of Palo Alto 2016).

The earliest township within the current boundaries of Palo Alto was called Mayfield. In 1882, railroad magnate and California politician, Leland Stanford, purchased 1,000 acres adjacent to Mayfield to add to his large estate in northwestern Santa Clara County. Stanford decided in 1894 to

establish the town of Palo Alto with help from his friend Timothy Hopkins of the Southern Pacific Railroad.

Throughout Palo Alto's early decades of growth as a town, the lands surrounding the project site remained a largely agricultural stretch between the city and the small settlement growing around the transportation stop at Mountain View to the southeast. Until the early 1950s, the area surrounding the location of the project site was dominated by large agricultural tracts with low-density settlement.

Development of the site began on April 24, 1918, when Thomas Foon Chew, a Chinese immigrant and owner of the Bayside Canning Company in Alviso, purchased four acres of land in Mayfield for \$200,000 and announced that he planned to build a second canning plant on the site. According to articles published in the local Daily Palo Alto newspaper, progress on the construction of the cannery was well underway in June that same year, and operations began at the cannery in July. Just one year later, Chew was already expanding his operations. Before the start of the canning season that year, nineteen houses were constructed for the Bayside Canning Company's workers on land to the south of the cannery, and a large new warehouse was added. The workers' houses, four larger dwellings, and a rooming house are shown as part of the complex of "employee cabins" located at the cannery site in the 1925 Sanborn fire insurance map of Mayfield. At the time, the cannery consisted of a large cooking and preparing facility with a two-story staging section and a warehouse connected to its north side, both with concrete floors and roofs supported by rows of wood posts. The buildings were sited alongside a spur track of the Southern Pacific Railroad's Los Gatos branch at the intersection of Third Street (now Park Boulevard) and Portage Avenue. To the south of the preparing facility, there was a loading platform and small syrup room. Four small outbuildings, including a restroom and office, were located to the southeast of these buildings. A scale was situated along Portage Avenue, and an in-ground oil tank was located alongside the railroad spur. A separate one-story dwelling and small outbuilding were located to the north of the cannery, facing Third Street.

Over the next several decades, the canning complex continued to expand. Records of historic building permits at the Palo Alto Historical Association reveal that in 1929, the Sutter Packing Company, which by then operated the cannery although it continued to be owned by Thomas Foon Chew, had received a permit to build another warehouse on the site at 310 Portage Avenue. A permit to build yet another cannery building, this time at 300 Portage Avenue, was issued in 1937.

Just three years later in 1940, the Sutter Packing Company received another permit to spend \$13,000 on a warehouse expansion at 380 Portage Avenue; however, newspaper articles show that construction work at the site was much more extensive. In June 1940, The Palo Alto Times reported that the company was planning to spend \$175,000 on improvements to the canning plant that would result in 50,000 square feet of additional storage and increase the plant's capacity 25 to 30 percent.

By 1941, the Sutter Packing Company's cannery filled the entire block stretching from Third Street on the north to First Street (now Ash Street) on the south and from the curving banks of Matadero Creek on the east to the Southern Pacific Railroad spur tracks on the west. Additions and new canning facilities had been constructed one next to the other with no space between them so that, although it is possible to discern multiple distinct rooflines and facilities in the aerial photograph, the cannery largely appeared as one solid mass. The site also consisted of a number of smaller, detached buildings. Three long narrow buildings were sited along Matadero Creek. One, oriented parallel to the main cannery complex, was attached by what appears to be an enclosed bridge. A fourth building with two attached gabled roofs, identified as a warehouse in the 1945 Sanborn map

of the site, was located to the south of these narrow buildings. Bordering it to the south, along First Street, was a one-story office building. On the northwest side of the main cannery complex, two additional buildings, a machine shop and boiler house, sat alongside the spur tracks. A single row of employee cabins remained intact to the south of the cannery.

The cannery continued to grow as production ramped up in response to World War II. In 1942, Sutter Packing Company was issued a permit to spend \$39,500 on another warehouse at 300 Portage Avenue. This building is likely the southernmost portion of the existing building that extends across Ash Street over the site of the last row of employee cabins; it does not appear in the 1941 aerial but shares the same reinforced concrete construction, massing, and arched wood truss roof structure as the warehouse on the north side of Ash Street.

In spite of decades of nearly constant activity and expansion of the operations at the cannery site, Sutter Packing Company went into decline after World War II and finally closed its doors in 1949. A portion the larger cannery complex on Lambert Avenue was initially leased to Coca-Cola to function as a bottling plant, but records do not confirm Coca-Cola's presence at the subject property. Research did not uncover any additional information about the use or changes to the site until the 1960s, by which time the former cannery had been subdivided into several smaller spaces, which were leased to a variety of tenants. In 1964, the Southern Pacific Railroad removed its spur tracks from the site. The same year, a portion of the building was occupied by Maximart, a large commercial store that sold home goods and appliances. By 1978, Maximart had moved out, and the site was under the ownership of WSP Properties. In the following years, several retail and commercial tenants have occupied the space (Page & Turnbull 2019, Appendix C).

Existing Conditions

The project site encompasses approximately 14.27 acres across four parcels. The project site includes all of Assessor's Parcel Numbers (APNs) 132-38-071, 132-32-036, 132-32-042, and 132-32-043 in the City of Palo Alto. The project site is roughly bounded by Park Boulevard to the north, Christopher Circle and Ash Street to the south, residences to the west, and commercial uses to the east. The site is currently developed with a two-story warehouse building (340 Portage Avenue), a one-story office building (3201-3225 Ash Street), a one-story commercial building (3040 Park Boulevard), two one-story office buildings (3250 Park Boulevard and 278 Lambert Avenue), and the concrete-lined Matadero Creek. The entire ground surface within the project area is covered by buildings and paved surfaces such as parking lots and sidewalks, and thus soils within the project site have been previously graded and disturbed.

A previous Historic Resource Evaluation (HRE) was prepared by Page & Turnbull in 2019 on behalf of the City, which concluded the former Bayside Canning Company canning/warehouse building (340 Portage Avenue)¹ is eligible for listing in the CRHR at the local level under Criterion 1 (Events) for its association with the history of the canning industry in Santa Clara County. That HRE also outlined the resource's character-defining features, or those physical features which collectively convey the significance of the property, including the following: form and massing; varied roof forms and structures; exterior wall materials; exterior cannery features; fenestration; landscape features; and interior features.

¹ There are 15 addresses associated with the property. The proposed project, including the area of proposed development uses the address 200 Portage Avenue. The historical resources evaluation refers to the site, including the former canning/warehouse building and the associated office building as 340 Portage Avenue. Herein and for consistency, the historic canning/warehouse building will be referred to 340 Portage Avenue.

The results of the historical resource evaluation prepared by Rincon Consultants in 2022 found that the building at 3040 Park Boulevard is not eligible for listing in the NRHP, CRHR, or as City of Palo Alto Historic Structure; it therefore does not qualify as a historical resource under CEQA. The properties at 3250 Park Boulevard and 278 Lambert Avenue, as well as the concrete-lined Matadero Creek, are less than 45-years of age and do not meet the age threshold for evaluation to the NRHP or CRHR and are not historical resources under CEQA. The full study is attached in Appendix C.

The cultural resources records search, NAHC Sacred Lands File (SLF) search, and Native American Scoping conducted for the project did not result in the identification of archaeological resources at or adjacent to the project site. The archaeological study did not identify any archaeological resources in the project site. Ground visibility was poor (0-35%) with 0% of natural ground exposure due to the site being completely paved and developed with commercial buildings and a concrete-lined channel Matadero Creek. No cultural resources were observed within areas of exposed ground disturbance. However, five archaeological resources are located within a 0.5-mile radius and generally consist of dark grey/black midden soil with shell, burnt rocks, and lithic materials present. The SLF results were negative, and the closest water source Matadero creek is concrete lined. The background research and field survey indicate that the project site is highly disturbed from previous agricultural activity and commercial and residential development. Site conditions indicate extensive development and does not appear to be sensitive for archaeological cultural resources.

4.2.2 Impact Analysis

a. Methodology and Significance Thresholds

The methodologies and significance thresholds employed for the cultural resources impact analyses are described below and in the *Regulatory Setting*, above.

In accordance with Appendix G of the *CEQA Guidelines*, an impact to Cultural Resources is considered significant if it can be demonstrably argued that the project 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; or
3. Disturb any human remains, including those interred outside of dedicated cemeteries.

The significance of an archaeological deposit and subsequently the significance of any impact are determined by the criteria established in the *CEQA Guidelines*, as provided in the *Regulatory Setting*.

If an archaeological cultural resource does not meet either the historical resource or the more specific “unique archaeological resource” definition, impacts do not need to be mitigated [13 PRC 15064.5 (e)].

Recent revisions to Appendix G of the *CEQA Guidelines* in accordance with AB 52 include thresholds for potential impacts to Tribal Cultural Resources. An impact to Tribal Cultural Resources from the proposed project would be significant if the project would:

1. Cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:

- a. Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k); or
- b. A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resource Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.

b. Project Impacts and Mitigation

Threshold 1: Would the project cause a substantial adverse change in the significance of a historical resource pursuant to §15064.5?

Impact CUL-1 THE PROPOSED PROJECT WOULD INVOLVE PARTIAL DEMOLITION OF THE BUILDING LOCATED AT 200 PORTAGE AVENUE, ALSO KNOWN AS 340 PORTAGE AVENUE, WHICH IS A HISTORICAL RESOURCE. DUE TO THE IRREVERSIBLE ALTERATION OF A HISTORICAL RESOURCE, THIS IMPACT WOULD BE SIGNIFICANT AND UNAVOIDABLE.

The project site is currently developed with a two-story warehouse building (200 Portage Avenue), a one-story office building (3201-3225 Ash Street), a one-story commercial building (3040 Park Boulevard), two one-story office buildings (3250 Park Boulevard and 278 Lambert Avenue), and the concrete-lined Matadero Creek. The properties at 3250 Park Boulevard and 278 Lambert Avenue, as well as the concrete-lined Matadero Creek, are not planned for demolition under the proposed project and are less than 45-years of age and are not historical resources under CEQA. In addition, no changes to the building or use are proposed to the one-story office building at 3201-3225 Ash Street.

The proposed project would involve demolition of a portion of the building at 200 Portage Avenue and the building at 3040 Park Boulevard. A historical resource evaluation prepared for the building at 3040 Park Boulevard (included in Appendix C) found that it is not eligible for listing in the NRHP, CRHR, or as City of Palo Alto Historic Structure. Therefore, demolition of this building would not result in an impact to a historical resource.

The building at 200 Portage Avenue, also known as 340 Portage Avenue, is eligible for listing in the CRHR under Criterion 1 (Events) at the local level. The significance of the building is related to its association with Palo Alto's fruit and vegetable canning and is a rare surviving example of Palo Alto and Santa Clara County's agricultural past. It therefore is a historical resource pursuant to Section 15064.5(a) of the CEQA Guidelines.

According to CEQA (Section 21084.1), a project that may cause a substantial adverse change in the significance of a historical resource is a project that may have a significant effect on the environment. Substantial adverse change is defined as demolition, destruction, relocation, or alteration activities that would impair the significance of the historical resource. The most substantial impact would occur through the demolition of 89,639 square-feet of the eastern portion of the building, constituting a loss of approximately 40 percent of the building. The proposed demolition would result in the removal of distinctive materials like the removal of canning platforms and cooling porches, the loss of several character-defining features, such as the form and massing and varied roof forms and structures and would, therefore constitute material impairment to the historical resource. The proposed demolition would significantly diminish those characteristics of

the historical resource that convey its historical significance and justify its eligibility for listing in the CRHR.

Additionally, the proposed treatment of the building would not be consistent with the Secretary's Standards, which recommends avoiding loss of historic materials through demolition and removal and encourages the retention of distinctive materials that characterize a property. The proposed project would result in a loss of several of the property's character-defining features, and proposed alterations to the building, including the introduction of new window and door openings, the addition of new canopies are not compatible with the building's historic character and would obscure historic materials that characterize the property.

Because the proposed project would result in a substantial adverse change to a historical resource, this impact would be significant and unavoidable.

Mitigation Measures

The following mitigation measures are required.

CR-1 Building Recordation

Impacts resulting from the partial demolition of the warehouse building at 200 Portage Avenue, also known as 340 Portage Avenue, shall be minimized through archival documentation of as-built and as-found condition. Prior to issuance of demolition permits, the lead agency shall ensure that documentation of the buildings and structures proposed for demolition is completed that follows the general guidelines of Historic American Building Survey (HABS)- Level III documentation. The documentation shall include high resolution digital photographic recordation, a historic narrative report, and compilation of historic research. The documentation shall be completed by a qualified architectural historian or historian who meets the Secretary of the Interior's Professional Qualification Standards for History and/or Architectural History. The original archival-quality documentation shall be offered as donated material to repositories that will make it available for current and future generations. Archival copies of the documentation also would be submitted to the City of Palo Alto and the Palo Alto Public Library, where it would be available to local researchers. Completion of this mitigation measure shall be monitored and enforced by the City of Palo Alto.

CR-2 Interpretive Display

Impacts resulting from the partial demolition of the warehouse building at 200 Portage Avenue, also known as 340 Portage Avenue, shall be minimized through the installation of a high-quality, on-site interpretive display in a publicly-accessible location, preferably near or within a portion of the retained warehouse building at 200 Portage Avenue at the applicant's expense. The display could focus on the property's history, particularly the agricultural past of Santa Clara County and the canning operations of Bayside Canning Company. The interpretive display should be prepared by a professional exhibit designer and historian; historic information contained in Page & Turnbull's HRE can serve as the basis for the interpretive display. The goal of the interpretive display would be to educate the public about the property's historic themes and associations within broader cultural contexts. The content of the display shall be approved by the Director of Planning & Development Services or designee.

Significance after Mitigation

Implementation of Mitigation Measure CR-1-and CR-2 would reduce significant direct impacts to the historical resource to the extent feasible. Demolition by its nature is complete and total material impairment of the historical resource, and no feasible mitigation measures are available to mitigate the demolition of the CEQA historical resources to a less-than-significant level. As a result, demolition of an individually eligible resource under the proposed project would be a significant and unavoidable adverse impact after implementation of required mitigation.

Threshold 2: Would the project cause a substantial adverse change in the significance of an archaeological resource pursuant to CEQA Guidelines §15064.5?

Impact CUL-2 CONSTRUCTION OF THE PROPOSED PROJECT WOULD INVOLVE GROUND-DISTURBING ACTIVITIES SUCH AS GRADING AND SURFACE EXCAVATION, WHICH HAVE THE POTENTIAL TO UNEARTH OR ADVERSELY IMPACT PREVIOUSLY UNIDENTIFIED ARCHAEOLOGICAL RESOURCES. THIS IMPACT WOULD BE LESS THAN SIGNIFICANT WITH MITIGATION INCORPORATED.

The project site is within an urbanized area and has been previously graded and paved. A site visit did not identify any archaeological resources with the project site and ground visibility was poor due to the site being completely paved and developed with commercial buildings. A California Historical Resources Information System (CHRIS) records search of the project site and a 0.5-mile radius was conducted and thirteen (13) cultural resources studies were identified. Of these studies, four include a portion of the project site or area directly adjacent to the project site. None of the reports located new or previously unrecorded cultural resources. The CHRIS search identified eight cultural resources with 0.5 miles of the project site. No resources were recorded within or adjacent to the project site. Five archaeological resources are located within the 0.5-mile radius of the project site and generally consist of dark grey/black midden soil with shell, burnt rocks, and lithic materials present. The background research and field survey indicate that the project site is highly disturbed from previous agricultural activity and commercial and residential development. Because the project site has been developed previously, surficial archaeological resources and human remains that may have been present at one time have likely been disturbed and the likelihood of encountering intact resources is low. The full archaeological study is provided in Appendix C of this EIR.

Although project implementation is not expected to uncover archaeological resources or human remains, the possibility for unexpected disturbance of such resources exists and therefore this impact would be potentially significant.

Mitigation Measures

The following mitigation measures are required.

CR-3 Worker Environmental Awareness Program

Prior to commencement of any project-related construction activities, a qualified Archeologist shall provide a worker environmental awareness training to all site personnel. The training shall discuss the appearance of resources that may be encountered during construction as well as the procedures and notification process in the event of discovery.

CR-4 Unanticipated Discovery of Archaeological Resources

In the event that archaeological resources are unearthed during project construction, all earth-disturbing work near the find must be temporarily suspended or redirected until an archaeologist meeting the Secretary of the Interior's Professional Qualification Standards for archaeology (NPS 1983) has evaluated the nature and significance of the find. If the discovery proves to be significant under CEQA (Section 15064.5f; PRC 21082), additional work, such as preservation in place or archaeological data recovery, shall occur as recommended by the archeologist in coordination with City staff and if applicable, descendants and/or stakeholder groups. Once the resource has been properly treated or protected, work in the area may resume. A Native American representative shall be retained to monitor mitigation work associated with Native American cultural material.

Significance after Mitigation

Implementation of Mitigation Measures CR-3 and CR-4 would reduce impacts to previously unidentified archaeological resources to a less than significant level by requiring education for on-site workers and steps to be taken in the event of an unanticipated discovery.

Threshold 3: Would the project disturb any human remains, including those interred outside of dedicated cemeteries?

Impact CUL-3 GROUND-DISTURBING ACTIVITIES ASSOCIATED WITH DEVELOPMENT OF THE PROPOSED PROJECT COULD RESULT IN DAMAGE TO OR DESTRUCTION OF HUMAN BURIALS. THIS IMPACT WOULD BE LESS THAN SIGNIFICANT THROUGH ADHERENCE TO STATE HEALTH AND SAFETY CODE SECTION 7050.5 AND PUBLIC RESOURCES CODE SECTION 5097.98.

No human remains are known to be present within the project site. However, the discovery of human remains is always a possibility during ground disturbing activities. If human remains are found, the State of California Health and Safety Code Section 7050.5 states that no further disturbance shall occur until the County Coroner has made a determination of origin and disposition pursuant to Public Resources Code Section 5097.98. In the event of an unanticipated discovery of human remains, the County Coroner must be notified immediately. If the human remains are determined to be of Native American origin, the Coroner will notify the Native American Heritage Commission, which will determine and notify a most likely descendant (MLD). The MLD has 48 hours from being granted site access to make recommendations for the disposition of the remains. If the MLD does not make recommendations within 48 hours, the landowner shall reinter the remains in an area of the property secure from subsequent disturbance. With adherence to existing regulations, impacts to human remains would be less than significant.

Mitigation Measures

No mitigation measures are required.

Threshold 4:	Would the project cause a substantial adverse change in the significance of a Tribal cultural resource as defined in Public Resources Code Section 21074 that is listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code Section 5020.1(k)?
Threshold 5:	Would the project cause a substantial adverse change in the significance of a Tribal cultural resource as defined in Public Resources Code Section 21074 that is 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?

Impact CUL-4 GRADING AND EXCAVATION REQUIRED FOR THE PROPOSED PROJECT WOULD HAVE THE POTENTIAL TO ADVERSELY IMPACT TRIBAL CULTURAL RESOURCES. IMPACTS WOULD BE LESS THAN SIGNIFICANT WITH IMPLEMENTATION OF MITIGATION.

There are no known Tribal Cultural Resources within the project site. As discussed above, the site conditions indicate extensive development and the site is not identified as sensitive for archaeological resources.

In May 2016 the City of Palo received a single request from a tribe to be contacted in accordance with AB 52. However, through subsequent correspondence with the tribe, it was concluded that the tribe had contacted the City of Palo Alto in error and did not wish to be contacted regarding future projects within the City's jurisdiction. The tribe, the Torres Martinez Desert Cahuilla Indians, is not traditionally or culturally affiliated with the geographic area within the City of Palo Alto. In June 2021 Tamien Nation contacted the City of Palo Alto and requested to be contacted in accordance with AB 52 for projects within the City's jurisdiction. Tamien Nation is culturally affiliated with the City's geographic area. On March 9, 2021, the City sent letters to tribes listed by the Native American Heritage Commission (NAHC) as having a potential affiliation to the project area, including Tamien Nation, who had specifically requested to be contacted.

The City has not received responses from a request for consultation to date. The list from the NAHC and letters that the City sent to the tribes is included in Appendix C. Though there are no known tribal cultural resources present within the project site, it is possible that ground disturbance during project construction could encounter unknown tribal cultural resources or known cultural resources that may be identified as tribal cultural resources. Therefore, the project has the potential to significantly impact tribal cultural resources through ground disturbance and looting or vandalism of encountered resources.

Mitigation Measure

The following mitigation measure is required.

CR-5 Suspension of Work Around Tribal Cultural Resources.

In the event that cultural resources of Native American origin are identified during implementation of the proposed project, all earth-disturbing work within 50 feet of the find shall be temporarily suspended or redirected until an archaeologist and culturally affiliated Native American representative have evaluated the nature and significance of the find. If the City, in consultation with local Native Americans, determines that the resource is a tribal cultural resource and thus significant under CEQA, a mitigation plan shall be prepared and implemented in accordance with

state guidelines and in consultation with local Native American group(s). The plan shall include avoidance of the resource or, if avoidance of the resource is infeasible, the plan shall outline the appropriate treatment of the resource in coordination with the culturally affiliated local Native American tribal representative and, if applicable, a qualified archaeologist. Examples of appropriate mitigation for tribal cultural resources include, but are not limited to, protecting the cultural character and integrity of the resource, protecting traditional use of the resource, protecting the confidentiality of the resource, or heritage recovery.

Significance After Mitigation

Implementation of Mitigation Measure CR-5 would ensure that any unanticipated discoveries of tribal cultural resources are avoided or, where avoidance is infeasible, mitigated to a less than significant level. Therefore, with implementation of Mitigation Measure CR-5 impacts to tribal cultural resources would be reduced to a less than significant level.

c. Cumulative Impacts

In terms of historical resources, the analysis of cumulative impacts relates to whether impacts of the project and future related projects, considered together, might substantially impact and/or diminish the number of similar historical resources, in terms of context or property type. Although required implementation of the Mitigation Measure CR-1 through CR-5, as identified in this section, would reduce impacts to the extent feasible, impacts to historical resources would remain significant and unavoidable because the project involves demolition of an eligible historical resource. However, these impacts are site-specific and not cumulative in nature. As such, the proposed project would not contribute to cumulative impacts on cultural resources outside the project site. In addition, individual development proposals are reviewed separately by the appropriate jurisdiction and undergo environmental review when it is determined that the potential for significant impacts exist. In the event that future cumulative projects would result in impacts to known or unknown cultural resources, impacts to such resources would be addressed on a case-by-case basis. Furthermore, the project area is not within a historic district. Therefore, individual projects that involve the demolition of historic structures would not affect a historic district on the whole. Overall, although the project involves impacts to individual historical resources, there would be no cumulative impact to similar historical resources in the region and the project would have a less than significant cumulative impact.

This page intentionally left blank.

4.3 Energy

This section analyzes the energy impacts of development and operation of the project.

4.3.1 Setting

Energy relates directly to environmental quality. Energy use can adversely affect air quality and can generate greenhouse gas (GHG) emissions that contribute to climate change. Fossil fuels are burned to power vehicles, to generate electricity for powering residences and commercial/industrial buildings, and to heat and cool building spaces. Transportation energy use is related to the fuel efficiency of cars, trucks, and public transportation; choice of different travel modes such as auto, carpool, and public transit; and miles traveled by these modes. Construction and routine operation and maintenance of transportation infrastructure also consume energy primarily in the form of fuel.

a. Energy Production

As a state, California is one of the lowest per capita energy users in the United States, ranked 50th in the nation, due to its energy efficiency programs and mild climate (United States Energy Information Administration 2021). Electricity and natural gas are primarily consumed by the built environment for lighting, appliances, heating and cooling systems, fireplaces, and other uses such as industrial processes in addition to being consumed by alternative fuel vehicles. In 2020, California's total generation (in-state generation plus net electricity imports) totaled 272,576 gigawatt-hours (GWH). Most of California's electricity is generated in state with approximately 30 percent imported from the Northwest and Southwest in 2020; however, the state relies on out-of-state natural gas imports for nearly 90 percent of its supply (California Energy Commission [CEC] 2021a and 2021b). Primary fuel sources for the State's electricity generation in 2020 included non-carbon dioxide emitting sources such as nuclear, large hydroelectric, and renewables, which accounted for 51 percent of its generation. In addition, approximately 33 percent of California's electricity supply in 2020 came from renewable energy sources, such as wind, solar photovoltaic, geothermal, and biomass (CEC 2021a).

Natural gas continues to play an important and varied role in California. The State's net natural gas production for 2019 was 220.8 trillion Btu (USEIA 2021a). Nearly 45 percent of the natural gas burned in California was used for electricity generation, and much of the remainder consumed in the residential (21 percent), industrial (25 percent), and commercial (9 percent) sectors (CEC 2021b).

California is one of the top producers of petroleum in the nation, with drilling operations occurring throughout the state, but primarily concentrated in Kern and Los Angeles counties. A network of crude oil pipelines connects production areas to oil refineries in the Los Angeles area, the San Francisco Bay area, and the Central Valley. California oil refineries also process Alaskan and foreign crude oil received in ports in Los Angeles, Long Beach, and the San Francisco Bay area. Crude oil production in California and Alaska is in decline, and California refineries have become increasingly dependent on foreign imports (USEIA 2021b). Crude oil was used as transportation fuel primarily, with a portion used in industrial processes.

California's 2021 Integrated Energy Policy Report

Every two years, the CEC prepares the Integrated Energy Policy Report (IEPR). The 2021 update to the IEPR includes four volumes and an appendix and provides information and policy

recommendations on providing a clean, reliable, and affordable energy system for residents in California. Volume one focuses on actions needed to reduce greenhouse gases and achieve decarbonization in buildings as well as the industrial and agricultural sectors. Volume two evaluates actions needed to increase the reliability and resiliency of California's energy system. Volume three analyzes the role of gas in California's energy system and the importance of achieving carbon neutrality by 2045. Volume four provides an outlook on California's energy demand, including a forecast to 2035 and examines long-term energy demand scenarios to 2050. The appendix assesses the benefits of California's Clean Transportation Program (CEC 2021c).

2020 California Gas Report

The 2020 California Gas Report presents a comprehensive outlook for natural gas requirements and supplies for California through the year 2035. The report is prepared in even-numbered years, followed by a supplemental report in odd-numbered years, in compliance with California Public Utilities Commission (CPUC) Decision D.95-01-039. The projections contained in the California Gas Report are for long-term planning and do not necessarily reflect the day-to-day operational plans of the utilities (California Gas and Electric Utilities [CGEU] 2020).

California natural gas demand, including volumes not served by utility systems, is expected to decrease at a rate of 1 percent per year from through 2035. The forecasted decline is due to a combination of moderate growth in the Natural Gas Vehicle market and across-the-board declines in all other market segments: residential, commercial, electric generation, and industrial markets (CGEU 2020).

Residential gas demand is expected to decrease at an annual average rate of 1.7 percent. Demand in the commercial markets is projected to decrease at an annual average rate of 1.5 percent each year, while demand in the industrial segment is expected to decrease at an annual average rate of 0.2 percent each year. Stricter codes and standards coupled with more aggressive energy efficiency programs and goals laid out in Senate Bill (SB) 350, discussed further under *Regulatory Setting*, are making a significant impact on the forecasted load for the residential, commercial, and industrial markets. Gas demand for electric power generation is expected to be moderated by CPUC mandated goals for electric energy efficiency programs and additional renewable power generation. The Average Year demand forecasts in the 2021 California Gas Report assumes that renewable power will meet 33 percent of the state's electric needs by 2020 and 60 percent by 2030 and beyond (CGEU 2020).

b. Energy Demand

Electricity

In 2020, California used 272,576 gigawatt-hours (GWh) of electricity, of which 33 percent were from renewable resources. In recent years, electricity demand has been flat or slightly declining as energy efficiency programs have resulted in end-use energy savings and as customers install behind-the-meter (BTM) residential solar photovoltaic (PV) systems that directly displaces utility-supplied generation. The strong growth in residential solar has had a measurable impact on utility served load and, consequently, on the total system electric generation summary (CEC 2021a).

City of Palo Alto

Palo Alto is the only city in California that owns and operates full-scale municipal utility services, including electric, fiber optics, natural gas, water and wastewater. The City of Palo Alto Utilities

Department (CPAU) supplies electricity to city residents, facilities, and businesses. In 2018, Senate Bill 100 accelerated the state’s Renewable Portfolio Standards Program, codified in the Public Utilities Act, by requiring electricity providers to increase procurement from eligible renewable energy and zero-carbon resources to 33 percent of total retail sales by 2020, 60 percent by 2030, and 100 percent by 2045. CPAU has contracted for the construction of 13 new renewable energy generation facilities in California: five landfill gas, six solar, and two wind. These facilities allow CPAU to meet over 50 percent of Palo Alto’s electricity demand with renewable energy sources. During a year of normal or high rainfall, CPAU’s long-term contracts for carbon free hydroelectric power also meet at least 50 percent of electricity demand. In addition, since 2013, Palo Alto has provided 100 percent carbon neutral electricity. Table 4.3-1 shows the electricity consumption by sector and total for the CPAU service area in 2020 (CPAU 2021a).

Table 4.3-1 CPAU Service Area Electricity Consumption

Agriculture and Water Pump	Commercial Building	Commercial Other	Industry	Mining and Construction	Residential	Streetlight	Total Usage
1.9 GWh	522.2 GWh	19.7 GWh	118.7 GWh	7.3 GWh	155.6 GWh	0 GWh	825.4 GWh

Source: CEC 2021d

Natural Gas

The City of Palo Alto consumed approximately 40 million U.S. Therms of natural gas in 2019¹, while Santa Clara County consumed approximately 419 million U.S. Therms (418.9 MMBtus) of natural gas in 2020 (CEC 2021e). In 2017, Palo Alto began offsetting the GHG emissions caused by natural gas use through the purchase of carbon offsets and became the first 100 percent carbon neutral utility in the world (CPAU 2021). The City adopted an All-Electric Mandate as part of the 2019 Energy Reach Code which went into effect on April 1, 2020. The All-Electric Mandate is applicable to new single-family and low-rise residential construction projects, with the exception of accessory dwelling units (ADU) (City of Palo Alto 2020).

Petroleum Energy

Petroleum fuels are primarily consumed by on-road and off-road equipment in addition to some industrial processes, with California being one of the top petroleum-producing states in the nation (CEC 2021f). Gasoline, which is used by light-duty cars, pickup trucks, and sport utility vehicles, is the most used transportation fuel in California with 12.6 billion gallons sold in 2020 (CEC 2021g). Diesel, which is used primarily by heavy duty-trucks, delivery vehicles, buses, trains, ships, boats and barges, farm equipment, and heavy-duty construction and military vehicles, is the second most used fuel in California with 1.7 billion gallons sold in 2021 (CEC 2021g).

Although the proposed project would only affect a small area in the City of Palo Alto, the smallest scale to which petroleum consumption information is available is at the county level. Santa Clara County fuel sales are used herein to provide a regional context for fuel consumption in Palo Alto and the surrounding area. In 2020 Santa Clara County consumed an estimated 511 million gallons of gasoline and 35 million gallons of diesel fuel (CEC 2021g).

¹ Only the City’s 2019 natural gas usage was available (CPAU 2021b).

Alternative Fuels

A variety of alternative fuels are used to reduce petroleum-based fuel demand. The use of these fuels is encouraged through various statewide regulations and plans, such as the Low Carbon Fuel Standard and Senate Bill 32. Conventional gasoline and diesel may be replaced, depending on the capability of the vehicle with transportation fuels including the following:

Hydrogen

Hydrogen is being explored for use in combustion engines and fuel cell electric vehicles. The interest in hydrogen as an alternative transportation fuel stems from its clean-burning qualities, its potential for domestic production, and the fuel cell vehicle's potential for high efficiency, which is two to three times more efficient than gasoline vehicles. Currently, 54 light-duty open retail hydrogen refueling stations are located in California; one station is located in Palo Alto, at 3601 El Camino Real (CEC 2022a).

Biodiesel

Biodiesel is a renewable alternative fuel that can be manufactured from vegetable oils, animal fats, or recycled restaurant greases. Biodiesel is biodegradable and cleaner-burning than petroleum-based diesel fuel. Biodiesel can run in any diesel engine generally without alterations; however, fueling stations have been slow to make it available. There are currently 13 biodiesel refueling stations in California, none of which is located in Palo Alto (U.S. Department of Energy [DOE] 2021).

Electric Vehicles

Electricity can be used to power electric and plug-in hybrid EVs directly from the power grid. Electricity used to power vehicles is generally provided by the electricity grid and stored in the vehicle's batteries. Fuel cells are being explored as a way to use electricity generated onboard the vehicle to power electric motors. There are 275 electrical charging stations in Palo Alto, located at various locations throughout the city (PlugShare 2021).

c. Regulatory Setting

Federal Regulations

Energy Independence and Security Act of 2007

The Energy Independence and Security Act, enacted by Congress in 2007, is designed to improve vehicle fuel economy and help reduce U.S. dependence on foreign oil. It expands the production of renewable fuels, reducing dependence on oil, and confronting global climate change. Specifically, it does the following:

- Increases the supply of alternative fuel sources by setting a mandatory Renewable Fuel Standard, requiring fuel producers to use at least 36 billion gallons of biofuel in 2022, which represents a nearly five-fold increase over current levels
- Reduces U.S. demand for oil by setting a national fuel economy standard of 35 miles per gallon by 2020 – an increase in fuel economy standards of 40 percent

Energy Policy and Conservation Act

Enacted in 1975, this legislation established fuel economy standards for new light-duty vehicles sold in the U.S. The law placed responsibility on the National Highway Traffic and Safety Administration, a part of the U.S. Department of Transportation, for establishing and regularly updating vehicle standards. The United States Environmental Protection Agency (USEPA) administers the Corporate Average Fuel Economy program, which determines vehicle manufacturers' compliance with existing fuel economy standards. Since the inception of the Corporate Average Fuel Economy program, the average fuel economy for new light-duty vehicles steadily increased from 13.1 miles per gallon for the 1975 model year to 30.7 miles per gallon for the 2014 model year and is proposed to increase to 54.5 by 2025. Light-duty vehicles include autos, pickups, vans, and sport-utility vehicles.

Energy Star Program

In 1992, the USEPA introduced Energy Star as a voluntary labeling program designed to identify and promote energy-efficient products to reduce GHG emissions. The program applies to major household appliances, lighting, computers, and building components such as windows, doors, roofs, and heating and cooling systems. Under this program, appliances that meet specification for maximum energy use established under the program are certified to display the Energy Star label. In 1996, the USEPA joined with the Energy Department to expand the program, which now also includes qualifying commercial and industrial buildings, and homes.

State

California Energy Plan

The CEC is responsible for preparing the California Energy Plan, which identifies emerging trends related to energy supply, demand, conservation, public health and safety, and the maintenance of a healthy economy. The 2008 California Energy Plan calls for the state to assist in the transformation of the transportation system to improve air quality, reduce congestion, and increase the efficient use of fuel supplies with the least environmental and energy costs. To further this policy, the plan identifies a number of strategies, including assistance to public agencies and fleet operators in implementing incentive programs for zero-emission vehicles and addressing their infrastructure needs; and encouragement of urban designs that reduce vehicle miles traveled (VMT) and accommodate pedestrian and bicycle access.

Assembly Bill 2076: Reducing Dependence on Petroleum

Pursuant to Assembly Bill (AB) 2076 (Chapter 936, Statutes of 2000), the CEC and CARB prepared and adopted in 2003 a joint agency report, *Reducing California's Petroleum Dependence*. Included in this report are recommendations to increase the use of alternative fuels to 20 percent of on-road transportation fuel use by 2020 and 30 percent by 2030, significantly increase the efficiency of motor vehicles, and reduce per capita VMT. One of the performance-based goals of AB 2076 is to reduce petroleum demand to 15 percent below 2003 demand. Furthermore, in response to the CEC's 2003 and 2005 *Integrated Energy Policy Reports*, the Governor directed the CEC to take the lead in developing a long-term plan to increase alternative fuel use.

Integrated Energy Policy Report

SB 1389 (Chapter 568, Statutes of 2002) required the CEC to conduct assessments and forecasts of all aspects of energy industry supply, production, transportation, delivery and distribution, demand,

and prices. The CEC uses these assessments and forecasts to develop energy policies that conserve resources, protect the environment, ensure energy reliability, enhance the state's economy, and protect public health and safety. The most recent assessment, the *2018 Integrated Energy Policy Report*, contains two volumes. Volume I highlights the implementation of California's innovative policies and the role they have played in establishing a clean energy economy. Volume II, scheduled for completion in February 2019, will provide more detail on several key energy issues and will encompass new analyses, as well as significant opportunities for public participation.

Senate Bill 1078: California Renewables Portfolio Standard Program

SB 1078 (Chapter 516, Statutes of 2002), and as expanded under SB 2, established the RPS for electricity supply. The RPS requires that retail sellers of electricity, including investor-owned utilities and community choice aggregators, provide 20 percent of their supply from renewable sources by 2017. SB 2 expanded this law and required procurement from eligible renewable energy resources to 33 percent by 2020. In addition, electricity providers subject to the RPS must increase their renewable share by at least one percent each year.

Senate Bill X1-2: California Renewable Energy Portfolio Standard

In 2011, the Governor signed SB X1-2, which requires retail sellers of electricity, including investor-owned utilities and community choice aggregators, to provide at least 33 percent of their electricity supply from renewable sources by 2020. The CPUC and CEC jointly implement the statewide RPS program through rulemakings and monitoring the activities of electric energy utilities in the state.

Senate Bill 350: Clean Energy and Pollution Reduction Act of 2015

The Clean Energy and Pollution Reduction Act of 2015 (SB 350) requires the amount of electricity generated and sold to retail customers per year from eligible renewable energy resources to be increased to 50 percent by December 31, 2030. This act also requires doubling of the energy efficiency savings in electricity and natural gas for retail customers through energy efficiency and conservation by December 31, 2030.

Senate Bill 100: California Renewable Energy Portfolio Standard Program: Emissions of Greenhouse Gases

Approved by the Governor on September 10, 2018, SB 100 amends the State's RPS program from 33 percent of electricity generation from renewable sources by 2020 and 50 percent by 2030 to 33 percent by 2020, 50 percent by 2026, 60 percent by 2030, and 100 percent carbon-free electricity generation by 2045.

Assembly Bill (AB) 1493: Reduction of Greenhouse Gas Emissions

AB 1493 (Chapter 200, Statutes of 2002), known as the Pavley bill, amended Health and Safety Code sections 42823 and 43018.5 requiring CARB to develop and adopt regulations that achieve maximum feasible and cost-effective reduction of GHG emissions from passenger vehicles, light-duty trucks, and other vehicles used for noncommercial personal transportation in California.

Implementation of new regulations prescribed by AB 1493 required that the state of California apply for a waiver under the federal Clean Air Act. Although the USEPA initially denied the waiver in 2008, USEPA approved a waiver in June 2009, and in September 2009, CARB approved amendments to its initially adopted regulations to apply the Pavley standards that reduce GHG emissions to new

passenger vehicles in model years 2009 through 2016. According to CARB, implementation of the Pavley regulations is expected to reduce fuel consumption while also reducing GHG emissions.

Energy Action Plan

In the October 2005 *Energy Action Plan (EAP) II*, the CEC and CPUC updated their energy policy vision by adding some important dimensions to the policy areas included in the original EAP, such as the emerging importance of climate change, transportation-related energy issues and research and development activities. The CEC adopted an update to the EAP II in February 2008 that supplements the earlier EAPs and examines the State's ongoing actions in the context of global climate change.

Assembly Bill 1007: State Alternative Fuels Plan

AB 1007 (Chapter 371, Statutes of 2005) required the CEC to prepare a plan to increase the use of alternative fuels in California. The CEC prepared the State Alternative Fuels Plan in partnership with CARB and in consultation with other federal, State, and local agencies. The State Alternative Fuels Plan presents strategies and actions California must take to increase the use of alternative non-petroleum fuels in a manner that minimizes costs to California and maximizes the economic benefits of in-state production. The State Alternative Fuels Plan assessed various alternative fuels and developed fuel portfolios to meet California's goals to reduce petroleum consumption, increase alternative fuels use, reduce GHG emissions, and increase in-state production of biofuels without causing a significant degradation of public health and environmental quality.

Bioenergy Action Plan, Executive Order S-06-06

Executive Order (EO) S-06-06, April 25, 2006, establishes targets for the use and production of biofuels and biopower, and directs State agencies to work together to advance biomass programs in California while providing environmental protection and mitigation. The EO establishes the following target to increase the production and use of bioenergy, including ethanol and biodiesel fuels made from renewable resources: produce a minimum of 20 percent of its biofuels in California by 2010, 40 percent by 2020, and 75 percent by 2050. EO S-06-06 also calls for the State to meet a target for use of biomass electricity. The 2011 Bioenergy Action Plan identifies those barriers and recommends actions to address them so that the State can meet its clean energy, waste reduction, and climate protection goals. The 2012 Bioenergy Action Plan updates the 2011 Plan and provides a more detailed action plan to achieve the following goals:

- Increase environmentally and economically sustainable energy production from organic waste
- Encourage development of diverse bioenergy technologies that increase local electricity generation, combined heat and power facilities, renewable natural gas, and renewable liquid fuels for transportation and fuel cell applications
- Create jobs and stimulate economic development, especially in rural regions of the state
- Reduce fire danger, improve air and water quality, and reduce waste

Title 24, California Code of Regulations (CCR)

CCR, Title 24, Part 6, is California's Energy Efficiency Standards for Residential and Non-Residential Buildings. The CEC established Title 24 in 1978 in response to a legislative mandate to create uniform building codes to reduce California's energy consumption and provide energy efficiency standards for residential and nonresidential buildings. The standards are updated on an approximately three-year cycle to allow consideration and possible incorporation of new efficient

technologies and methods. In 2019, the CEC updated Title 24 standards with more stringent requirements effective January 1, 2020. All buildings for which an application for a building permit is submitted on or after January 1, 2020, must follow the 2019 standards. The 2022 Building Energy Efficiency Standards were adopted by the CEC on August 11, 2021, and approved by the California Building Standards Commission in December 2021. Building permits applications that are applied on or after January 1, 2023, will need to comply with the 2022 Energy Code (CEC 2022b).

Energy efficient buildings require less electricity; therefore, increased energy efficiency reduces fossil fuel consumption and decreases GHG emissions. The building efficiency standards are enforced through the local plan check and building permit process. Local government agencies may adopt and enforce additional energy standards for new buildings as reasonably necessary due to local climatologic, geologic, or topographic conditions, provided that these standards exceed those provided in Title 24.

PART 6 (BUILDING ENERGY EFFICIENCY STANDARDS)

Part 6 of Title 24 contains the 2016 Building Energy Efficiency Standards for new residential and CCR Title 24, Part 6 is the Building Energy Efficiency Standards or California Energy Code. This code, originally enacted in 1978, establishes energy-efficiency standards for residential and non-residential buildings in order to reduce California's energy demand. New construction and major renovations must demonstrate their compliance with the current Energy Code through submittal and approval of a Title 24 Compliance Report to the local building permit review authority and the California Energy Commission (CEC). The most current standards are the 2019 Title 24 standards (CEC 2018a). The 2019 Standards focus on four key areas: 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; 4) and nonresidential lighting requirements (CEC 2018a). Under the 2019 Standards, nonresidential buildings will be 30 percent more energy-efficient compared to the 2016 Standards (CEC 2018b).

California Green Building Standards Code (2019), CCR Title 24, Part 11

California's green building code, referred to as CALGreen, was developed to provide a consistent approach to green building within the State. CALGreen lays out the minimum requirements for newly constructed residential and nonresidential buildings to reduce GHG emissions through improved efficiency and process improvements. The requirements pertain to energy efficiency (in excess of the California Energy Code requirements), water conservation, material conservation, and internal air contaminants. It also includes voluntary tiers to further encourage building practices that improve public health, safety, and general welfare by promoting a more sustainable design.

Local

City of Palo Alto Comprehensive Plan 2030

The Natural Environment Element (Chapter Four in the General Plan) sets forth the goal to protect lives and property from risks associated with fire-related emergencies at the urban/wildland interface. The Environmental Resources subsection discusses energy conservation and renewable energy use Goals, Policies, and Actions, summarized below (Palo Alto 2017a):

Policy N-7.1 Meet customer electricity needs with least total cost resources after careful assessment of environmental cost and benefits.

- Policy N-7.2** Advance the development of a “smart” energy grid, a diverse energy resource portfolio, and technologically advanced public utilities as a key part of a smart and connected city.
- Policy N-7.3** Prioritize the identification and implementation of cost-effective, reliable and feasible energy efficiency and demand reduction opportunities.
- Policy N-7.4** Maximize the conservation and efficient use of energy in new and existing residences and other buildings in Palo Alto.
- Policy N-7.5** Encourage energy efficient lighting that protects dark skies and promotes energy conservation by minimizing light and flare from development while ensuring public health and safety.
- Policy N-7.6** Support the maximum economic use of solar electric (photovoltaic) and solar thermal energy, both as renewable supply resources for the Electric Utility Portfolio and as alternative forms of local power generation.
- Policy N-7.7** Explore a variety of cost-effective ways to reduce natural gas usage in existing and new buildings in Palo Alto in order to reduce associated greenhouse gas emissions.
- Action N-7.8** Support opportunities to maximize energy recovery from organic materials such as food scraps, yard trimmings and residual solids from sewage treatment.

Palo Alto Sustainability and Climate Change Plan

The City of Palo Alto launched its Sustainability and Climate Action Plan (S/CAP) in August 2014. The City launched an update to the S/CAP in 2020 to advance strategies to meet sustainability goals, including the goal of reducing GHG emissions 80 percent below 1990 levels by 2030. The S/CAP proposes goals and actions in seven areas: Energy, Mobility, Electric Vehicles, Water, Climate Adaptation and Sea Level Rise, Natural Environment, and Zero Waste (City of Palo Alto 2021).

Applicable energy reduction key actions in the S/CAP include:

- E1. Launch comprehensive residential program services and incentives to promote voluntary electrification of water heating, space heating, cooking, clothes drying, and other appliances that use natural gas, as well as single-family residence panel upgrades and EV charger installation (also see Key Action EV-2, Multi-family EV Charging program). Services may include technical assistance, vetted contractor lists, on-bill financing, and/or direct install services
- M1. Expand transport options available in Palo Alto
- M5. Expand bicycle and pedestrian infrastructure
- EV2. Enhance multi-family and workplace EV charging program as needed to create high levels of participation and expand it to include bike facility evaluation and alternative commute promotion. Evaluate financing and direct installation program features.
- W2. Increase implementation of green stormwater infrastructure on private property, municipal facilities and public rights-of-way to ensure water for urban canopy

Palo Alto Municipal Code

The City’s Green Building Ordinance and Energy Reach Ordinance exceed the mandatory efficiency standards set by the California Energy Code and to adopt the California Green Building Code Voluntary Tiers 1 and 2 as mandatory measures for new construction and addition-remodels over a certain size. The Palo Alto Green Building Ordinance requires applicants to incorporate sustainable design, construction, and operational requirements into most single-family residential, multi-family

residential, and non-residential projects. The ordinance results in reduced energy and water operational costs and improved environmental quality for building owners and occupants and encourages material conservation and resource efficiency (City of Palo Alto 2019).

The City's All-Electric Mandate was adopted as part of the 2019 Energy Reach Code and applies to new single-family and low-rise residential constructions, with the exception of ADUs.

4.3.2 Impact Analysis

a. Methodology and Thresholds of Significance

Significance Thresholds

The following thresholds of significance were developed in accordance with Appendix G of the CEQA Guidelines. Energy-related impacts would be significant if the proposed project would:

1. Result in a potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation
2. Conflict with or obstruct a State or local plan for renewable energy or energy efficiency

Methodology

The proposed project would involve the use of energy during the construction and operational phases of the project. The total consumption of energy during project construction and operation were estimated using the assumptions and factors from the CalEEMod Version 2020.4.0. The CalEEMod data is provided as Appendix B.

CONSTRUCTION ENERGY DEMAND

Construction of the proposed project would require temporary energy use in the form of fuel consumption primarily as a result of operation of construction equipment on-site and vehicle trips from the transport of construction workers to and from the project site and from the import and export of earth materials on- and off-site by heavy trucks. Energy consumption during construction, including gasoline and diesel fuel consumption from construction equipment, hauling trips, vendor trips and worker trips, was estimated using the assumptions and factors from CalEEMod.

The fuel demand rate for construction equipment was derived from the total hours of operation, the equipment's horsepower, the equipment's load factor, and the equipment's fuel usage per horsepower per hour of operation, which are all taken from CalEEMod outputs (see Appendix B), and from compression-ignition engine brake-specific fuel consumptions factors for engines between zero to 100 horsepower and greater than 100 horsepower (U.S. EPA 2018). The fuel demand rate for hauling and vendor trips (cut material imports) was derived from hauling and vendor trip number, hauling and vendor trip length, and hauling and vendor vehicle class from "Trips and VMT" Table contained in Section 3.0, Construction Detail, of the CalEEMod results (see Appendix B). The fuel economy for hauling and vendor trip vehicles was derived from the United States Department of Transportation (DOT). Fuel consumed for all hauling trucks was assumed to be diesel fuel. The fuel economy for worker trip vehicles was derived from DOT National Transportation Statistics and was assumed to be 24 mpg (DOT 2021). Fuel consumed for all worker trips was assumed to be gasoline fuel.

OPERATIONAL ENERGY DEMAND

The proposed project would require energy use in the form of electricity and gasoline consumption. Natural gas would not be used since the building would include an all-electric design pursuant to the City's All-Electric Mandate and the 2019 California State Energy Standards, Title 24 Part 6. The proposed project's estimated number of average daily trips was used to determine the energy consumption associated with fuel use from project operation. Electricity consumption was provided in the CalEEMod output (Annual Report, Appendix B). New development would be subject to CalGreen, which requires a 20 percent increase in indoor water use efficiency, as well as the 2019 Building Energy Efficiency Standards, which requires installation of solar PV systems on all low-rise residential structures up to three stories equal to the expected electricity usage. Thus, in order to account for compliance with CalGreen and the 2019 Building Energy Efficiency Standards, a 20 percent reduction in indoor water use was included in the water consumption calculations and 100 percent of electricity use generated using on-site renewable energy was included in the energy calculations for new development.

VMT was calculated in CalEEMod using the trip generation rates provided in the W-Trans Traffic Analysis located in Appendix H. The assumed vehicle fleet mix provided in CalEEMod were used to determine the total annual fuel consumption of the proposed project. Vehicle classes provided in CalEEMod do not correspond exactly to vehicle classes in DOT fuel consumption data, except for motorcycles. Therefore, it was assumed that passenger cars correspond to the light-duty, short-base vehicle class, light/medium trucks correspond to the light-duty long-base vehicle class, and heavy trucks/other correspond to the single unit, 2-axle 6-tire or more class.

b. Project Impacts and Mitigation Measures

Threshold 1: Would the project result in a potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?

Impact E-1 THE PROPOSED PROJECT WOULD CONSUME ELECTRICITY AND FUEL DURING CONSTRUCTION AND OPERATION. HOWEVER, THE PROJECT WOULD NOT PLACE SIGNIFICANT ADDITIONAL DEMAND ON CITY OF PALO ALTO UTILITIES AND WOULD BE REQUIRED TO COMPLY WITH APPLICABLE CONSERVATION STANDARDS. CONSTRUCTION AND OPERATION OF NEW DEVELOPMENT WOULD NOT RESULT IN WASTEFUL, INEFFICIENT, OR UNNECESSARY CONSUMPTION OF ENERGY. THIS IMPACT WOULD BE LESS THAN SIGNIFICANT.

Construction Energy Demand

During project construction, energy would be consumed in the form of petroleum-based fuels used to power off-road construction vehicles and equipment on the project site, construction worker travel to and from the project site, and vehicles used to deliver materials to the site. The manufacturing of construction materials would also involve energy use. Due to the large number of materials and manufacturers involved in the production of construction materials, including manufacturers in other states and countries, upstream energy use cannot be estimated reasonably or accurately. However, it is reasonable to assume that manufacturers of building materials such as concrete, steel, lumber, or other building materials would employ energy conservation practices in the interest of minimizing the cost of doing business. Consistent with CEQA Guidelines Section 15145, this analysis does not evaluate upstream energy use as it is too speculative.

The proposed project would require site preparation and grading; pavement and asphalt installation; building construction; architectural coating; and landscaping and hardscaping. Construction would be typical for the region and building type. The total consumption of gasoline and diesel fuel during project construction was estimated using the assumptions and factors from the CalEEMod run (Appendix B).

Table 4.3-2 presents the estimated construction phase fuel consumption. Construction equipment would consume approximately 43,381 gallons of diesel fuel; vendor/haul trips would consume approximately 3,739 gallons of diesel fuel; and worker trips would consume approximately 7,907 gallons of gasoline fuel over the project's estimated construction period. As mentioned under *Setting*, retail diesel sales in Santa Clara County totaled approximately 35 million gallons, while retail gasoline sales totaled approximately 511 million gallons in 2020 (CEC 2021g). Therefore, fuel consumption associated with project construction would account for approximately 0.1 percent of annual retail diesel sales and approximately 0.00005 percent of annual retail gasoline sales in Santa Clara County.

Table 4.3-2 Project Construction Fuel Consumption

Source	Fuel Consumption (gallons)	
	Gasoline	Diesel
Construction Equipment	–	43,381
Construction Vendor Haul Trips	–	3,739
Construction Worker Vehicle Trips	7,907	–
See Appendix D for energy calculation sheets.		

Similar to the manufacturers utilizing energy conservation methods to reduce costs, it is reasonable to assume contractors would avoid wasteful, inefficient, and unnecessary fuel consumption during construction to reduce construction costs. The project would comply with the CARB In-Use Off-Road Diesel-Fueled Fleets Regulation, which imposes limits on idling and restricts the use of older vehicles. This would reduce fuel consumption and lead to the use of fuel-efficient vehicles on the construction site. Construction equipment would be maintained to applicable standards, and construction activity and associated fuel consumption and energy use would be temporary and typical for construction sites. Further, construction activities would be typical for the region and building type. Therefore, the project would not involve the inefficient, wasteful, and unnecessary use of energy during construction, and the construction-phase impact related to energy consumption would be less than significant.

Operational Energy Demand

Project operation would increase area energy demand from greater electricity and diesel/gasoline consumption at the site. Natural gas would not be used since the building would include an all-electric design pursuant to the City's All-Electric Mandate. Electricity would be used for heating and cooling systems, lighting, appliances, and water use in new residential units. Diesel and gasoline consumption would be attributed to the new residents and truck deliveries.

The proposed townhome project incorporates the following design features and attributes promoting energy efficiency and sustainability:

- Compliance with the Palo Alto Green Building Ordinance and Energy Reach Ordinance to be 10 percent more energy efficient than the mandatory efficiency standards set by the CalGreen

requirements. The project would be all-electric and would include energy efficient appliances and lighting, as well as water efficient fixtures and irrigation. The project would also include solar PV systems pursuant to the 2019 Building Energy Efficiency Standards.

- Location within 0.5 to 0.6 mile walk to multiple bus stops serviced by the VTA and Dumbarton Express (Express 101, Express 102, Express 103, Bus Route 22, Bus Route 89, Bus Route 522, Rapid 522), as well as approximately 0.4 miles southeast of the California Avenue Train Station for convenient public transit access.
- Inclusion of bicycle parking and storage and EV chargers in each unit as well as one surface EV parking space and 10 surface bicycle parking spaces.

Table 4.3-3 summarizes the estimated operational energy consumption for the proposed townhome project. Electricity consumption was based on CalEEMod outputs from the air quality analysis, and energy intensity for electricity was increased to compensate for the elimination of natural gas usage. The outputs include Title 24 standards for the various land uses of the project and are baseline values determined through CEC surveys and studies. The estimated energy consumption from gasoline use was determined based on the average daily trips of the project and the estimated trip rates for the project (Appendix H). The estimated number of average daily trips associated with the proposed project was used to determine the energy consumption associated with fuel use from the operation of the project. The majority of the fuel consumption would be from motor vehicles traveling to and from the project site. The CalEEMod outputs indicate the project would result in 1,351,120 annual VMT (Appendix B). As shown in Table 4.3-3, project operation would require approximately 60,111 gallons of gasoline, 9,345 gallons of diesel fuel, and 807,012 kWh of electricity. Vehicle trips associated with future residents would represent the greatest operational use of energy associated with the project.

Table 4.3-3 Project Operational Energy Consumption

Source	Energy Consumption ¹	
Transportation Fuels		
Gasoline	60,111 gallons	6,599 MMBtu
Diesel	9,345 gallons	1,191 MMBtu
Electricity	807,012 kWh/year	2,754MMBtu

MMBtu = million metric British thermal units; kWh = kilowatt-hours

¹ Energy consumption is converted to MMBtu for each source

See Appendix D for energy calculation sheets and Appendix B for CalEEMod output results for electricity and natural gas usage.

ELECTRICITY

Operation of the proposed townhome project is estimated to consume approximately 807,012 kWh per year of electricity, or approximately 0.81 GWh per year. Although the proposed project would consume electricity, much of the electricity would be generated on-site through the use of solar PV systems. The project would not result in consumption of natural gas since development would be all-electric. Therefore, the project would not result in wasteful, inefficient, or unnecessary consumption of energy, and would not place a significant demand on CPAU's electricity supply.

Transportation Fuels

The project would consume approximately 60,111 gallons of gasoline and 9,345 gallons of diesel fuel per year. Santa Clara County consumed an estimated 511 million gallons of gasoline and 35

million gallons of diesel fuel in 2020, totaling 546 million gallons of fuel (CEC 2021g). The project would consume less than one percent of Santa Clara County's annual gasoline demand and of the County's annual diesel fuel demand. Therefore, the project would not place a significant demand on energy use from gasoline or diesel fuel.

In conclusion, energy consumption associated with project construction would be temporary and typical of similar projects, and would not result in wasteful, inefficient, or unnecessary energy use. The operation of the project would increase the use of electricity and gasoline fuel from existing conditions on-site. However, the increase would be typical of other residential projects and otherwise would not result in wasteful, inefficient, or unnecessary energy use, and energy providers would have sufficient supplies to serve the project. Therefore, impacts would be less than significant.

Based on the analysis above, project operation would not result in wasteful or unnecessary energy consumption or conflict with existing energy standards and regulations. Impacts would be less than significant.

Mitigation Measures

No mitigation measures would be required.

Threshold 2: Would the project conflict with or obstruct a state or local plan for renewable energy or energy efficiency?

Impact E-2 THE PROJECT WOULD NOT CONFLICT WITH OR OBSTRUCT STATE REGULATIONS OR THE CITY'S 2030 COMPREHENSIVE PLAN OR SUSTAINABILITY AND CLIMATE ACTION PLAN. THIS IMPACT WOULD BE LESS THAN SIGNIFICANT.

City of Palo Alto S/CAP

The project would result in a potentially significant impact if it would obstruct the implementation of the S/CAP. Table 4.3-4 provides an evaluation of project consistency with applicable renewable energy and energy efficiency measures in the S/CAP.

Table 4.3-4 Project Consistency with S/CAP

Measure	Project Consistency
E1. Launch comprehensive residential program services and incentives to promote voluntary electrification of water heating, space heating, cooking, clothes drying, and other appliances that use natural gas, as well as single-family residence panel upgrades and EV charger installation (also see Key Action EV-2, Multi-family EV Charging program). Services may include technical assistance, vetted contractor lists, on-bill financing, and/or direct install services	Consistent. The project would include an EV charger to serve each residential unit and one EV charging guest parking space. The project would also be all-electric pursuant to the City's All-Electric Mandate and would include energy efficient appliances and lighting, as well as water efficient fixtures and irrigation.
M1. Expand transport options available in Palo Alto	Consistent. The project itself would not expand transit options; however, it is within a 0.5 to 0.6 mile walk to multiple bus stops serviced by the VTA and Dumbarton Express (Express 101, Express 102, Express 103, Bus Route 22, Bus Route 89, Bus Route 522, Rapid 522), as well as approximately 0.4 miles southeast of the California Avenue Train Station. The project site is located adjacent to a Class

Measure	Project Consistency
	II bicycle lane on Park Boulevard and residents would also be able to utilize pedestrian connections such as sidewalks, crosswalks, and curb ramps in order to access transit options. The project would place residences in a transit-accessible area, improving the viability of transit as an option for travel to services in Palo Alto.
M5. Expand bicycle and pedestrian infrastructure	Consistent. The project would provide pedestrian and bicycle access to the proposed building via new drive aisles between buildings. The project would also include 101 bicycle parking spaces, with 91 long-term spaces located in residential garages and 10 short-term spaces located at-grade.
EV2. Enhance multi-family and workplace EV charging program as needed to create high levels of participation and expand it to include bike facility evaluation and alternative commute promotion. Evaluate financing and direct installation program features.	Consistent. The project would include an EV charger for each residential unit and one EV charging guest parking space, as well as 101 bicycle parking spaces (91 in garage and 10 surface).

City of Palo Alto 2030 Comprehensive Plan

The proposed project would result in a potentially significant impact if it would conflict with or obstruct the implementation of the 2030 Comprehensive Plan. Table 4.3-5 provides an evaluation of project consistency with applicable renewable energy and energy efficiency measures in the 2030 Comprehensive Plan.

Table 4.3-5 Project Consistency with Comprehensive Plan

Measure	Project Consistency
Land Use	
Policy L-1.12 Hold new development to the highest development standards in order to maintain Palo Alto's livability and achieve the highest quality development with the least impacts	Consistent. The project would be required to comply with the Palo Alto Green Building Ordinance and all applicable state and City regulations. The project would be all-electric pursuant to the City's All-Electric Mandate and would include solar PV systems to generate an amount of electricity equal to expected electricity usage pursuant to the 2019 Building Energy Efficiency Standards.
Policy L-2.2 Enhance connections between commercial and mixed use centers and the surrounding residential neighborhoods by promoting walkable and bikeable connections and a diverse range of retail and services that caters to the daily needs of residents	Consistent. The project would provide pedestrian and bicycle access to buildings via new drive aisles between buildings. The project would also include 101 bicycle parking spaces (91 in garage and 10 surface).
Policy T-1.17 Require new office, commercial and multi-family residential developments to provide improvements that improve bicycle and pedestrian connectivity as called for in the 2012 Palo Alto Bicycle + Pedestrian Transportation Plan	Consistent. The project applicant would contribute to the City's development impact fees, including to funds that would support bicycle and pedestrian improvements in the City. The project would also promote bicycling and walkability by providing bicycle and pedestrian access to buildings via new drive aisles between buildings. The project site is located adjacent to a Class II bicycle lane on Park Boulevard and residents would also be able to utilize pedestrian connections such as sidewalks, crosswalks, and curb ramps in order to access transit options.

Measure	Project Consistency
Policy T-4.7 Require new residential development projects to implement best practices for street design, stormwater management and green infrastructure.	Consistent. The project would be required to comply with the Palo Alto Green Building Ordinance and be 10 percent more energy efficient than the base CALGreen code requirements and would include flow-through planters on site to reduce pollutants from stormwater runoff.
Policy N-7.4 Maximize the conservation and efficient use of energy in new and existing residences and other buildings in Palo Alto.	Consistent. The project would be required to comply with the Palo Alto Green Building Ordinance and be 10 percent more energy efficient than the base CALGreen code requirements, including providing energy efficient appliances, water efficient fixtures and irrigation, and energy-efficient lighting that minimizes light trespass and glare. The project would be all-electric pursuant to the City’s All-Electric Mandate and would include solar PV systems to generate an amount of electricity equal to expected electricity usage pursuant to the 2019 Building Energy Efficiency Standards.
Policy N-7.5 Encourage energy efficient lighting that protects dark skies and promotes energy conservation by minimizing light and glare from development while ensuring public health and safety.	
Source: City of Palo Alto 2017	

As shown in Table 4.3-4 and Table 4.3-5, the project would generally be consistent with all applicable energy efficiency policies.

Mitigation Measures

No mitigation measures would be required.

c. Cumulative Impacts

As discussed in Section 3, *Environmental Setting*, cumulative development in the City of Palo Alto would include residential and commercial development. Each of the future developments would increase the consumption of energy and energy demand in the City. Energy consumption by the cumulative projects would be regulated by Energy Efficiency Standards embodied in Title 24 of the California Building Code and, in the City, the Palo Alto Green Building Ordinance, which applies to new construction of both residential and non-residential buildings; the City's All-Electric Mandate, which applies to new single-family and low-rise residential construction; and indirect energy reduction measures from GHG reduction policies. Homes built in 2020 and beyond will be highly efficient and will be built to utilize photovoltaic generation to support expected annual electric needs (CalGreen Energy Systems 2019).

The City of Palo Alto has policies and programs to reduce overall energy consumption in the City and the region. Pursuant to the policies included in its Comprehensive Plan and Municipal Code regulations, the City encourages energy efficient design in public and private development. Planned, pending, and reasonably foreseeable projects would be subject to these applicable policies, and ongoing implementation of the programs described above would continue to reduce energy demand associated with future projects.

Additionally, CPAU meets over 50 percent of Palo Alto's electricity demand with renewable energy sources, well above California as a whole. Projects serviced by CPAU would not place a significant or disproportionate demand on non-renewable energy sources in the state. Therefore, no cumulative impacts (including project-specific impacts and operations) are anticipated to result in the wasteful use of energy. Impacts from the project would be less than significant.

4.4 Greenhouse Gas Emissions

This section discusses the potential impacts related to greenhouse gas (GHG) emissions and climate change from the proposed project.

4.4.1 Setting

Greenhouse gas emissions and climate change are a cumulative global issue. The United States Environmental Protection Agency (U.S. EPA) and the California Air Resources Board (CARB) regulate GHG emissions within the United States and the State of California, respectively. While the CARB has the primary regulatory responsibility within California for GHG emissions, local agencies can also adopt policies for GHG emission reduction. CARB has divided California into regional air basins. The project is in Santa Clara County, which is within the San Francisco Bay Area Air Basin (SFBAAB) and under the jurisdiction of the Bay Area Air Quality Management District (BAAQMD).

a. Climate Change and Greenhouse Gases

Climate change is the observed increase in the average temperature of the Earth's atmosphere and oceans along with other substantial changes in climate (such as wind patterns, precipitation, and storms) over an extended period. The term "climate change" is often used interchangeably with the term "global warming," but climate change is preferred because it conveys that other changes are happening in addition to rising temperatures. The baseline against which these changes are measured originates in historical records that identify temperature changes that occurred in the past, such as during previous ice ages. The global climate is changing continuously, as evidenced in the geologic record which indicates repeated episodes of substantial warming and cooling. The rate of change has typically been incremental, with warming or cooling trends occurring over the course of thousands of years. The past 10,000 years have been marked by a period of incremental warming, as glaciers have steadily retreated across the globe. However, scientists have observed acceleration in the rate of warming over the past 150 years. The United Nations Intergovernmental Panel on Climate Change (IPCC) expressed that the rise and continued growth of atmospheric CO₂ concentrations is unequivocally due to human activities in the IPCC's Sixth Assessment Report (2021). Human influence has warmed the atmosphere, ocean, and land, which has led the climate to warm at an unprecedented rate in the last 2,000 years. It is estimated that between the period of 1850 through 2019, that a total of 2,390 gigatonnes of anthropogenic CO₂ was emitted. It is likely that anthropogenic activities have increased the global surface temperature by approximately 1.07 degrees Celsius between the years 2010 through 2019 (IPCC 2021). Furthermore, since the late 1700s, estimated concentrations of CO₂, methane, and nitrous oxide in the atmosphere have increased by over 43 percent, 156 percent, and 17 percent, respectively, primarily due to human activity (U.S. EPA 2021a). Emissions resulting from human activities are thereby contributing to an average increase in Earth's temperature

Gases that absorb and re-emit infrared radiation in the atmosphere are called GHGs. The gases widely seen as the principal contributors to human-induced climate change include carbon dioxide (CO₂), methane (CH₄), nitrous oxides (N₂O), fluorinated gases such as hydrofluorocarbons (HFCs) and perfluorocarbons (PFCs), and sulfur hexafluoride (SF₆). Water vapor is excluded from the list of GHGs because it is short-lived in the atmosphere, and natural processes, such as oceanic evaporation, largely determine its atmospheric concentrations.

GHGs are emitted by natural processes and human activities. Of these gases, CO₂ and CH₄ are emitted in the greatest quantities from human activities. Emissions of CO₂ are usually by-products of fossil fuel combustion, and CH₄ results from off-gassing associated with agricultural practices and landfills. Human-made GHGs, many of which have greater heat-absorption potential than CO₂, include fluorinated gases and SF₆ (U.S. EPA 2021a).

Different types of GHGs have varying global warming potentials (GWP). The GWP of a GHG is the potential of a gas or aerosol to trap heat in the atmosphere over a specified timescale (generally, 100 years). Because GHGs absorb different amounts of heat, a common reference gas (CO₂) is used to relate the amount of heat absorbed to the amount of the gas emitted, referred to as “carbon dioxide equivalent” (CO₂e), which is the amount of GHG emitted multiplied by its GWP. Carbon dioxide has a 100-year GWP of one. By contrast, methane has a GWP of 30, meaning its global warming effect is 30 times greater than CO₂ on a molecule per molecule basis (IPCC 2021).¹

The accumulation of GHGs in the atmosphere regulates the earth’s temperature. Without the natural heat-trapping effect of GHGs, the earth’s surface would be about 33 degrees Celsius (°C) cooler (World Meteorological Organization 2020). However, since 1750, estimated concentrations of CO₂, CH₄, and N₂O in the atmosphere have increased by 47 percent, 156 percent, and 23 percent, respectively, primarily due to human activity (IPCC 2021). GHG emissions from human activities, particularly the consumption of fossil fuels for electricity production and transportation, are believed to have elevated the concentration of these gases in the atmosphere beyond the level of concentrations that occur naturally.

Global Emissions Inventory

In 2015, worldwide anthropogenic total 47,000 million MT of CO₂e, which is a 43 percent increase from 1990 GHG levels (U.S. EPA 2021b). Specifically, 34,522 million metric tons (MMT) of CO₂e of CO₂, 8,241 MMT of CO₂e of CH₄, 2,997 MMT of CO₂e of N₂O, and 1,001 MMT of CO₂e of fluorinated gases were emitted in 2015. The largest source of GHG emissions were energy production and use (includes fuels used by vehicles and buildings), which accounted for 75 percent of the global GHG emissions. Agriculture uses and industrial processes contributed 12 percent and six percent, respectively. Waste sources contributed for three percent and two percent was due to international transportation sources. These sources account for approximately 98 percent because there was a net sink of two percent from land-use change and forestry. (U.S. EPA 2021b).

United States Emissions Inventory

Total U.S. GHG emissions were 6,558 MMT of CO₂e in 2019. Emissions decreased by 1.7 percent from 2018 to 2019; since 1990, total U.S. emissions have increased by an average annual rate of 0.06 percent for a total increase of 1.8 percent between 1990 and 2019. The decrease from 2018 to 2019 reflects the combined influences of several long-term trends, including population changes, economic growth, energy market shifts, technological changes such as improvements in energy efficiency, and decrease carbon intensity of energy fuel choices. In 2019, the industrial and transportation end-use sectors accounted for 30 percent and 29 percent, respectively, of nationwide GHG emissions while the commercial and residential end-use sectors accounted for 16 percent and 15 percent of nationwide GHG emissions, respectively, with electricity emissions distributed among the various sectors (U.S. EPA 2021c).

¹ The Intergovernmental Panel on Climate Change’s (2021) *Sixth Assessment Report* determined that methane has a GWP of 30. However, the 2017 Climate Change Scoping Plan published by the California Air Resources Board uses a GWP of 25 for methane, consistent with the Intergovernmental Panel on Climate Change’s (2007) *Fourth Assessment Report*. Therefore, this analysis utilizes a GWP of 25.

California Emissions Inventory

Based on the CARB California Greenhouse Gas Inventory for 2000-2019, California produced 418.2 MMT of CO₂e in 2019, which is 7.2 MMT of CO₂e lower than 2018 levels. The major source of GHG emissions in California is the transportation sector, which comprises 40 percent of the state's total GHG emissions. The industrial sector is the second largest source, comprising 21 percent of the state's GHG emissions while electric power accounts for approximately 14 percent (CARB 2021). The magnitude of California's total GHG emissions is due in part to its large size and large population compared to other states. However, a factor that reduces California's per capita fuel use and GHG emissions as compared to other states is its relatively mild climate. In 2016, the State of California achieved its 2020 GHG emission reduction target of reducing emissions to 1990 levels as emissions fell below 431 MMT of CO₂e (CARB 2021). The annual 2030 statewide target emissions level is 260 MMT of CO₂e (CARB 2017).

Local Emissions Inventory

Based on the GHG inventory included in the City of Palo Alto's Sustainability and Climate Action Plan (S/CAP) Staff Report, Palo Alto's municipal and community GHG emissions totaled approximately 482,000 metric tons in 2019, approximately 38.2 percent below 1990 levels. The major source of GHGs in Palo Alto is associated with on-road transportation, contributing approximately 61 percent. Natural gas is the second largest source, contributing 32 percent to the City's GHG emissions. The remaining 7 percent is made up by other sources such as additional transportation sources, solid waste, wastewater, and brown power supply (electricity) (City of Palo Alto 2021a).

b. Potential Effects of Climate Change

Globally, climate change has the potential to affect numerous environmental resources though potential impacts related to future air temperatures and precipitation patterns. Scientific modeling predicts that continued GHG emissions at or above current rates would induce more extreme climate changes during the 21st century than were observed during the 20th century. Each of the past three decades has been warmer than all the previous decades in the instrumental record, and the decade from 2000 through 2010 has been the warmest. The observed global mean surface temperature (GMST) from 2015 to 2017 was approximately 1.0°C higher than the average GMST over the period from 1880 to 1900 (National Oceanic and Atmospheric Administration 2020). Furthermore, several independently analyzed data records of global and regional Land-Surface Air Temperature (LSAT) obtained from station observations jointly indicate that LSAT and sea surface temperatures have increased.

According to *California's Fourth Climate Change Assessment*, statewide temperatures from 1986 to 2016 were approximately 0.6 to 1.1°C higher than those recorded from 1901 to 1960. Potential impacts of climate change in California may include reduced water supply from snowpack, sea level rise, more extreme heat days per year, more large forest fires, and more drought years (State of California 2018). In addition to statewide projections, *California's Fourth Climate Change Assessment* includes regional reports that summarize climate impacts and adaptation solutions for nine regions of the state and regionally specific climate change case studies (State of California 2018). However, while there is growing scientific consensus about the possible effects of climate change at a global and statewide level, current scientific modeling tools are unable to predict what local impacts may occur with a similar degree of accuracy. A summary follows of some of the potential effects that could be experienced in California as a result of climate change.

Air Quality and Wildfires

Scientists project that the annual average maximum daily temperatures in California could rise by 2.4 to 3.2°C in the next 50 years and by 3.1 to 4.9°C in the next century (State of California 2018). Higher temperatures are conducive to air pollution formation, and rising temperatures could therefore result in worsened air quality in California. As a result, climate change may increase the concentration of ground-level ozone, but the magnitude of the effect, and therefore its indirect effects, are uncertain. In addition, as temperatures have increased in recent years, the area burned by wildfires throughout the state has increased, and wildfires have occurred at higher elevations in the Sierra Nevada Mountains (State of California 2018). If higher temperatures continue to be accompanied by an increase in the incidence and extent of large wildfires, air quality could worsen. Severe heat accompanied by drier conditions and poor air quality could increase the number of heat-related deaths, illnesses, and asthma attacks throughout the state. However, if higher temperatures are accompanied by wetter, rather than drier conditions, the rains could tend to temporarily clear the air of particulate pollution, which would effectively reduce the number of large wildfires and thereby ameliorate the pollution associated with them (California Natural Resources Agency 2009).

Water Supply

Analysis of paleoclimatic data (such as tree-ring reconstructions of stream flow and precipitation) indicates a history of naturally and widely varying hydrologic conditions in California and the west, including a pattern of recurring and extended droughts. Uncertainty remains with respect to the overall impact of climate change on future precipitation trends and water supplies in California. Year-to-year variability in statewide precipitation levels has increased since 1980, meaning that wet and dry precipitation extremes have become more common (California Department of Water Resources 2018). This uncertainty regarding future precipitation trends complicates the analysis of future water demand, especially where the relationship between climate change and its potential effect on water demand is not well understood. The average early spring snowpack in the western U.S., including the Sierra Nevada Mountains, decreased by about 10 percent during the last century. During the same period, sea level rose over 0.15 meter along the central and southern California coasts (State of California 2018). The Sierra snowpack provides the majority of California's water supply as snow that accumulates during wet winters is released slowly during the dry months of spring and summer. A warmer climate is predicted to reduce the fraction of precipitation that falls as snow and the amount of snowfall at lower elevations, thereby reducing the total snowpack (State of California 2018). Projections indicate that average spring snowpack in the Sierra Nevada and other mountain catchments in central and northern California will decline by approximately 66 percent from its historical average by 2050 (State of California 2018).

Hydrology and Sea Level Rise

Climate change could affect the intensity and frequency of storms and flooding (State of California 2018). Furthermore, climate change could induce substantial sea level rise in the coming century. Rising sea level increases the likelihood of and risk from flooding. The rate of increase of global mean sea levels between 1993 to 2020, observed by satellites, is approximately 3.3 millimeters per year, double the twentieth century trend of 1.6 millimeters per year (World Meteorological Organization 2013; National Aeronautics and Space Administration 2020). Global mean sea levels in 2013 were about 0.23 meter higher than those of 1880 (National Aeronautics and Space Administration 2020). Sea levels are rising faster now than in the previous two millennia, and the

rise will probably accelerate, even with robust GHG emission control measures. The most recent IPCC report predicts a mean sea level rise ranging between 0.25 to 0 1.01 meters by 2100 with the sea level ranges dependent on a low, intermediate, or high GHG emissions scenario (IPCC 2021). A rise in sea levels could erode 31 to 67 percent of southern California beaches and cause flooding of approximately 370 miles of coastal highways during 100-year storm events. This would also jeopardize California's water supply due to saltwater intrusion and induce groundwater flooding and/or exposure of buried infrastructure (State of California 2018). Furthermore, increased storm intensity and frequency could affect the ability of flood-control facilities, including levees, to handle storm events.

Agriculture

California has an over \$50 billion annual agricultural industry that produces over a third of the country's vegetables and two-thirds of the country's fruits and nuts (California Department of Food and Agriculture 2020). Higher CO₂ levels can stimulate plant production and increase plant water-use efficiency. However, if temperatures rise and drier conditions prevail, certain regions of agricultural production could experience water shortages of up to 16 percent, which would increase water demand as hotter conditions lead to the loss of soil moisture. In addition, crop yield could be threatened by water-induced stress and extreme heat waves, and plants may be susceptible to new and changing pest and disease outbreaks (State of California 2018). Temperature increases could also change the time of year certain crops, such as wine grapes, bloom or ripen, and thereby affect their quality (California Climate Change Center 2006).

Ecosystems

Climate change and the potential resultant changes in weather patterns could have ecological effects on the global and local scales. Soil moisture is likely to decline in many regions as a result of higher temperatures, and intense rainstorms are likely to become more frequent. Rising temperatures could have four major impacts on plants and animals: timing of ecological events; geographic distribution and range of species; species composition and the incidence of nonnative species within communities; and ecosystem processes, such as carbon cycling and storage (Parmesan 2006; State of California 2018).

c. Regulatory Setting

The following regulations and case law address both climate change and GHG emissions.

Federal Regulations

Federal Clean Air Act

The U.S. Supreme Court determined in *Massachusetts et al. v. Environmental Protection Agency et al.* ([2007] 549 U.S. 05-1120) that the U.S. EPA has the authority to regulate motor vehicle GHG emissions under the federal Clean Air Act. The U.S. EPA issued a Final Rule for mandatory reporting of GHG emissions in October 2009. This Final Rule applies to fossil fuel suppliers, industrial gas suppliers, direct GHG emitters, and manufacturers of heavy-duty and off-road vehicles and vehicle engines and requires annual reporting of emissions. In 2012, the U.S. EPA issued a Final Rule that established the GHG permitting thresholds that determine when Clean Air Act permits under the New Source Review Prevention of Significant Deterioration and Title V Operating Permit programs are required for new and existing industrial facilities.

In *Utility Air Regulatory Group v. Environmental Protection Agency* (134 Supreme Court 2427 [2014]), the U.S. Supreme Court held the U.S. EPA may not treat GHGs as an air pollutant for purposes of determining whether a source can be considered a major source required to obtain a Prevention of Significant Deterioration or Title V permit. The Court also held that Prevention of Significant Deterioration permits otherwise required based on emissions of other pollutants may continue to require limitations on GHG emissions based on the application of Best Available Control Technology.

Safer Affordable Fuel-Efficient Vehicles Rule

On September 27, 2019, the U.S. EPA and the National Highway Traffic Safety Administration published the Safer Affordable Fuel-Efficient (SAFE) Vehicles Rule Part One: One National Program. The SAFE Rule Part One revokes California's authority to set its own GHG emissions standards and to adopt its own zero-emission vehicle mandates. On April 30, 2020, the U.S. EPA and the National Highway Traffic Safety Administration published Part Two of the SAFE Vehicles Rule, which revised corporate average fuel economy and CO₂ emissions standards for passenger cars and trucks of model years 2021-2026 such that the standards increase by approximately 1.5 percent each year through model year 2026 as compared to the approximately five percent annual increase required under the 2012 standards (National Highway Traffic Safety Administration 2020). To account for the effects of the SAFE Vehicles Rule, CARB released off-model adjustment factors on June 26, 2020, to adjust GHG emissions outputs from the EMFAC model (CARB 2020).

State Regulations

CARB is responsible for the coordination and oversight of state and local air pollution control programs in California. There are numerous regulations aimed at reducing the state's GHG emissions. These initiatives are summarized below.

California Advanced Clean Cars Program

Assembly Bill (AB) 1493 (2002), California's Advanced Clean Cars program (referred to as "Pavley"), requires CARB to develop and adopt regulations to achieve "the maximum feasible and cost-effective reduction of GHG emissions from motor vehicles." On June 30, 2009, the U.S. EPA granted the waiver of Clean Air Act preemption to California for its GHG emission standards for motor vehicles, beginning with the 2009 model year, which allows California to implement more stringent vehicle emission standards than those promulgated by the U.S. EPA. Pavley I regulates model years from 2009 to 2016 and Pavley II, now referred to as "LEV (Low Emission Vehicle) III GHG," regulates model years from 2017 to 2025. The Advanced Clean Cars program coordinates the goals of the LEV, Zero Emissions Vehicles (ZEV), and Clean Fuels Outlet programs and would provide major reductions in GHG emissions. By 2025, the rules will be fully implemented, and new automobiles will emit 34 percent fewer GHGs and 75 percent fewer smog-forming emissions from their model year 2016 levels (CARB 2011).

California Global Warming Solutions Act of 2006 (Assembly Bill 32 and Senate Bill 32)

The "California Global Warming Solutions Act of 2006," (AB 32), outlines California's major legislative initiative for reducing GHG emissions. AB 32 codifies the statewide goal of reducing GHG emissions to 1990 levels by 2020 and requires CARB to prepare a Scoping Plan that outlines the main state strategies for reducing GHG emissions to meet the 2020 deadline. In addition, AB 32 requires CARB to adopt regulations to require reporting and verification of statewide GHG

emissions. Based on this guidance, CARB approved a 1990 statewide GHG level and 2020 target of 431 MMT of CO₂e, which was achieved in 2016. CARB approved the Scoping Plan on December 11, 2008, which included GHG emission reduction strategies related to energy efficiency, water use, and recycling and solid waste, among others (CARB 2008). Many of the GHG reduction measures included in the Scoping Plan (e.g., Low Carbon Fuel Standard, Advanced Clean Car standards, and Cap-and-Trade) have been adopted since the Scoping Plan's approval.

The CARB approved the 2013 Scoping Plan update in May 2014. The update defined the CARB's climate change priorities for the next five years, set the groundwork to reach post-2020 statewide goals, and highlighted California's progress toward meeting the "near-term" 2020 GHG emission reduction goals defined in the original Scoping Plan. It also evaluated how to align the state's longer term GHG reduction strategies with other state policy priorities, including those for water, waste, natural resources, clean energy, transportation, and land use (CARB 2014).

On September 8, 2016, the governor signed Senate Bill (SB) 32 into law, extending the California Global Warming Solutions Act of 2006 by requiring the state to further reduce GHG emissions to 40 percent below 1990 levels by 2030 (the other provisions of AB 32 remain unchanged). On December 14, 2017, the CARB adopted the 2017 Scoping Plan, which provides a framework for achieving the 2030 target. The 2017 Scoping Plan relies on the continuation and expansion of existing policies and regulations, such as the Cap-and-Trade Program, and implementation of recently adopted policies and legislation, such as SB 1383 and SB 100 (discussed later). The 2017 Scoping Plan also puts an increased emphasis on innovation, adoption of existing technology, and strategic investment to support its strategies. As with the 2013 Scoping Plan update, the 2017 Scoping Plan does not provide project-level thresholds for land use development. Instead, it recommends that local governments adopt policies and locally-appropriate quantitative thresholds consistent with statewide per capita goals of six MT of CO₂e by 2030 and two MT of CO₂e by 2050 (CARB 2017). As stated in the 2017 Scoping Plan, these goals may be appropriate for plan-level analyses (city, county, sub-regional, or regional level), but not for specific individual projects because they include all emissions sectors in the state (CARB 2017).

Senate Bill 375

The Sustainable Communities and Climate Protection Act of 2008 (SB 375), signed in August 2008, enhances the state's ability to reach AB 32 goals by directing the CARB to develop regional GHG emission reduction targets to be achieved from passenger vehicles by 2020 and 2035. SB 375 aligns regional transportation planning efforts, regional GHG reduction targets, and affordable housing allocations. Metropolitan Planning Organizations (MPOs) are required to adopt a Sustainable Communities Strategy (SCS), which allocates land uses in the MPO's Regional Transportation Plan (RTP). Qualified projects consistent with an approved SCS or Alternative Planning Strategy (categorized as "transit priority projects") can receive incentives to streamline CEQA processing.

On March 22, 2018, CARB adopted updated regional targets for reducing GHG emissions from 2005 levels by 2020 and 2035. The Metropolitan Transportation Commission (MTC)/Association of Bay Area Government (ABAG) was assigned targets of a 10 percent reduction GHGs from per capita GHG emissions from passenger vehicles by 2020 and a 19 percent reduction in per capita GHG emissions from passenger vehicles by 2035. The MTC/ABAG adopted the Plan Bay Area 2050 on October 21, 2021, which meets the requirements of SB 375.

California Integrated Waste Management Act (Assembly Bill 341)

The California Integrated Waste Management Act of 1989, as modified by AB 341 in 2011, requires each jurisdiction's source reduction and recycling element to include an implementation schedule that shows: (1) diversion of 25 percent of all solid waste by January 1, 1995, through source reduction, recycling, and composting activities and (2) diversion of 50 percent of all solid waste on and after January 1, 2000.

Senate Bill 1383

Adopted in September 2016, SB 1383 (Lara, Chapter 395, Statutes of 2016) requires the CARB to approve and begin implementing a comprehensive strategy to reduce emissions of short-lived climate pollutants. SB 1383 requires the strategy to achieve the following reduction targets by 2030:

- Methane – 40 percent below 2013 levels
- Hydrofluorocarbons – 40 percent below 2013 levels
- Anthropogenic black carbon – 50 percent below 2013 levels

SB 1383 also requires the California Department of Resources Recycling and Recovery (CalRecycle), in consultation with the CARB, to adopt regulations that achieve specified targets for reducing organic waste in landfills.

Senate Bill 100

Adopted on September 10, 2018, SB 100 supports the reduction of GHG emissions from the electricity sector by accelerating the state's Renewables Portfolio Standard (RPS) Program, which was last updated by SB 350 in 2015. SB 100 requires electricity providers to increase procurement from eligible renewable energy resources to 33 percent of total retail sales by 2020, 60 percent by 2030, and 100 percent by 2045.

Executive Order B-55-18

On September 10, 2018, the former Governor Brown issued Executive Order (EO) B-55-18, which established a new statewide goal of achieving carbon neutrality by 2045 and maintaining net negative emissions thereafter. This goal is in addition to the existing statewide GHG reduction targets established by SB 375, SB 32, SB 1383, and SB 100.

California Building Standards Code

The California Code of Regulations (CCR) Title 24 is referred to as the California Building Standards Code. It consists of a compilation of several distinct standards and codes related to building construction including plumbing, electrical, interior acoustics, energy efficiency, and handicap accessibility for persons with physical and sensory disabilities. The current iteration is the 2019 Title 24 standards. The California Building Standards Code's energy-efficiency and green building standards are outlined below.

PART 6 – BUILDING ENERGY EFFICIENCY STANDARDS/ENERGY CODE

CCR Title 24, Part 6 is the Building Energy Efficiency Standards or California Energy Code. This code, originally enacted in 1978, establishes energy-efficiency standards for residential and non-residential buildings in order to reduce California's energy demand. New construction and major renovations must demonstrate their compliance with the current Energy Code through submittal

and approval of a Title 24 Compliance Report to the local building permit review authority and the California Energy Commission (CEC). The 2019 Title 24 standards are the applicable building energy efficiency standards for the project because they became effective on January 1, 2020.

PART 11 – CALIFORNIA GREEN BUILDING STANDARDS

The California Green Building Standards Code, referred to as CalGreen, was added to Title 24 as Part 11, first in 2009 as a voluntary code, which then became mandatory effective January 1, 2011 (as part of the 2010 California Building Standards Code). The 2019 CalGreen includes mandatory minimum environmental performance standards for all ground-up new construction of residential and non-residential structures. It also includes voluntary tiers (Tiers I and II) with stricter environmental performance standards for these same categories of residential and non-residential buildings. Local jurisdictions must enforce the minimum mandatory CalGreen standards and may adopt additional amendments for stricter requirements.

The mandatory standards require:

- 20 percent reduction in indoor water use relative to specified baseline levels;²
- 65 percent construction/demolition waste diverted from landfills;
- Inspections of energy systems to ensure optimal working efficiency;
- Low-pollutant emitting exterior and interior finish materials such as paints, carpets, vinyl flooring, and particleboards;
- Dedicated circuitry to facilitate installation of electric vehicle charging stations in newly constructed attached garages for single-family and duplex dwellings; and
- Installation of electric vehicle charging stations at least three percent of the parking spaces for all new multi-family developments with 17 or more units.

The voluntary standards require:

- **Tier I:** stricter energy efficiency requirements, stricter water conservation requirements for specific fixtures, 65 percent reduction in construction waste with third-party verification, 10 percent recycled content for building materials, 20 percent permeable paving, 20 percent cement reduction, and cool/solar reflective roof; and
- **Tier II:** stricter energy efficiency requirements, stricter water conservation requirements for specific fixtures, 75 percent reduction in construction waste with third-party verification, 15 percent recycled content for building materials, 30 percent permeable paving, 25 percent cement reduction, and cool/solar reflective roof.

Local Regulations

Plan Bay Area 2050

Plan Bay Area 2050 is a state-mandated, integrated long-range transportation, land-use, and housing plan that would support a growing economy, provide more housing and transportation choices and reduce transportation-related pollution in the nine-county San Francisco Bay Area (MTC/ABAG 2021). The SCS builds on earlier efforts to develop an efficient transportation network

² Similar to the compliance reporting procedure for demonstrating Energy Code compliance in new buildings and major renovations, compliance with the CalGreen water-reduction requirements must be demonstrated through completion of water use reporting forms. Buildings must demonstrate a 20 percent reduction in indoor water use by either showing a 20 percent reduction in the overall baseline water use as identified in CalGreen or a reduced per-plumbing-fixture water use rate.

and grow in a financially and environmentally responsible way. Plan Bay Area 2050 focuses on advancing equity and improving resiliency in the Bay Area by creating strategies in the following four elements: Housing, Economy, Transportation, and Environment. The Plan discusses how the future is uncertain due to anticipated employment growth, lack of housing options, and outside forces, such as climate change and economic turbulence. These uncertainties will impact growth in the Bay Area and exacerbate issues for those who are historically and systemically marginalized and underserved and excluded. Thus, Plan Bay Area 2050 has created strategies and considered investments that will serve those systemically underserved communities and provide equitable opportunities. The Plan presents a total of 35 strategies to outline how the \$1.4 trillion dollar investment would be utilized. The strategies include, but are not limited to, the following: providing affordable housing, allowing higher-density in proximity to transit-corridors, optimizing the existing roadway network, creating complete streets, providing subsidies for public transit, reducing climate emissions, and expanding open space area. To bring these strategies to fruition, it will require participation by agencies, policymakers, and the public. An implementation plan is also included as part of the Plan to assess the requirements needed to carry out the strategies, identify the roles of pertinent entities, create an appropriate method to implement the strategies, and create a timeline for implementation.

City of Palo Alto 2030 Comprehensive Plan

The Transportation Element sets forth the following applicable goals and policies to reduce greenhouse gas emissions through promoting alternative transportation (City of Palo Alto 2017):

- Goal T-1** Create a sustainable transportation system, complemented by a mix of land uses, that emphasizes walking, bicycling, use of public transportation and other methods to reduce GHG emissions and the use of single-occupancy motor vehicles.
- Policy T-1.1** Take a comprehensive approach to reducing single-occupant vehicle trips by involving those who live, work and shop in Palo Alto in developing strategies that make it easier and more convenient not to drive.
- Policy T-1.3** Reduce GHG and pollutant emissions associated with transportation by reducing VMT and per-mile emissions through increasing transit options, supporting biking and walking, and the use of zero-emission vehicle technologies to meet City and State goals for GHG reductions by 2030.
- Policy T-1.4** Ensure that electric vehicle charging infrastructure, including infrastructure for charging e-bikes, is available citywide.
- Policy T-1.16** Promote personal transportation vehicles as an alternative to cars (e.g. bicycles, skateboards, roller blades) to get to work, school, shopping, recreational facilities and transit stops.
- Policy T-1.17** Require new office, commercial and multi-family residential developments to provide improvements that improve bicycle and pedestrian connectivity as called for in the 2012 Palo Alto Bicycle + Pedestrian Transportation Plan.

The Natural Environment Element sets forth the following applicable goals and policies to reduce greenhouse gas emissions through the use of clean and efficient energy (City of Palo Alto 2017):

- Goal N-7** A clean, efficient energy supply that makes use of cost-effective renewable resources.

- Policy N-7.4** Maximize the conservation and efficient use of energy in new and existing residences and other buildings in Palo Alto.
- Policy N-7.5** Encourage energy efficient lighting that protects dark skies and promotes energy conservation by minimizing light and flare from development while ensuring public health and safety.
- Policy N-7.6** Support the maximum economic use of solar electric (photovoltaic) and solar thermal energy, both as renewable supply resources for the Electric Utility Portfolio and as alternative forms of local power generation.
- Policy N-7.7** Explore a variety of cost-effective ways to reduce natural gas usage in existing and new buildings in Palo Alto in order to reduce associated greenhouse gas emissions.
- Policy N-7.8** Support opportunities to maximize energy recovery from organic materials such as food scraps, yard trimmings and residual solids from sewage treatment.

Palo Alto Sustainability and Climate Change Plan

The City of Palo Alto launched its Sustainability and Climate Action Plan (S/CAP) in August 2014. The City launched an update to the S/CAP in 2020 to advance strategies to meet sustainability goals, including the goal of reducing GHG emissions 80 percent below 1990 levels by 2030. The S/CAP proposes goals and actions in seven areas: Energy, Mobility, Electric Vehicles, Water, Climate Adaptation and Sea Level Rise, Natural Environment, and Zero Waste (City of Palo Alto 2021b).

Applicable GHG reduction key actions in the S/CAP include:

- C3. Complete study to identify any additional Energy, EV, or Mobility key actions needed to achieve 80% reduction in greenhouse gas emissions from 1990 levels by 2030, such as electrification of additional multi-family or commercial end uses, greater electrification of vehicles, or other emissions reduction actions not already identified in this Plan. If legally feasible and approved by community action after a stakeholder design process, implement these additional key actions.
- E1. Launch comprehensive residential program services and incentives to promote voluntary electrification of water heating, space heating, cooking, clothes drying, and other appliances that use natural gas, as well as single-family residence panel upgrades and EV charger installation (also see Key Action EV-2, Multi-family EV Charging program). Services may include technical assistance, vetted contractor lists, on-bill financing, and/or direct install services
- M1. Expand transport options available in Palo Alto
- M5. Expand bicycle and pedestrian infrastructure
- EV2. Enhance multi-family and workplace EV charging program as needed to create high levels of participation and expand it to include bike facility evaluation and alternative commute promotion. Evaluate financing and direct installation program features.

Palo Alto Municipal Code

The City's Green Building Ordinance and Energy Reach Ordinance exceed the mandatory efficiency standards set by the California Energy Code and to adopt the California Green Building Code Voluntary Tiers 1 and 2 as mandatory measures for new construction and addition-remodels over a certain size. The Palo Alto Green Building Ordinance requires applicants to incorporate sustainable design, construction, and operational requirements into most single-family residential, multi-family residential, and non-residential projects. The ordinance results in reduced energy and water

operational costs and improved environmental quality for building owners and occupants and encourages material conservation and resource efficiency.

The City's All-Electric Mandate was adopted as part of the 2019 Energy Reach Code and applies to new single-family and low-rise residential constructions (three-stories or less), with the exception of accessory dwelling units (ADUs).

4.4.2 Impact Analysis

a. Significance Thresholds

The vast majority of individual projects do not generate sufficient GHG emissions to influence climate change directly. However, physical changes caused by a project can contribute incrementally to significant cumulative effects, even if individual changes resulting from a project are limited. The issue of climate change typically involves an analysis of whether a project's contribution towards an impact would be cumulatively considerable. "Cumulatively considerable" means that the incremental effects of an individual project are significant when viewed in connection with the effects of past projects, other current projects, and probable future projects (CEQA Guidelines, Section 15064[h][1]).

According to the *CEQA Guidelines*, projects can tier from a qualified GHG reduction plan, which allows for project-level evaluation of GHG emissions through the comparison of the project's consistency with the GHG reduction policies included in a qualified GHG reduction plan. This approach is considered by the Association of Environmental Professionals (AEP) in their white paper, *Beyond Newhall and 2020*, to be the most defensible approach presently available under CEQA to determine the significance of a project's GHG emissions (AEP 2016). Palo Alto does not currently have a qualified GHG reduction plan and thus this approach is not currently feasible.

To evaluate whether a project may generate a quantity of GHG emissions that may have a significant impact on the environment, state agencies have developed a number of operational bright-line significance thresholds. Significance thresholds are numeric mass emissions thresholds that identify the level at which additional analysis of project GHG emissions is necessary. Projects that attain the significance target, with or without mitigation, would result in less than significant GHG emissions. Many significance thresholds have been developed to reflect a 90 percent capture rate tied to the 2020 reduction target established in AB 32. Numerous lead agencies (including the City of Palo Alto) have identified as appropriate significance screening tools for residential, commercial, industrial, and public land uses and facilities projects with horizon years before 2020.

In the BAAQMD's 2017 *CEQA Air Quality Guidelines*, the BAAQMD outlines an approach to determine the significance of projects. For residential, commercial, industrial, and public land use development projects, the thresholds of significance for operational-related GHG emissions are shown in in Table 4.4-1.

Table 4.4-1 GHG Significance Thresholds – Project Level

GHG Emission Source Category	2020 Operational	Adjusted 2030 Operational	
Land Use Development Projects	1,100	660	MT of CO ₂ e/year OR
	4.6	2.8	MT of CO ₂ e/SP/year (residents + employees)
Stationary-source Projects	10,000	10,000	MT of CO ₂ e/year
General Plans	6.6	4.0	MT of CO ₂ e/SP/year (residents + employees)

SP = Service Population

Project emissions can be expressed on a per-capita basis as metric tons of CO₂e/Service Population/year, which represents the project's total estimated annual GHG emissions divided by the estimated total number of new residents and employees that would result from development of a project.

Source: BAAQMD 2017

The BAAQMD annual emissions threshold of 1,100 MT of CO₂e per year was designed to capture 90 percent of all emissions associated with projects in the Basin and require implementation of mitigation so that a considerable reduction in emissions from new projects would be achieved. According to the California Air Pollution Control Officers Association (CAPCOA) white paper, *CEQA & Climate Change*, a quantitative threshold based on a 90 percent market capture rate is generally consistent with AB 32 (CAPCOA 2008). SB 32, codified in 2016, sets a more conservative emission reduction target of 40 percent below the 1990 level by 2030. Because the previously established threshold of 1,100 MT CO₂e was not developed to meet the targets established by SB 32, it must be adjusted to meet the new, more conservative, emission reduction target of 40 percent below the 1990 level by 2030.

Although the BAAQMD has not yet quantified a threshold for 2030, reduction of the existing 2020 thresholds by 40 percent would be consistent with the State reduction target established in SB 32. The proposed project would have a potentially significant contribution to GHG emissions if it would result in GHG emissions that would exceed either the bright-line threshold of 660 metric tons of CO₂e per year or the efficiency threshold of 2.8 metric tons of CO₂e per service population per year. If the proposed project would not result in more than 660 metric tons of CO₂e per year, then comparison to the efficiency threshold is not required.

Palo Alto Sustainability and Climate Action Plan

As discussed in the regulatory section above, the proposed project would result in a potentially significant impact if it would obstruct the implementation of the S/CAP. Although the S/CAP does not establish quantitative thresholds, it provides a qualitative analysis to determine if the proposed project would obstruct implementation of S/CAP goals.

b. Methodology

Construction Emissions

Construction of the development would generate temporary GHG emissions primarily due to the operation of construction equipment and truck trips. Site preparation and grading typically generate the greatest amount of emissions due to the use of grading equipment and soil hauling. Although the BAAQMD does not have specific quantitative thresholds for construction activity, BAAQMD encourages the quantification of GHG emissions and therefore construction emissions were estimated in CalEEMod Version 2020.4.0 and provided in Appendix E for informational purposes.

Construction input data for CalEEMod include, but are not limited to, the anticipated start and finish dates of construction activity; inventories of construction equipment to be used; areas to be excavated and graded; and volumes of materials to be exported from and imported to the project site. The analysis assessed maximum daily emissions from individual construction activities, including demolition, site preparation, grading, trenching, building construction, paving, and architectural coating. Construction equipment estimates are based on surveys of construction projects within California conducted by members of California Air Pollution Control Officers Association (CAPCOA 2021).

Operational Emissions

Long-term emissions relate to area sources, energy use, solid waste, water use, and transportation. Operational emissions for the project were estimated using CalEEMod and compared to adjusted BAAQMD efficiency thresholds. Since the project's construction timeframe and project details are available, adjustments to the CalEEMod inputs were implemented as described below. This analysis compares the net new GHG emissions associated with the proposed project to the BAAQMD bright-line threshold of 660 by subtracting operational GHG emissions associated with existing development to be removed on site from operational GHG emissions associated with new proposed development on site.

AREA SOURCE EMISSIONS

Emissions associated with area sources, including hearths and woodstoves, consumer products, landscape maintenance, and architectural coating were calculated in CalEEMod and use standard emission rates from CARB, USEPA, and emission factor values provided by the local air district (CAPCOA 2021). Pursuant to BAAQMD Regulation 8 Rule 3, volatile organic compound (VOC) limits for non-flat coatings and traffic marking coatings were used in this analysis.

ENERGY USE EMISSIONS

Emissions from energy use include electricity and natural gas use. The emissions factors for natural gas combustion are based on USEPA's AP-42 (*Compilation of Air Pollutant Emissions Factors*) and California Climate Action Registry General Reporting Protocol (2009). Electricity emissions are calculated by multiplying the energy use times the carbon intensity of the utility district per kilowatt-hour (kWh; CAPCOA Software 2021). The electricity consumption values in CalEEMod include the CEC-sponsored California Commercial End Use Survey and Residential Appliance Saturation Survey studies. CalEEMod currently incorporates California's 2019 Title 24 building energy efficiency standards.

City of Palo Alto Utilities (CPAU), the energy provider for the project, has provided carbon-neutral electricity since 2013. Since CPAU would be the default electricity provider, the company's specific energy intensity factors (i.e., the amount of CO₂, CH₄, and N₂O per kWh) were used in the calculations of GHG emissions. Pursuant to SB 100, the statewide Renewable Portfolio Standard (RPS) program requires electricity providers to increase procurement from eligible renewable energy sources to 60 percent by 2030, which CPAU is currently complying with.

In accordance with Section 150.1(c)(14) of the 2019 Building Energy Efficiency Standards, the project would be required to install solar photovoltaic (PV) systems on all buildings equal to the expected electricity usage. Therefore, CalEEMod included the assumption that all structures would include PV systems. Additionally, pursuant to the City's All-Electric Ordinance and the 2019 California State Energy Standards, Title 24 Part 6, the project would include an all-electric design and would not

utilize natural gas. To account for the increased electricity usage that would occur in all-electric units, it was assumed that all of the natural gas estimated for the project in the GHG modeling would instead be supplied by electricity.

SOLID WASTE EMISSIONS

GHG emissions from waste generation were also calculated in CalEEMod and are based on the IPCC's methods for quantifying GHG emissions from solid waste using the degradable organic content of waste (CAPCOA 2021). Waste disposal rates by land use and overall composition of municipal solid waste in California was primarily based on data provided by CalRecycle.

WATER AND WASTEWATER USE EMISSIONS

GHG emissions from water and wastewater usage calculated in CalEEMod were based on the electricity intensity from the CEC's 2006 Refining Estimates of Water-Related Energy Use in California using the average values for northern and southern California. A 20 percent reduction in indoor potable water use was incorporated in the model in accordance with CALGreen standards.

MOBILE SOURCE EMISSIONS

Mobile source emissions are generated by the increase in vehicle trips to and from the project site associated with operation of onsite development. The daily trip rate of 7.20 for the project was calculated using the transportation analysis provided by W-Trans (Appendix H), where the daily trip number of 655 trips was divided by the number of housing units (91 units). Mobile emissions also assumed 2030 fleet mixes and emission factors, as this is the year in which the project's development is analyzed against GHG reduction goals.

c. Project Impacts and Mitigation Measures

Threshold 1: Would the project generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment?

Impact GHG-1 THE PROPOSED PROJECT WOULD GENERATE GHG EMISSIONS BUT WOULD NOT EXCEED THE INTERPOLATED SIGNIFICANCE THRESHOLD OF 660 MT CO₂E PER YEAR. THIS IMPACT WOULD BE LESS THAN SIGNIFICANT.

Construction Emissions

Emissions generated by construction of the project are an estimated 546 MT of CO₂e. However, as the BAAQMD does not have a recommended threshold for construction-related GHG emissions, emissions associated with construction are not included in Table 4.4-2 nor compared to BAAQMD significance thresholds.

Operational Indirect and Stationary Direct Emissions

Long-term emissions relate to area sources, energy use, solid waste, water use, and transportation. Each of the operational sources of emissions is discussed further below.

Table 4.4-2 shows the estimated annual operational GHG emissions associated with the project and subtracts the operational GHG emissions associated with existing structures to be removed on site.

Table 4.4-2 Combined Annual Emissions of Greenhouse Gases

Emission Source	Annual Emissions (MTCO ₂ e)
Proposed Project	
Project Operational	
Area	1
Energy	0
Mobile	363
Solid Waste	21
Water	3
Total Emissions from Proposed Project	388
Existing Uses to be Removed	
Existing Operational	
Area	(<1)
Energy	(2)
Mobile	(32)
Solid Waste	(5)
Water	(<1)
Total Emissions from Existing Uses to be Removed	(40)
Total Emissions from the Proposed Project (Proposed Project minus Existing Uses to be Removed)	377
Interpolated BAAQMD Threshold	660
Exceed Threshold?	No

Source: Table 2.2 in GHG CalEEMod annual worksheets, see Appendix E for calculations and for GHG emission factor assumptions.

Notes:

() denotes subtraction

As shown in Table 4.4-2, the proposed project would result in total emissions of approximately 388 MT CO₂e per year. The net increase in GHG emissions from the existing site use would be approximately 377 MT CO₂e per year. Therefore, the proposed project would not exceed the interpolated BAAQMD significance threshold of 660 MT of CO₂e per year and would not generate a substantial increase in GHG emissions or conflict with SB 32. This impact would be less than significant.

Mitigation Measures

No mitigation measures would be required.

Threshold 2: Would the project conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases?

Impact GHG-2 THE PROPOSED PROJECT WOULD BE GENERALLY CONSISTENT WITH THE APPLICABLE GOALS, POLICIES, AND STRATEGIES IN PLAN BAY AREA 2050, THE CITY OF PALO ALTO S/CAP, AND THE 2030 COMPREHENSIVE PLAN, AS WELL AS STATE LEGISLATION (SB 32). THIS IMPACT WOULD BE LESS THAN SIGNIFICANT.

Plan Bay Area 2050

The project would result in a potentially significant impact if it would obstruct the implementation of the Plan Bay Area 2050. Table 4.4-3 provides an evaluation of project consistency with applicable GHG key strategies in Plan Bay Area 2050.

Table 4.4-3 Project Consistency with Plan Bay Area 2050

Measure	Project Consistency
T8. Build a Complete Streets network. Enhance streets to promote walking, biking and other micro-mobility through sidewalk improvements, car-free slow streets, and 10,000 miles of bike lanes or multi-use paths.	Consistent. The project would provide pedestrian and bicycle access to the proposed building via new drive aisles between buildings. The project would also include 101 bicycle parking spaces, with 91 long-term spaces located in residential garages and 10 short-term spaces located at-grade. The project site is located adjacent to a Class II bicycle lane on Park Boulevard and residents would also be able to utilize pedestrian connections such as sidewalks, crosswalks, and curb ramps in order to access transit options.
EN4. Maintain urban growth boundaries. Using urban growth boundaries and other existing environmental protections, focus new development within the existing urban footprint or areas otherwise suitable for growth, as established by local jurisdictions.	Consistent. The project would maintain urban growth boundaries through infill development on a developed site.
EN8. Expand clean vehicle initiatives. Expand investments in clean vehicles, including more fuel-efficient vehicles and electric vehicle subsidies and chargers.	Consistent. The project would include an EV charger for each residential unit and one EV charging guest parking space as well as 101 bicycle parking spaces (91 in garage and 10 surface).

Source: ABAG 2021

City of Palo Alto S/CAP

The project would result in a potentially significant impact if it would obstruct the implementation of the S/CAP. Table 4.4-4 provides an evaluation of project consistency with applicable GHG key actions in the S/CAP.

Table 4.4-4 Project Consistency with S/CAP

Measure	Project Consistency
C3. Complete study to identify any additional Energy, EV, or Mobility key actions needed to achieve 80% reduction in greenhouse gas emissions from 1990 levels by 2030, such as electrification of additional multi-family or commercial end uses, greater electrification of vehicles, or other emissions reduction actions not already identified in this Plan. If legally feasible and approved by community action after a stakeholder design process, implement these additional key actions.	Consistent. The project would include an EV charger for each residential unit and one EV charging guest parking space.
E1. Launch comprehensive residential program services and incentives to promote voluntary electrification of water heating, space heating, cooking, clothes drying, and other appliances that use natural gas, as well as single-family residence panel upgrades and EV charger installation (also see Key Action EV-2, Multi-family EV Charging program). Services may include technical assistance, vetted contractor lists, on-bill financing, and/or direct install services.	Consistent. The project would include an EV charger for each residential unit and one EV charging guest parking space. The project would also include energy efficient appliances and lighting, as well as water efficient fixtures and irrigation. Additionally, the project would be all-electric pursuant to the City's All-Electric Mandate and would not utilize natural gas.
M5. Expand bicycle and pedestrian infrastructure.	Consistent. The project would provide pedestrian and bicycle access to the proposed building via new drive aisles between buildings. The project site is located adjacent to a Class II bicycle lane on Park Boulevard and residents would also be able to utilize pedestrian connections such as sidewalks, crosswalks, and curb ramps in order to access transit options. The project would also include 101 bicycle parking spaces, with 91 long-term spaces located in residential garages and 10 short-term spaces located at-grade.
EV2. Enhance multi-family and workplace EV charging program as needed to create high levels of participation and expand it to include bike facility evaluation and alternative commute promotion. Evaluate financing and direct installation program features.	Consistent. The project would include an EV charger in every unit and one EV charging guest parking space, as well as 101 bicycle parking spaces (91 in garage and 10 surface).

Source: City of Palo Alto 2021c

City of Palo Alto 2030 Comprehensive Plan

The project would result in a potentially significant impact if it would obstruct the implementation of the goals and policies within the 2030 Comprehensive Plan. Table 4.4-4 provides an evaluation of project consistency with applicable GHG goals and policies.

Table 4.4-5 Project Consistency with the City of Palo Alto 2030 Comprehensive Plan

Measure	Project Consistency
Transportation Element	
Policy T-1.3 Reduce GHG and pollutant emissions associated with transportation by reducing VMT and per-mile emissions through increasing transit options, supporting biking and walking, and the use of zero-emission vehicle technologies to meet City and State goals for GHG reductions by 2030.	Consistent. The project itself would not expand transit options; however, it is within a 0.5 to 0.6 mile walk to multiple bus stops serviced by the VTA and Dumbarton Express (Express 101, Express 102, Express 103, Bus Route 22, Bus Route 89, Bus Route 522, Rapid 522), as well as approximately 0.4 miles southeast of the California Avenue Train Station. The project site is located adjacent to a Class II bicycle lane on Park Boulevard and residents would also be able to utilize pedestrian connections such as sidewalks, crosswalks, and curb ramps in order to access transit options. The project would place residences in a transit-accessible area, improving the viability of transit as an option for travel to services in Palo Alto. The project site is also designed to promote walking and bicycling and would include 101 bicycle parking spaces (91 in garage and 10 surface).
Policy T-1.4 Ensure that electric vehicle charging infrastructure, including infrastructure for charging e-bikes, is available citywide.	Consistent. The project would include an EV charger in every unit and one EV charging guest parking space.
Policy T-1.16 Promote personal transportation vehicles an alternative to cars (e.g. bicycles, skateboards, roller blades) to get to work, school, shopping, recreational facilities and transit stops.	Consistent. The project would be located within a 0.5 to 0.6 mile walk to multiple bus stops serviced by the VTA and Dumbarton Express (Express 101, Express 102, Express 103, Bus Route 22, Bus Route 89, Bus Route 522, Rapid 522), as well as approximately 0.4 miles southeast of the California Avenue Train Station. Since the project site is located in proximity to bus stops and the California Avenue Train Station, the project would promote usage of alternative forms of transportation and reduce reliance on single-occupancy vehicles.
Policy T-1.17 Require new office, commercial and multi-family residential developments to provide improvements that improve bicycle and pedestrian connectivity as called for in the 2012 Palo Alto Bicycle + Pedestrian Transportation Plan.	Consistent. The project applicant would contribute to the City's development impact fees, including to funds that would support bicycle and pedestrian improvements in the City. The project would also promote bicycling and walkability by providing bicycle and pedestrian access to proposed buildings via new private streets between buildings.
Natural Environment Element	
Policy N-7.4 Maximize the conservation and efficient use of energy in new and existing residences and other buildings in Palo Alto.	Consistent. The project would be required to comply with the Palo Alto Green Building Ordinance and be 10 percent more energy efficient than the base CALGreen code requirements, including providing energy efficient appliances and lighting and water efficient fixtures and irrigation. The project would be all-electric pursuant to the City's All-Electric Mandate and would include PV systems to generate an amount of electricity equal to expected electricity usage pursuant to the 2019 Building Energy Efficiency Standards.
Policy N-7.7 Explore a variety of cost-effective ways to reduce natural gas usage in existing and new buildings in Palo Alto in order to reduce associated greenhouse gas emissions.	Consistent. The project would be 10 percent more energy efficient than the base CALGreen code requirements subject to the Palo Alto Green Building Ordinance. Additionally, the project would be all-electric pursuant to

Measure	Project Consistency
	the City's All-Electric Mandate and would include PV systems to generate an amount of electricity equal to expected electricity usage pursuant to the 2019 Building Energy Efficiency Standards, and therefore would reduce GHG emissions.
Policy N-7.8 Support opportunities to maximize energy recovery from organic materials such as food scraps, yard trimmings and residual solids from sewage treatment.	Consistent. The project would be required to comply with SB 1383 which aims to reduce organic waste disposal by 75 percent by 2025.
Source: City of Palo Alto 2017	

State Plans and Policies

The principal state plans and policies are AB 32, the California Global Warming Solutions Act of 2006, and the subsequent legislation, SB 32. The quantitative goal of AB 32 is to reduce GHG emissions to 1990 levels by 2020 and the goal of SB 32 is to reduce GHG emissions to 40 percent below 1990 levels by 2030. Pursuant to the SB 32 goal, the 2017 Scoping Plan was created to outline goals and measures for the state to achieve the reductions. The 2017 Scoping Plan's strategies that are applicable to the project include reducing fossil fuel use, energy demand, and VMT, as well as increasing water conservation. The project would comply with the latest Title 24 Green Building Code and Building Efficiency Energy Standards and provide EV parking spaces and charging equipment. In addition, the project would be served by City of Palo Alto Utilities Department which meets over 50 percent of Palo Alto's electricity demand with renewable energy sources and has provided 100 percent carbon neutral electricity since 2013. The project would also be all-electric pursuant to the City's All-Electric Mandate and would include solar PV systems to generate an amount of electricity equal to expected electricity usage pursuant to the 2019 Building Energy Efficiency Standards. Plans and regulations in support of strategies in the 2017 Scoping Plan such as the Low Carbon Fuel Standard and regulations requiring an increasing fraction of electricity to be generated from renewable sources, are being implemented at the statewide level; as such, compliance at a project level would occur as implementation continues statewide.

As shown in the tables above, the project would generally be consistent with applicable GHG goals, policies, and strategies in the regional plans such as Plan Bay Area 2050, as well as local plans such as the City of Palo Alto S/CAP and the 2030 Comprehensive Plan. Therefore, the project would not conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing GHG emissions and this impact would be less than significant.

Mitigation Measures

No mitigation measures would be required.

d. Cumulative Impacts

As discussed in Section 3, *Environmental Setting*, cumulative development in Palo Alto would include residential, commercial, and mixed-use development projects. Each of the proposed developments would generate GHG emissions from vehicle trips, electrical and water use, and other sources. The analysis of GHG emissions is cumulative in nature, as emissions affect the accumulation of GHGs in the earth's atmosphere. Projects that fall below provided thresholds are considered to have a less than significant impact, both individually and cumulatively. The proposed project would not exceed the interpolated GHG significance thresholds that is based on the 2030 target set by SB

32 and would be consistent with applicable GHG reduction plans. Therefore, cumulative impacts would be less than significant. Therefore, the project would not result in a cumulatively considerable impact.

This page intentionally left blank.

4.5 Hazards and Hazardous Materials

This section evaluates the proposed project's potential impacts related to hazardous materials in soil and groundwater, and other hazards. The information presented in this section is primarily based on a Phase I Environmental Site Assessment (ESA) report prepared by PES Environmental, Inc. (PES) dated November 17, 2020, and a Soil Vapor Investigation Report by PES dated February 8, 2021 (PES 2020, 2021), which are included in Appendix F of this EIR. This section is also based on information obtained from review of public records and databases identified throughout the section.

4.5.1 Setting

a. Regulatory Setting

Hazardous Materials and Waste

The term "hazardous material" is defined in the State of California's Health and Safety Code (HSC), Chapter 6.95, Section 25501(n)(1) as:

"[Any material] that, because of its quantity, concentration, or physical or chemical characteristics, poses a significant present or potential hazard to human health and safety or to the environment if released into the workplace or the environment."

"Hazardous materials" include, but are not limited to, hazardous substances, hazardous waste, and any material that a handler or the administering agency has a reasonable basis for believing that it would be injurious to the health and safety of persons or harmful to the environment if released into the workplace or the environment.

Hazardous waste is hazardous material generated, intentionally or unintentionally, as a byproduct of some process or condition. Hazardous wastes are defined in California HSC Section 25141(b) as wastes that:

"...because of their quantity, concentration, or physical, chemical, or infectious characteristics, [may either] cause, or significantly contribute to an increase in mortality or an increase in [serious] illness [or] pose a substantial present or potential hazard to human health or the environment due to factors including, but not limited to, carcinogenicity, acute toxicity, chronic toxicity, bioaccumulative properties, or persistence in the environment, when improperly treated, stored, transported, disposed of, or otherwise managed."

According to the U.S. Environmental Protection Agency (USEPA), waste may be considered hazardous under the Resource Conservation and Recovery Act (RCRA, the primary Federal hazardous materials law) if it is specifically listed as known hazardous waste or if it meets the one or more of the following characteristics of a hazardous waste:

- **Toxicity.** Poisonous, harmful when ingested or absorbed
- **Ignitability.** Capable of being ignited by open flame, liquids with flash points¹ below 60 degrees Celsius, non-liquids that cause fire through specific conditions, ignitable compressed gases, and oxidizers

¹ Flash point is the lowest temperature at which the vapors of a volatile combustible substance ignite in the air when exposed to flame.

- **Corrosivity.** Capable of corroding other materials, aqueous wastes with a pH of 2 or less or greater than or equal to 12.5
- **Reactivity.** May be unstable under normal conditions, may react with water, may give off toxic gases, or may be capable of detonation or explosion under normal conditions or when heated

Waste which meets certain criteria included in 40 CFR 261.11 (a) (2), including being ‘fatal to humans in low doses’ or having specified lethal dose levels in laboratory rats or rabbits is designated as ‘acute hazardous waste’ under RCRA; Sections 261.31 and 261.33 set out lists of substances currently classified by USEPA as acutely hazardous.

Federal Regulations

The USEPA is the lead agency responsible for enforcing federal regulations that affect public health or the environment. The primary federal laws and regulations include the RCRA of 1976 and the Hazardous and Solid Waste Amendments enacted in 1984, the Comprehensive Environmental Response, Compensation and Liability Act of 1980 (CERCLA), and the Superfund Act and Reauthorization Act of 1986 (SARA). Federal statutes pertaining to hazardous materials and wastes are contained in the Code of Federal Regulations (CFR) Title 40 – Protection of the Environment. The Occupational Safety and Health Administration (OSHA) regulates the use of hazardous materials, including hazardous building materials, insofar as these affect worker safety through a delegated state program. Furthermore, at the federal level, the Department of Transportation (DOT) regulates transportation of hazardous materials.

Resource Conservation and Recovery Act of 1974

The RCRA was enacted in 1974 to provide a general framework for the national hazardous waste management system, including the determination of whether hazardous wastes are being generated, techniques for tracking wastes to eventual disposal, and the design and permitting of hazardous waste management facilities.

RCRA Subtitle C regulates the generation, transportation, treatment, storage, and disposal of hazardous waste by Large-Quantity Generators (1,000 kilograms per month or more) through comprehensive life cycle or “cradle to grave” tracking requirements. The requirements include maintaining inspection logs of hazardous waste storage locations, records of quantities being generated and stored, and manifests of pick-ups and deliveries to licensed treatment/storage/disposal facilities. RCRA also identifies standards for treatment, storage, and disposal, which are codified in 40 CFR 260.

The Hazardous and Solid Waste Amendments were enacted in 1984 to better address hazardous waste; this amendment began the process of eliminating land disposal as the principal hazardous waste disposal method.

Hazardous Materials Transportation Act

The transportation of hazardous materials is regulated by the Hazardous Materials Transportation Act (49 CFR § 101 et seq.), which is administered by the Office of Hazardous Materials Safety within the Pipeline and Hazardous Materials Administration (PHMA) of U.S. DOT. The Hazardous Materials Transportation Act governs the safe transportation of hazardous materials by all modes. The DOT regulations that govern the transportation of hazardous materials are applicable to any person who transports, ships, or causes to be transported or shipped hazardous materials, or who is involved in any way with the manufacture or testing of hazardous materials packaging or containers. The DOT

regulations govern every aspect of the movement of hazardous materials including packaging, handling, labeling, marking, placarding, operational standards, and highway routing.

Federal Disaster Mitigation Act

The Disaster Mitigation Act of 2000 provided a new set of mitigation plan requirements that encourage state and local jurisdictions to coordinate disaster mitigation planning and implementation. States are encouraged to complete a “Standard” or an “Enhanced” Hazard Mitigation Plan. “Enhanced” plans demonstrate increased coordination of mitigation activities at the state level and, if completed and approved, increase the amount of funding through the Hazard Mitigation Grant Program. California’s Hazard Mitigation Plan (HMP) is an ‘Enhanced’ Plan.

State Regulations

The California Environmental Protection Agency’s (CalEPA) Department of Toxic Substances Control (DTSC) is the primary state agency governing the storage, transportation, and disposal of hazardous wastes. DTSC is authorized by the USEPA to enforce and implement federal hazardous materials laws and regulations. Regulation of hazardous material use and transport also occurs under a variety of state agencies and authorities, many of whom are partners in the CalEPA-administered Certified Unified Program Agency (CUPA) program discussed below. There are many state statutes and regulations governing hazardous materials and wastes, and they are contained within many different parts of the States’ codes, therefore only regulations relevant to this analysis are considered below.

California Unified Program Administration

The Unified Program consolidates, coordinates, and makes consistent the administrative requirements, permits, inspections, and enforcement activities of six environmental and emergency response programs, as listed below:

- Hazardous Materials Release Response Plans and Inventories (Business Plans)
- CalARP Program
- Underground Storage Tank (UST) Program
- Aboveground Petroleum Storage Act Program
- Hazardous Waste Generator and Onsite Hazardous Waste Treatment (tiered permitting) Programs
- California Uniform Fire Code: Hazardous Material Management Plans and Hazardous Material Inventory Statements

The state agency partners involved in the Unified Program have the responsibility of setting program element standards, working with CalEPA on ensuring program consistency, and providing technical assistance to the CUPA. The following state agencies are involved with the Unified Program:

- CalEPA is directly responsible for coordinating the administration of the Unified Program. The Secretary of the CalEPA certifies CUPAs
- DTSC provides technical assistance and evaluation for the hazardous waste generator program including onsite treatment (tiered permitting)

- The Office of Emergency Services is responsible for providing technical assistance and evaluation of the Hazardous Material Release Response Plan (Business Plan) Program and the CalARP Programs
- The Office of the State Fire Marshal is responsible for ensuring the implementation of the Hazardous Material Management Plans and the Hazardous Material Inventory Statement Programs. These programs tie in closely with the Business Plan Program.
- The State Water Resource Control Board provides technical assistance and evaluation for the UST program in addition to handling the oversight and enforcement for the aboveground storage tank program

The Hazardous Materials Compliance Division (HMCD) within the Santa Clara County Department of Environmental Health (SCDEH) is the CUPA for Santa Clara County. The HMCD is responsible for implementing the federal and state laws and regulations pertaining to the handling of hazardous wastes and hazardous materials. In Palo Alto, the Palo Alto Fire Department's Hazardous Materials Division is the Participating Agency administering CUPA implementation within the City for above-grade storage.

California Cortese List, Government Code 65962.5

Government Code Section 65962.5 requires CalEPA to develop and update the Hazardous Waste and Substance Sites (Cortese) List. The Cortese List is a planning document used by state and local agencies and developers to comply with California Environmental Quality Act (CEQA) requirements in providing information about the location of hazardous materials release sites.

California Accidental Release Prevention Program

The California Accidental Release Prevention (CalARP) Program addresses facilities that contain specified hazardous materials, known as "regulated substances," that, if involved in an accidental release, could result in adverse off-site consequences. The CalARP Program defines regulated substances as chemicals that pose a threat to public health and safety or the environment because they are highly toxic, flammable, or explosive.

California Hazardous Materials Release Response Plans and Inventory Law

The California Hazardous Materials Release Response Plans and Inventory Law of 1985 (Business Plan Act) requires that any business that handles hazardous materials prepare a Business Plan. That Business Plan must include details of the facility and business conducted at the project site, an inventory of hazardous materials that are handled or stored on site, an emergency response plan and a training program for safety and emergency response for new employees, with annual refresher courses.

California Fire Code

The California Fire Code is Chapter 9 of California Code of Regulations (CCR) Title 24. It is the primary means for authorizing and enforcing procedures and mechanisms to ensure the safe handling and storage of any substance that may pose a threat to public health and safety. The California Fire Code regulates the use, handling, and storage requirements for hazardous materials at fixed facilities. The California Fire Code and the California Building Code use a hazard classification system to determine what protective measures are required to protect fire and life safety. These measures may include construction standards, separations from property lines, and specialized

equipment. To ensure that these safety measures are met, the California Fire Code employs a permit system based on hazard classification.

California Health and Safety Code

California HSC section 25150 requires DTSC to adopt, and revise when appropriate, standards and regulations for the management of hazardous wastes to protect against hazards to the public health, domestic livestock, wildlife, or the environment. In adopting or revising standards and regulations pursuant to this chapter, the department shall, insofar as practicable, make the standards and regulations conform with corresponding regulations adopted by the USEPA pursuant to the federal act. This section does not prohibit the department from adopting standards and regulations that are more stringent or more extensive than federal regulations.

CalEPA, in cooperation with the DTSC and the California State Water Resources Control Board (SWRCB) and the Office of Environmental Health Hazard Assessment, publishes a list of screening numbers for select contaminants. Screening numbers are defined as the concentration of a contaminant published by CalEPA as an advisory number. In determining screening numbers, CalEPA considers the toxicology of the contaminant, risk assessments prepared by federal or state agencies, epidemiological studies, risk assessments or other evaluations of the contaminant during remediation of a site, and screening numbers that have been published by other agencies.

In January 2018, the DTSC's Human and Ecological Risk Office issued Human Health Risk Assessment Note Number 3. The document lists DTSC-modified screening levels (DTSC-SL) for select compounds in soil, tap water, and air for use in the human health risk assessment process at hazardous waste sites and permitted facilities, and the DTSC-SLs were last updated in 2020.

California Code of Regulations, Title 8

CCR Title 8 contains the General Industry Safety Orders of the state regulations. Article 4 addresses dusts, fumes, mists, vapors, and gasses. Article 4, Section 1529 deals with asbestos and asbestos-containing materials (ACM) and Section 1532.1 addresses lead and lead-based paint (LBP). Both Sections set out requirements for employer monitoring of employee exposure to these materials as well as regulations on worker personal protective equipment (PPE), disposal of wastes, medical examinations of exposed workers, and action levels and exposure limits for ACM and LBP dusts. Title 8 is administered by the California Occupational Safety and Health Administration (Cal/OSHA).

California Public Resources Code 21151.4

Pursuant to Public Resources Code Section 21151.4, projects that can be reasonably anticipated to produce hazardous air emissions or handle extremely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school must consult with the potentially affected school district and provide written notification not less than 30 days prior to the proposed certification or adoption of an environmental document. Where a school district proposes property acquisition or the construction of a school, the environmental document must address existing environmental hazards, and written findings must be prepared regarding existing pollutant sources.

Regional and Local Regulations

Administration and enforcement of the major environmental programs were transferred to local agencies as CUPAs beginning in 1996. The purpose of this was to simplify environmental reporting

by reducing the number of regulatory agency contacts a facility must maintain and requiring the use of more standardized forms and reports.

Bay Area Air Quality Management District Regulation 11, Rule 2

The Bay Area Air Quality Management District (BAAQMD) regulates demolition and renovation operations involving ACM through Rule 2, which applies to any planned renovation that involves 100 square feet, 100 linear feet, or 35 cubic feet or more of ACM, as well as to all demolitions regardless of ACM content. The requirements include a noticing period, the conducting of a pre-demolition survey for ACM materials by a certified inspector, and a general prohibition on demolition until ACM has been abated and removed from the location and requires that abatement be conducted by persons with specific asbestos certifications (primarily Asbestos Hazard Emergency Response Act [AHERA] certification).

Santa Clara County Department of Environmental Health

The HMCD within the SCDEH is the CUPA for Santa Clara County and is responsible for implementing the federal and state laws and regulations pertaining to the handling of hazardous wastes and hazardous materials within the County, as well as the Santa Clara County Hazardous Materials Management Program. Various local agencies in incorporated areas are Participating Agencies and act as the CUPA administrators within their respective jurisdictions.

City of Palo Alto Hazardous Materials Division

The Fire Prevention Bureau of the Palo Alto Fire Department (PAFD) is the Participating Agency administering CUPA implementation within the City. It is responsible for regulating the storage, use, treatment, and disposal of hazardous materials and wastes in Palo Alto and for administering the Business Plan program and aboveground storage tanks; responsibility for USTs was transferred to the HMCD in 2009. The Bureau also handles fire code inspections, including inspections related to hazardous material storage (PAFD 2022).

Countywide Local Hazards Mitigation Plan

The Santa Clara County Countywide Local Hazard Mitigation Plan (LHMP) is a multi-jurisdictional plan that integrates hazard mitigation across the County and is intended to prepare the community for potential life-threatening emergencies, such as fire, flood, and earthquakes. The LHMP is essentially a “road map” for action involving hazard mitigation and emergency preparedness. The City of Palo Alto manages the Palo Alto Annex to the LHMP, which was adopted by the City Council on October 16, 2017. The Annex assigns categories of risks a Risk Rating and groups them into priorities; earthquake and flood are High priorities, Drought is Low, and there is considered to be No risk of landslide (City of Palo Alto 2017a).

City of Palo Alto Emergency Operations Plan

The City of Palo Alto Office of Emergency Services (OES), led by the Director of Emergency Services, is responsible for operation of the Emergency Operations Center and for implementation and updating of the City’s Emergency Operations Plan and Continuity of Operations Plan, and also participates in a mutual assistance relationship with San Mateo County Sheriffs OES due to the City’s proximity to the San Mateo County border and the continuous urban nature of the area.

City of Palo Alto Dewatering Regulations

The City of Palo Alto incorporates numerous requirements related to groundwater dewatering in Chapter 16.28 of its Municipal Code that were first promulgated in 2016. Although the majority of the regulations deal with ensuring groundwater is not wasted or altering the groundwater flow or direction, the regulations also deal with the treatment of contaminated groundwater such as that potentially existing beneath the project site. The regulations are administered by the City's Public Works Engineering Department and include requirements for a Geotechnical Report and Hydrogeological Report and sets time limits on dewatering operations. The regulations specify that they do not supersede San Francisco Bay Regional Water Quality Control Board (SFBRWQCB) regulations regarding dewatering.

City of Palo Alto Comprehensive Plan

The City of Palo Alto's Comprehensive Plan 2030 Safety Element includes goals, policies, and programs to reduce the risk of death, injuries, and property damage in the city. Relevant goals and policies are listed below:

- Policy S-1.10.** Follow the guidelines in the Emergency Operations Plan and continue towards implementing the four phases of Emergency Management: mitigation/prevention, preparedness, response, and recovery.
- Program S1.10.3.** Implement the mitigation strategies and guidelines provided by the [LHMP], including those that address evolving hazards resulting from climate change.
- Program S1.13.4.** Enhance the safety of City-owned natural gas pipeline operations. Work with customers, public safety officials and industry leaders to ensure the safe delivery of natural gas throughout the service area. Provide safety information to all residents on City-owned natural gas distribution pipelines.
- Policy S-2.1.** Incorporate the [LHMP] ...into the Safety element. In the event of any conflict between the provisions of the LHMP and any other provision of the Safety Element, the LHMP shall control.
- Policy S-3.2.** Continue working with appropriate agencies to identify and clean up hazardous waste sites and contaminated groundwater.
- Policy S-3.3.** Support public health by requiring as part of development review, property owners and private entities to disclose the presence of contaminated soil or groundwater, identify potential health impacts, prevent vapor intrusion, and remediate contamination.
- Policy S-3.4.** Support public agency policies, regulations, legislation, and programs that implement Santa Clara County's Hazardous Materials Management Program.
- Policy S-3.5.** Protect City authority for the approval or denial of proposed commercial hazardous waste treatment, storage, or disposal facilities in the city. Continue to support the concept of "fair share" agreements between counties in the siting of such facilities.
- Policy S-3.6.** Work with the appropriate agencies, including Caltrain, to decrease the risks associated with rail infrastructure in Palo Alto, including the movement of hazardous materials through the city and the dangers of passenger trains in a fully developed, populated environment.

b. Project Site Setting

As detailed in Section 4.2, *Cultural Resources*, the project site was formerly used as a cannery until it closed in 1949. After closure of the cannery, the site had a series of shipping, packing, and distribution plants as well as retail and Research and Development (R&D) uses. According to the Phase I ESA, other uses on the site included manufacturing and food processing and the Palo Alto Foundry. In addition, railroad spurs were formerly located on the northwestern portion of the project site from at least sometime between 1930 and 1939 until they were removed in approximately 1964. The site is currently occupied by R&D and warehouse uses at 200/340 Portage Avenue, vacant retail space, and a commercial recreation use at 3040 Park Boulevard.

The area of proposed development comprises a portion of a 4.86-acre parcel located southeast of the intersection of Park Boulevard and Olive Avenue. The area of proposed development only includes the northern portion of the two-story commercial building at 200 Portage Avenue as well as the one-story commercial building at 3040 Park Boulevard.

Previous Investigations and Remediation Activities

Numerous prior environmental investigations and cleanup activities have occurred on or near the project site. The locations of features identified in the investigations are illustrated in Figure 4.5-1.

1992 Kennedy/Jenks Phase I ESA, Environ Groundwater Investigation, and Kennedy/Jenks Groundwater Investigation.

A 1992 Phase I ESA conducted by Kennedy/Jenks Consultants examined the right-of-way for the former Southern Pacific Railroad spur that ran along the western edge of the project site, was removed between 1985 and 1990, and was covered with asphalt for conversion to parking. The investigation did not uncover evidence of potential contamination often associated with railroad tracks, including heavy metals or former curve oiling mechanisms or oil storage. Environ Corporation conducted further investigation including groundwater sampling at depths of 22 to 48 feet below ground surface (bgs) and analysis for volatile organic compounds (VOCs). Kennedy/Jenks also conducted groundwater sampling along the right-of-way. Both investigations detected VOCs such as TCE (trichloroethene) and dichloromethane, common industrial solvents and frequent sources of soil and soil vapor contamination. Both investigations concluded the source was diffusion of vapors through the capillary fringe of the groundwater and not an indication of a surface spill. Additionally, Environ opined that the VOC detections in groundwater may be associated with the regional California-Olive-Emerson (COE) chlorinated solvent groundwater plume known to underly the entire El Camino Center area, including the project site. (Further discussion of the COE regional groundwater impact is below.)

2002 Former Mercer Processing Investigation and Remediation.

Mercer Processing occupied the tenant space at 230 Portage Avenue, located approximately 300 feet to the south of the area of proposed development, from approximately 1989 to 1999 and conducted freeze-drying activities which involved the use of chlorinated solvents including TCE and 1,1-dichloro-1-fluoroethane (also known as Genesolv 2000 or Refrigerant 141b). During the Facility Closure Assessment process, soil sampling revealed elevated levels of TCE and various dichloroethenes, as well as other VOCs associated with freeze-drying operations, in the vicinity of the former refrigeration unit. Remediation via soil excavation was conducted in January 2002, and SFRWQCB deemed the cleanup complete, and the case was closed by SFRWQCB in a letter dated April 8, 2002 (SFRWQCB 2002, included in Appendix H of PES 2020).

Figure 4.5-1 Project Site and Hazardous Materials Features/Areas of Concern



2010 PES Phase I and Phase II Investigations

PES conducted a Phase I ESA for the entire El Camino Center (of which the project site is a part) in 2010, including 3201 and 3225 Ash Street, 200-382 Portage Avenue, 270 Lambert Avenue, and 3250 Park Boulevard. Soil sampling was also conducted for a Phase II investigation of the former onsite railroad spurs and the former onsite foundry location. The investigation noted several environmental issues in the area that were not on the proposed project site, including use and closure of several USTs in the southern parking lot area south of the proposed project site, as well as the regional COE chlorinated solvent groundwater plume. The UST closures and COE plume are discussed below.

In general, the investigations identified sporadic detections in soil, including arsenic above SFBRWQCB residential Environmental Screening Levels (ESLs) and naturally occurring background concentrations for arsenic in California soil in locations near the former railroad spurs, and petroleum hydrocarbons quantified as motor oil above ESLs in the general area. The investigations concluded that widespread environmental impacts were not identified, but that sporadic elevated concentrations of metals and hydrocarbons were present in the shallow soil throughout the area, consistent with the former uses of the property. Geophysical surveys in the locations of known former fuel dispensers did not uncover evidence of undocumented USTs or piping at that time.

2020-2021 PES Phase I and Phase II Investigations

PES conducted further environmental investigations of the El Camino Center in 2020 and 2021; the Phase I ESA dated November 17, 2020, covers the northern third of the El Camino Center, including 200-336 Portage Avenue, and the Soil Vapor Investigation Report dated February 8, 2021 covers the same area, which is approximately the area of the project site. The Phase I investigation noted many of the previously conducted investigations and cleanup activities and further identified the possibility of the presence of ACM and/or LBP in the property building to be demolished due to the age of the structure; it also noted that asbestos abatement and remediation had been conducted in the building previously.

The soil vapor sampling conducted for the 2021 investigation detected low concentrations of petroleum hydrocarbon-related VOCs throughout the study area and associated them with past hydrocarbon releases from the numerous removed upgradient UST tanks, former industrial uses of the property, and incidental leaks from the use of portions of the study area as parking. Benzene and ethylbenzene were detected in soil vapor at levels above their corresponding residential ESLs. In addition, TCE detections in soil vapor occurred primarily in the northwestern portion of the study area coincident with the regional COE plume (see below); concentrations appeared to increase with depth, which further supports the COE plume as the source of these detections.

Nearby UST Cases

An abandoned fuel oil vault was cleaned and abandoned-in-place under regulatory oversight in 1997 near the southern loading docks of the El Camino Center just southwest of the project site. Several former USTs were also removed from the vicinity of the former Dura-Bond facility immediately west of the proposed project site during 1989, undocumented USTs from the southern portion of the El Camino Center in 2011, and former USTs from immediately east of the project site in 2015, all under regulatory oversight. Along with the documented and undocumented USTs and fuel oil vault, hydrocarbon-affected soils were also excavated from around the former vault and the former USTs. These cases received regulatory case closure. The former vault was backfilled and covered with pavement. Soil and groundwater sampling conducted as part of the UST removals indicated that

residual petroleum hydrocarbons were being depleted by natural attenuation and there were no significant concentrations of VOCs identified in the soil or groundwater that were associated with the former USTs; sampling conducted for the 2015 UST removal indicated the presence of low levels of TCE and benzene associated with the regional COE plume.

Regional California-Olive-Emerson (COE) Plume

Groundwater contamination associated with a regional chlorinated solvent plume has been identified at the project site along with other nearby properties, primarily associated with hydrologically upgradient facilities including Hewlett-Packard (HP), Varian Associates, Eastman Kodak, and Dura-Bond facilities not related to the project site and under investigation since at least 1981, when leaking waste solvent USTs were first discovered by HP. Cleanup activities at these properties have included soil vapor extraction, groundwater extraction and treatment, and injection. There are several constituents of concern commingled in the regional groundwater plume, most notably TCE, which is the most widely distributed.

There are several active monitoring wells in the area, including in the proposed project site, which are sampled on a biannual basis as part of the ongoing investigation into the shallow groundwater plume. Several of the properties associated with the former HP and Varian facilities have land use restrictions in place due to the plume; however, there are no such restrictions in place for the proposed project site. Constituents from the plume also exist in deeper groundwater in a separate aquifer; however, the affected portion of that groundwater layer is not known to reach the proposed project site and monitoring of that aquifer on the project site was suspended in 2000. Detections at the monitoring wells on the project site have previously exceeded residential ESLs and the cleanup goals for TCE but have not been detected in the monitoring wells since 2011, although associated breakdown products continue to be detected.

Other Possible Environmental Issues

These environmental investigations also identified a set of other potential issues of environmental concern relating to the project site or the surrounding area. These include the existence of a historical UST at Say Ray Auto on Ash Street which is potentially upgradient from the project site and has no information regarding removal of the UST, another former UST at Star Graphics on Ash Street which was investigated in 1990 but also has no regulatory record of removal, and the overall lack of information regarding the use and storage of hazardous materials at the former foundry located on the project site.

Potential Regional Hazards

Landfills

There are no active or former landfill sites within two miles of the project site (CalRecycle 2022).

Oil and Gas Wells/Fields

According to the California Department of Conservation Well Finder mapping tool, the project site is not located within an oil/gas field and no oil wells are located within one-quarter mile of the project site. The nearest oil well is a plugged dry hole well located approximately 12 miles west of the project site near the City of Half Moon Bay (DOC 2022).

Hazardous Material Pipelines

According to the National Pipeline Mapping System (NPMS), no liquid hazardous material or natural gas pipelines are located within or adjacent to the project site. Natural gas pipelines run along the northern side of Alma Street approximately 350 feet north of the project site, and along the eastern side of Page Mill Road approximately 850 feet west of the project site. No pipeline-related accidents or incidents within one-half mile of the project site have been listed on the NPMS database (NPMS 2022).

Per- and Polyfluoroalkyl Substances

Review of the California 2019 Statewide Drinking Water System Quarterly Testing Results Public Map Viewer indicates that perfluorooctanoic acid (PFOA) and perfluorooctanesulfonic acid (PFOS) were detected in drinking water wells located within 10 miles of the project site and tested quarterly as part of a PFAS investigative order. None of these wells contain PFOA and PFOS at concentrations above their respective SWRCB notification levels. The nearest drinking water wells to the project site, located approximately 2 miles southeast of the project site, did not contain PFOA or PFOS at levels detectable above laboratory reporting limits (SWRCB 2022).

Other Research

Wildlands

As detailed in Section 4.9, *Effects Found not to be Significant*, the project site is not located within a Fire Hazard Severity Zone or within the Wildland-Urban Interface.

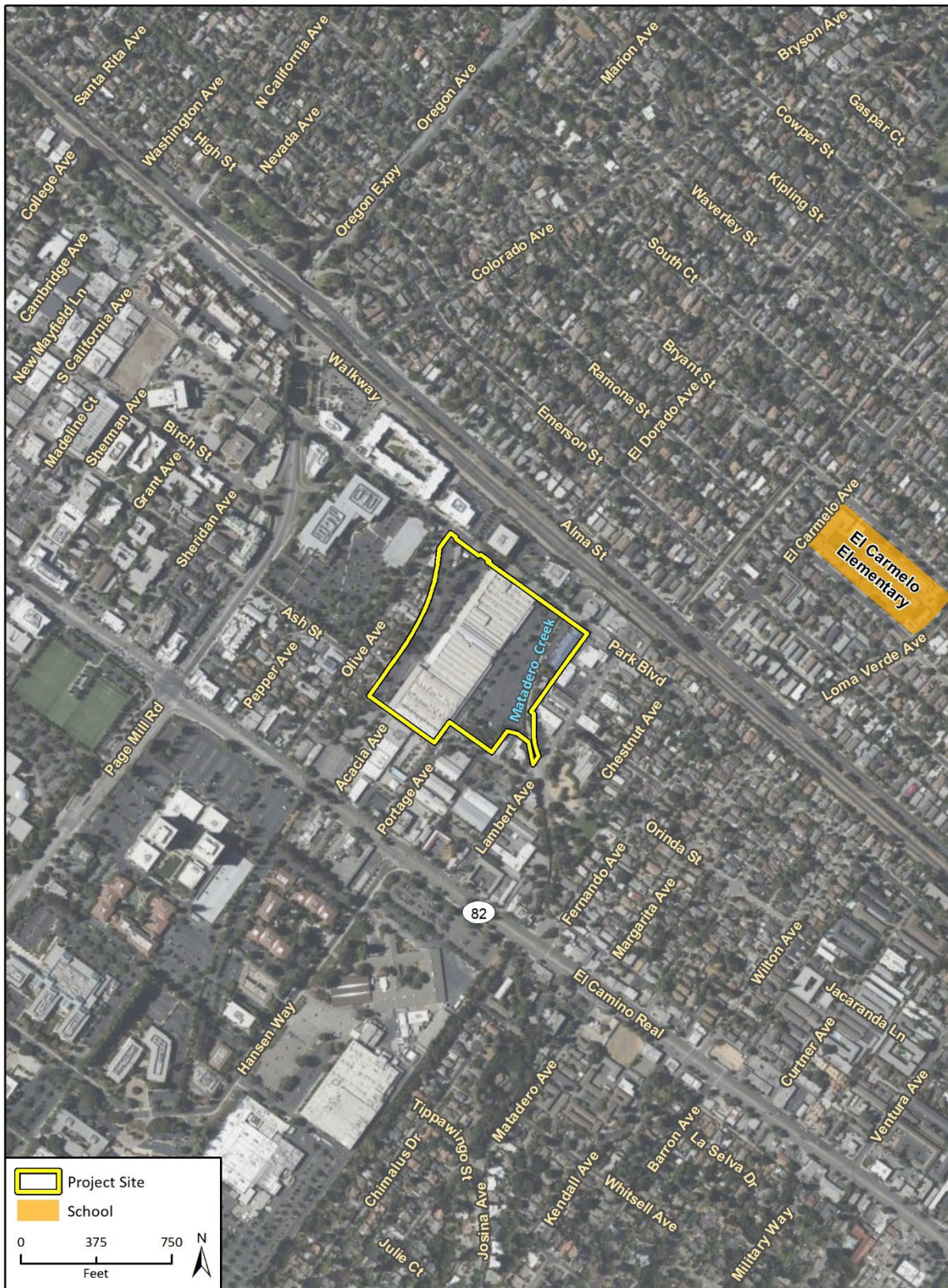
Airports

The project site is not located within an airport land use plan or within two miles of an airport. The nearest airport is Palo Alto Airport located approximately 2.4 miles northeast of the project site.

Educational Facilities

The El Carmelo Elementary School is located approximately 0.24 miles to the northeast of the project site. There are no other schools within one-quarter mile of the project site. The location of El Carmelo Elementary related to the project site is depicted in Figure 4.5-2.

Figure 4.5-2 Schools Within One-Quarter Mile of the Project Site



Imagery provided by Microsoft Bing and its licensors © 2022.
Additional data provided by California School Campus Database (CSCD), 2021.

4.5.2 Impact Analysis

a. Methodology and Significance Thresholds

Based on Appendix G of the CEQA Guidelines, a hazards and hazardous materials impact is considered significant if the proposed project would:

1. Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials;
2. Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment;
3. Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school;
4. Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, create a significant hazard to the public or the environment;
5. For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, result in a safety hazard or excessive noise for people residing or working in the project area;
6. Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan; or
7. Expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires.

The evaluation of hazards and hazardous materials impacts assumes that the construction, development, and operation of the project would adhere to the latest federal, state, and local regulations, and conform to the latest required standards in the industry, as appropriate.

b. Project Impacts and Mitigation Measures

Threshold 1:	Would the project create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?
Threshold 2:	Would the project create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?

IMPACT HAZ-1 THE PROPOSED PROJECT WOULD INCLUDE DEMOLITION OF BUILDINGS WITH POTENTIAL HAZARDOUS MATERIALS. CONSTRUCTION AND OPERATION OF THE PROPOSED PROJECT COULD INVOLVE THE USE, STORAGE, DISPOSAL OR TRANSPORTATION OF HAZARDOUS MATERIALS. IN ADDITION, UPSET OR ACCIDENT CONDITIONS COULD INVOLVE THE RELEASE OF HAZARDOUS MATERIALS INTO THE ENVIRONMENT. HOWEVER, COMPLIANCE WITH FEDERAL, STATE, AND LOCAL REGULATIONS WOULD REDUCE POTENTIAL IMPACTS. IMPACTS WOULD BE LESS THAN SIGNIFICANT.

Transport and use of hazardous materials for the proposed project could occur during the three stages of the project: demolition, construction, and operation. This section addresses impacts from aboveground hazardous material generation, handling, use, and transport; impacts from potential contaminated soil, soil vapor, and groundwater are discussed under Impact HAZ-3.

Demolition Activities

As detailed under *Previous Investigations and Remediation Activities*, above, the 2020 Phase I ESA conducted by PEC noted the potential for hazardous materials, including ACM and LBP, to be present in the materials of the structures to be demolished, based on their age. In addition, the Phase I ESA noted the removal of asbestos-containing tile and adhesive in 1993 in the 210 Portage Avenue tenant space, further indicating that ACM was formerly present in buildings on the project site.

Demolition of the existing structures prior to construction could release LBP and ACM dust into the air if not remediated prior to demolition, exposing both workers and nearby residents to health hazards. Demolition could also cause the release of other toxic constituents common in buildings of this age and former use, including mercury from thermostats, radiation from exit signs, polychlorinated biphenyls (PCBs) from electrical and other components, and similar other typical hazardous materials. Demolition activities may include temporary storage or transport of these hazardous materials.

Pursuant to PAMC Section 5.24.040, in order to obtain a deconstruction permit, a salvage survey must be conducted which identifies all potentially re-useable material as well as post-deconstruction verification of the recycling or reuse of the identified materials. A building permit application must also be submitted for each structure, and the applicant must obtain an approval from the BAAQMD on the permit application. As discussed under the *Regulatory Setting*, BAAQMD regulates demolition and renovation of materials containing asbestos through Regulation 11, Rule 2.

Approval from the City would be dependent upon acceptance of the deconstruction plan, which must address the disposal of hazardous wastes generated during deconstruction. In order to obtain approval from BAAQMD, the applicant would have to demonstrate compliance with Regulation 11, Rule 2, which requires a pre-demolition ACM survey by a certified inspector and abatement of ACM by a licensed contractor prior to the issuance of a demolition permit. These requirements ensure that all hazardous materials are handled or disposed of appropriately. There is no specific permit requirement for LBP, and BAAQMD does not enforce any standards for LBP. However, during demolition activities the project proponent or their representatives would be required to comply with CCR Title 8 regulations regarding worker exposure to LBP dust or other potentially hazardous dusts arising from demolition, which would require testing, monitoring, containment, and disposal of lead-based materials, such that exposure levels do not exceed CalOSHA standards. Therefore, demolition activities involving hazardous materials existing in the current buildings would fall under existing regulations and would be required to be conducted in a manner which eliminates threats to worker or resident health and safety and would not create a significant hazard to the public or the environment. Impacts from demolition would be less than significant.

Construction Activities

Construction associated with the proposed project may include the temporary transport, storage, and use of potentially hazardous materials including fuels, lubricating fluids, cleaners, or solvents. If the proposed project involves the removal of contaminated soil, grading or excavation would also result in the transport and disposal of hazardous materials as they are unearthed and removed from the project site. Potential impacts with respect to public and environmental exposure to soil, soil vapor, and groundwater contaminants are discussed further under Impact HAZ-3.

As discussed in Section 4.9, *Hydrology and Water Quality*, prior to beginning construction activities on the project site (including grading or demolition), the applicant would be required to obtain

National Pollutant Discharge Elimination System (NPDES) coverage under the California Statewide Construction General Permit (CGP). A core requirement for obtaining coverage under the CGP is the submission of a Stormwater Pollution Prevention Plan (SWPPP), which must include specific Best Management Practices (BMPs) designed to prevent or control any release of construction-related hazardous materials. Common BMPs include designated fueling areas with containment structures, strategic location of spill kits, employee training, and temporal phasing of the use of hazardous materials to ensure limited amounts are used at any given time. SWPPP compliance is monitored regularly and BMPs are examined frequently to ensure they are maintaining structural integrity and functioning as intended.

Hazardous material transport may occur regularly throughout construction, as materials are brought to and from the project site. Any use and transport of hazardous materials, such as solvents or construction fuels, would comply with all local, State, and federal regulations regarding the handling of potentially hazardous materials, as discussed under the *Regulatory Setting*, above. Hazardous materials would be transported by DTSC-registered transporters and be required to follow all DOT regulations under the Hazardous Materials Transport Act, in addition to CalEPA and local CUPA regulations regarding hazardous materials transport. In addition, construction activities that transport hazardous materials would be required to transport such materials along designated roadways in the City and County. Materials transported to and from the project site would be required to reach the closest designated transport route by the shortest path; State Highway 101 and Interstate 280 are the closest designated routes. The Oregon Expressway, with on-ramps in the immediate vicinity of the project site, offers access to both routes within 3 miles. Therefore, transporters would spend a very limited time in the local area, primarily on major transit thoroughfares and virtually no time in residential streets, limiting risk of upset near sensitive uses such as residences.

The requirements for SWPPP development and for licensed transportation of any hazardous materials along designated routes would minimize any risks from use, storage, or transport of hazardous materials during construction, ensuring that the proposed project would not present a significant risk to the public or the environment, and impacts would be less than significant.

Operational Activities

Although new residential development at the project site could involve the use, storage, disposal, or transportation of minute quantities of hazardous materials, new residential uses would not be expected to involve large quantities of these materials. Normal residential activities do not generally present a significant threat to the public or the environment through the use, storage, disposal, or transportation of significant quantities of hazardous materials. Some materials considered hazardous may be used or stored on the project site, but these materials would be limited primarily to common household solvents, paints, chemicals used for cleaning and building maintenance, and landscaping supplies and would not be substantially different from household chemicals and solvents already in general and wide use throughout any residential area.

Residential uses would not involve the transport of materials such that regulation would be triggered. In addition, the prior uses of the project site included regular transport of hazardous materials for industrial and commercial purposes. The proposed redevelopment of the project site would remove such uses and corresponding transport from the project site. Therefore, the overall amounts of hazardous materials being transported to and from the project site is likely to decrease from prior levels, and exposure of the public or environment to the routine use or accidental release

of hazardous materials from operation of the proposed townhome development would be less than significant.

Mitigation Measures

Impacts would be less than significant with required adherence to existing regulations; no mitigation measures are required.

Threshold 3: Would the project emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?

IMPACT HAZ-2 EL CARMELO ELEMENTARY IS LOCATED WITHIN ONE-QUARTER MILE OF THE PROPOSED PROJECT. THE PROPOSED PROJECT WOULD NOT EMIT OR HANDLE HAZARDOUS OR ACUTELY HAZARDOUS MATERIALS. THIS IMPACT WOULD BE LESS THAN SIGNIFICANT.

The proposed project is located approximately 0.24 miles west of the closest school, El Carmelo Elementary, which is part of the Palo Alto Unified School District. There are no other schools within one-quarter mile of the proposed site. Children are particularly susceptible to long-term effects from exposure to hazardous materials. Locations where children spend extended periods of time, such as schools, are considered sensitive to hazardous air emissions and accidental release associated with the handling of extremely hazardous materials, substances, or wastes.

As detailed under Impact HAZ-1, above, demolition and construction of the proposed project may involve the use of hazardous materials, including creation of ACM-containing dust during demolition or transport of hazardous wastes and materials. Operation of the proposed residential development would not be reasonably expected to generate hazardous materials or waste, other than minor quantities typically used for cleaning or landscaping maintenance.

Should the required pre-demolition survey reveal the existence of ACM requiring abatement and remediation during the demolition process, the requirements of PRC 21151.4 would serve to ensure that the school district is properly notified of anticipated work involving hazardous emissions during the demolition phase and that appropriate agencies have the information needed to alter or modify permits or other planning documents as needed, and impacts would be less than significant.

As detailed under Impact HAZ-1, construction could involve both the use and transport of both hazardous materials and hazardous wastes and would be required to be managed by the BMPs included in the project SWPPP; in addition, the use of common construction hazardous materials and wastes in quantities needed for a residential development of this size would not be expected to present hazards to the school. The use of such materials would present a potential impact were they to be transported near the elementary school; however, as discussed under Impact HAZ-1 above licensed hazardous materials transporters leaving the project site would take the shortest direct route to the Oregon Expressway, which is in the opposite direction from the project site as the school. Therefore, it is unlikely transporters would be required to drive past the school while carrying hazardous materials. Therefore, impacts related to construction hazardous materials to the school would be less than significant.

Mitigation Measures

No mitigation measures are required.

Threshold 4: Would the project be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result would it create a significant hazard to the public or the environment?
--

IMPACT HAZ-3 SEVERAL AREAS OF THE PROJECT SITE ARE LISTED ON HAZARDOUS MATERIALS SITES COMPILED PURSUANT TO SECTION 65962.5 AND CONSTRUCTION ACTIVITIES COULD EXPOSE THE PUBLIC AND ENVIRONMENT TO CONTAMINATED GROUNDWATER AND SOILS. KNOWN VOCs BELOW THE PROJECT SITE COULD ALSO CONTRIBUTE TO VAPOR INTRUSION IMPACTS DURING THE OPERATION OF THE PROPOSED PROJECT. THIS IMPACT WOULD BE LESS THAN SIGNIFICANT WITH INCORPORATION OF MITIGATION.

As detailed under *Previous Investigations and Remediation Activities*, above, both the proposed project site and surrounding properties feature open and closed environmental cases as well as evidence of continued impacts at the project site from petroleum hydrocarbons and chlorinated solvents in soil, soil vapor, and shallow groundwater. Several environmental cleanups featuring soil removal and remediation, soil vapor and groundwater extraction, and other treatment methods have occurred in the project site and vicinity, including UST cleanups. The project site is listed in several hazardous material site databases including GeoTracker and EnviroStor, and the nearby COE regional plume investigation is under the authority of the USEPA. Grading and other activities during construction could present health hazards to workers and area residents, and the known presence of VOCs such as TCE in shallow groundwater and soils beneath the project site from the regional COE plume represents a potential impact to the proposed project via vapor intrusion. These impacts are potentially significant and are discussed below.

Construction Activities

The proposed project involves the construction and operation of a residential townhome development on a site with several potential contaminants of concern. Furthermore, TCE and other chlorinated solvents from off-site sources have been detected in the on-site groundwater since the 1980s and contamination of soil vapor and groundwater may persist beneath the project site. While many soil excavations and cleanups have been conducted in the project site, sporadic low-level detections of petroleum hydrocarbons such as benzene, associated breakdown products, and chlorinated solvents continues to occur during site investigations including as recently as 2021. Construction workers may be exposed to TCE, benzene, or other contaminants during on-site activities including excavation of contaminated soil, removal of groundwater, or trench work in which impacted soil vapors may reach the breathing zone. Construction activities could expose construction workers to potentially unacceptable health risks from contaminated groundwater, soil, and soil vapor. This impact is potentially significant.

Virtually all UST removal actions and soil excavations at the project site and adjacent properties have been closed under regulatory oversight with cleanup goals achieved. However, the detections of constituents of concern above residential ESLs during previous investigations, such as arsenic and total petroleum hydrocarbons (TPH) detected in soil during the 2010 PES Phase II ESA, and chlorinated solvents at levels above the cleanup goals for the regional COE plume in soil vapor and groundwater during the 1992 Environ investigation and the 2021 PES Phase II ESA, have supported consistent findings of potential sitewide residual contamination occurring both from the regional VOC plume and from the project site's overall industrial history. This impact is potentially significant.

Dewatering

Construction activities could include ground disturbance and excavation below the ground surface, including for foundation construction and soil removal. As stated in Section 2, *Project Description*, the proposed project would involve excavation up to a depth of 5 feet for building construction and up to 10 feet for utility work. The most recent groundwater monitoring event for the regional COE plume investigation conducted by Stantec in June 2020 indicates the shallow groundwater aquifer termed the “A” aquifer occurs at depths ranging from 13 to 55 feet bgs in the vicinity of the project site (Stantec 2020). Groundwater has been encountered on-site at depths ranging from approximately 16 to 20 feet bgs during the 2021 PES Phase II ESA, although prior excavation to 20.5 feet bgs during the Mercer Processing soil cleanup did not encounter groundwater. Therefore, it is unlikely that contaminated groundwater would be encountered during project excavation. Should groundwater be encountered during excavation such that dewatering is required, dewatering of contaminated groundwater may result in exposure to hazards as runoff or disposal of contaminated water during dewatering could contaminate stormwater systems. As discussed in Section 4.9, *Effects Found Not To Be Significant*, under *Hydrology and Water Quality*, dewatering discharges would be required to comply with the City of Palo Alto’s dewatering regulations in 16.24 of the Municipal Code, which in general would prohibit discharges of contaminated groundwater to the local stormwater infrastructure system. Further, mitigation measures included below to address health risks from contaminated groundwater are required. As long-term structural dewatering would not be required, long-term dewatering of contaminated groundwater would not occur and no impact associated with permanent dewatering would occur.

Operational Activities

The risk of hazardous materials creating a significant hazard to the public or the environment would primarily occur during construction of the project site as on-site contamination is disturbed. Once the project is operational, the contaminated media would mostly be removed or covered and would no longer pose a risk.

As noted throughout the environmental investigations and this analysis, TCE and other contaminants persist in the soils and groundwater beneath the project site. While sampling results indicate that VOC impacts are concentrated along the western portion of the project site, in general these compounds have been detected at low levels throughout the project site. Vapor intrusion occurs when volatile compounds migrate from contaminated groundwater or subsurface soils into the indoor air of an overlying building. Therefore, vapor intrusion of volatile compounds from the impacted groundwater and soil vapor could expose future occupants to potentially unacceptable health risks. The potential risk for vapor intrusion can be mitigated through engineering controls (e.g., sub-slab vapor barrier) to mitigate against the potential for VOC vapors to collect in overlying structures. The California Supreme Court in a December 2015 opinion (*BIA v. BAAQMD*) confirmed CEQA is concerned with the impacts of a project on the environment, not the effects the existing environment may have on a project; therefore, potential hazards impacts to new residents would not be an impact under CEQA, therefore mitigation of vapor intrusion for future occupants is not include within CEQA’s scope. Nevertheless, the City has policies that address existing hazards conditions affecting a proposed project. Policy S-3.3 of the City’s Comprehensive Plan 2030 Update calls for the City to “support public health by requiring as part of development review, property owners and private entities to disclose the presence of contaminated soil or groundwater, identify potential health impacts, prevent vapor intrusion and remediate contamination.” In accordance

with this policy, the City would require the following as a standard condition of approval of the project:

VAPOR INTRUSION PREVENTION CONDITION OF APPROVAL

Prior to issuance of building permits, the applicant shall retain a qualified environmental consultant, California Professional Geologist (PG) or California Professional Engineer (PE) to assess site conditions to determine both the nature and extent of contamination. If contamination at the site exceeds the most current environmental screening levels (ESLs) identified by the San Francisco Bay Regional Water Quality Control Board (RWQCB), the applicant shall retain a qualified environmental consultant, California PG or California PE to prepare and submit a Site Management and Contingency Plan (SMCP) to either the Department of Toxic Substances Control (DTSC), RWQCB, or the County of Santa Clara Department of Environmental Health for approval. The SMCP shall include details regarding the pending development and evaluate remediation and/or mitigation to address any environmental risk identified in the site assessment. The applicant shall agree to and implement all recommendations of the reviewing regulatory agency approving the SMCP in order to reduce the exposure of future occupants to contaminants that exceed the applicable screening levels. If the reviewing agency requires that a sub-slab vapor intrusion barrier system be installed, the Vapor Intrusion Mitigations (VIMs) shall be documented in the building permit plan set prior to issuance of the building permit.

Compliance with the approved SMCP regarding vapor intrusion would reduce risk to future occupants by ensuring that the buildings comply with the established RWQCB ESLs for residential uses and is consistent with Comprehensive Plan Policy S-3.3. As noted previously, CEQA only requires analysis of the project's impacts on the environment, not the environment's impact on the project. However, the condition described above will be included as conditions of approval of the project to ensure compliance with the Comprehensive Plan.

Mitigation Measures

The following mitigation measures are required.

HAZ-1 Regulatory Agency Notification and Approval

Prior to the issuance of deconstruction, demolition, grading, building, or other permits necessary for beginning of construction or development, the project applicant shall contact the Santa Clara County Department of Environmental Health (SCDEH) to discuss the proposed redevelopment project, the proposed residential land use, and the prior environmental investigations. The project applicant shall provide SCDEH with the proposed site use plans regarding the conversion of commercial land use to residential land use, copies of the 2020 and 2021 PES investigative reports, and discuss the onsite presence of groundwater impacted by VOCs at the project site as well as any concerns regarding potentially impacted soils or soil vapor.

SCDEH may require the project applicant to conduct additional investigation/studies, including, but not limited to, soil investigation, soil vapor surveys, and/or groundwater investigations to delineate the extent of contaminated soil, soil vapor, and groundwater. SCDEH may require approval of the final Soil Management Plan (SMP) required by Mitigation Measure HAZ-2, below, prior to issuance of any required project permits. The project applicant shall comply with SCDEH requirements, conduct further investigations as required, and submit the results to SCDEH.

The SCDEH closure and agency approval documents shall be delivered to and reviewed by the project applicant. The project applicant shall furnish copies of the documents to the City Planning Department prior to issuance of grading permits.

It should also be noted that SCDEH may determine that SFBRWQCB or DTSC may be best suited to perform the lead agency duties for assessment and/or remediation at the project site. Should the SFBRWQCB or DTSC serve as the oversight agency, this and other mitigation measures will still apply.

If groundwater wells or soil vapor monitoring probes are identified during demolition, subsurface demolition, or construction at the project site, they will be abandoned per Santa Clara Valley Water District specifications. Abandonment activities will be documented in a letter report submitted to Santa Clara Valley Water District within 60 days of the completion of abandonment activities.

HAZ-2 Site Management Plan for Impacted Soils, Soil Vapor and/or Groundwater

The project applicant shall retain a qualified environmental consultant, California Professional Geologist (PG) or California Professional Engineer (PE), to prepare a Soil Management Plan (SMP) prior to construction. The SMP, or equivalent document, will be prepared to address onsite handling and management of impacted soils, soil vapor, groundwater, or other impacted wastes, and reduce hazards to construction workers and offsite receptors during construction. The plan shall establish remedial measures and/or soil management practices to ensure construction worker safety, the health of future workers and visitors, and the off-site migration of contaminants from the project site. These measures and practices may include, but are not limited to:

- Stockpile management, including stormwater pollution prevention and the installation of BMPs
- Proper disposal procedures of contaminated materials
- Monitoring, reporting, and regulatory oversight notifications
- A health and safety plan for contractors working at the project site that addresses the safety and health hazards of each phase of site construction activities with the requirements and procedures for employee protection
- The health and safety plan will also outline proper soil handling procedures and health and safety requirements to minimize worker and public exposure to hazardous materials during construction.

The City of Palo Alto and/or SCDEH will review and approve the SMP for impacted soils, soil vapor, and groundwater prior to issuance of any permits necessary for the beginning of construction. The project applicant will review and implement the SMP prior to and during demolition and grading (construction).

Significance After Mitigation

Implementation of Mitigation Measures HAZ-1 through HAZ-2 would reduce the potential for construction workers and nearby residents to be exposed to contaminants. Implementation of a vapor intrusion condition of approval will reduce exposure for future site occupants to contaminants.

By contacting SCDEH closure prior to the issuance of any permits necessary for the beginning of construction or development, the implementation of Mitigation Measure HAZ-1 would ensure that

the proper regulatory oversight is applied to project approval and proper cleanup activities occur throughout the development process.

Mitigation Measure HAZ-2 would ensure that planning for the procedures to be implemented throughout work with impacted soils, soil vapor, or groundwater is conducted prior to approval of permits to begin construction from City or other agencies. Adherence to an approved SMP developed under regulatory oversight would reduce potential impacts relating to disturbance and removal of potentially contaminated soils and exposure to soil vapor or groundwater. Further, adherence to the SMP would reduce potential impacts with regard to fugitive dust and VOCs generated during ground disturbance that could pose a temporary risk to human health due to inhalation.

With implementation of these mitigation measures and adherence to existing regulatory requirements for development of the project site, impacts to the public and the environment from on-site contamination would be less than significant.

Threshold 5: For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, result in a safety hazard or excessive noise for people residing or working in the project area

IMPACT HAZ-4 THE PROPOSED PROJECT SITE IS NOT LOCATED WITHIN AN AIRPORT LAND USE PLAN OR VICINITY OF A PRIVATE AIRSTRIp. NO IMPACT RELATED TO AIRPORT HAZARDS WOULD OCCUR.

The project site is located approximately 2.4 miles southwest of the closest airport, Palo Alto Airport. The heliport at Stanford Hospital is located approximately 2.2 miles west of the project site. The project site is not located within an airport land use plan, Airport Influence Area, or Airport Safety Zone. No impacts involving airports or private airstrips would occur.

Mitigation Measures

No mitigation measures are required.

Threshold 6: Would the project impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?
--

IMPACT HAZ-5 IMPLEMENTATION OF THE PROPOSED PROJECT WOULD NOT IMPAIR IMPLEMENTATION OF OR PHYSICALLY INTERFERE WITH AN ADOPTED EMERGENCY RESPONSE PLAN OR EMERGENCY EVACUATION PLAN. THIS IMPACT WOULD BE LESS THAN SIGNIFICANT.

As required by State law, the City of Palo Alto has established emergency preparedness procedures and programs to be prepared for and respond to a variety of natural and manmade disasters that could confront the community. The City's emergency preparedness programs are operated collaboratively by the Palo Alto Fire Department, the Palo Alto Police Department, and the Santa Clara County Office of Emergency Services. Emergency and disaster planning is primarily governed by the City Emergency Operations Plan (EOP), which is responsible for coordinating agency response to disaster or other large-scale emergencies in Palo Alto with assistance from the Santa Clara County Office of Emergency Services, along with the LHMP. The City lacks a formal evacuation plan that governs the entire incorporated area and sphere of influence, but area evacuation plans are contained in documents including the Palo Alto Foothills Fire Management Plan updates of 2009 and 2016 (which identified both the need for a coordinated evacuation plan and potential private sector obstacles to emergency access during wildfires) and online public resources provided by the

Palo Alto Fire Department such as the Ready, Set, GO! Interactive evacuation route map (PAFD 2022b).

The City's EOP establishes policy direction for emergency planning, mitigation, response, and recovery activities in Palo Alto. The EOP addresses interagency coordination, procedures to maintain communication with County and State emergency response teams, and methods to assess the extent of damage and management of volunteers. Like most municipal EOPs, it follows the principles of the state Incident Command System and the National Incident Management System (City of Palo Alto 2016).

The primary evacuation and emergency access routes in the vicinity of the project site would be the Park Boulevard, Alma Street, and State Route 82 access points to the Oregon Expressway and from there to State Highway 101 or Interstate 280. The proposed project does not include any characteristics (e.g., permanent road closures) that would physically impair or otherwise interfere with access to these critical routes or obstruct emergency response or evacuation in the project vicinity. As described in Section 4.8, *Transportation*, the project itself would not impair emergency access to structures in the immediate vicinity. In addition, standard traffic management practices related to construction staging and parking would ensure that potential temporary road closures during construction would not impair or otherwise interfere with emergency response or evacuation; such road closures, if necessary at all, would be precautionary and would not involve temporarily obstructing complete access. Further, industry practices require the notification of area emergency responders prior to any such closures, ensuring that in the event of an emergency, responders and managers would already be aware of any potential obstacles related to project construction or demolition. Accordingly, potential impacts related to interference with an adopted emergency response plan or emergency evacuation plan would be less than significant.

Mitigation Measures

No mitigation measures are required.

Threshold 7: Would the project expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires?

IMPACT HAZ-6 THE PROJECT SITE IS IN AN URBAN AREA AND IS NOT NEAR WILDLANDS. NO IMPACT RELATED TO WILDLAND FIRES WOULD OCCUR.

As detailed in Section 4.9, *Effects Found not to be Significant*, the project site is not located within a Fire Hazard Severity Zone or within the Wildland-Urban Interface. The proposed project would not expose people or structures directly or indirectly to risk related to wildland fires. No impact would occur.

Mitigation Measures

No mitigation measures are required.

c. Cumulative Impacts

Cumulative development has potential to expose future area residents, employees, and visitors to current and former use of hazardous materials. Continued urban development as described in Section 3, *Environmental Setting*, will cumulatively increase the potential for exposure to existing hazards associated with hazardous materials. Therefore, an overall increase in the potential for

human health hazards will occur as intensification of development occurs. However, overall, hazards and hazardous materials impacts associated with individual developments are site specific in nature and must be addressed on a case-by-case basis. The magnitude of hazards for individual projects would depend upon the location, type, and size of development and the specific hazards associated with individual sites. Since hazards and hazardous materials are required to be examined as part of the permit application and environmental review process, it is anticipated that potential impacts associated with individual projects will be adequately addressed and mitigated prior to permit approval. Compliance with regulatory requirements and 2030 Comprehensive Plan policies, including remedial action on contaminated sites, would avoid potential hazard impacts associated with cumulative development. With adherence to existing 2030 Comprehensive Plan policies and other local, regional, state, and federal regulations, no significant cumulative human or environmental health impacts are anticipated, and the project's cumulative contribution to impacts would be less than significant.

4.6 Land Use and Planning

This section analyzes the proposed project's consistency with applicable land use plans, policies, and regulations, including the 2030 Comprehensive Plan and the City of Palo Alto Municipal Code (PAMC) and identifies whether potential environmental effects could arise from any inconsistencies. Potential impacts related to the proposed project and its neighboring land uses are discussed in greater detail in other sections of the EIR, including Section 4.1, *Air Quality*, and Section 4.7, *Noise*.

4.6.1 Setting

The project site encompasses approximately 14.27 acres across four parcels: APNs 132-38-071, 132-32-036, 132-32-042, and 132-32-043. The project site is currently developed with a two-story commercial building used by several businesses, including software companies, a computer repair business, a one-story building used as a gym, and two other office buildings. The site is generally flat and almost entirely paved. Single-family residential uses abut the site to the west, and a mix of residential, retail, and office uses are located further west, across Olive Avenue. Uses to the east and west of the site are primarily commercial and include offices, restaurants, gyms, and various retail uses. Commercial uses, including offices are located north of the site, and a single-family residential neighborhood is located further north, across Alma Street.

As discussed in Section 2, *Project Description*, the majority of the project site has a 2030 Comprehensive Plan designation of Multiple Family Residential (MF). The designation allows for multi-family housing with a residential character appropriate to a range of densities and has the following requirements:

- **Allowed Land Uses:** The permitted number of housing units will vary by area, depending on existing land use, proximity to major streets and public transit, distance to shopping and environmental problems.
- **Density and Intensity:** Net densities will range from 8 to 40 units and 8 to 90 persons per acre

The parcel at 3040 Park Boulevard (APN #132-32-036) has a Comprehensive Plan designation of Light Industrial (LI). The designation has the following requirements:

- **Allowed Land Uses:** Wholesale and storage warehouses and the manufacturing, processing, repairing and packaging of goods. Compatible residential and mixed-use projects may also be located in this category.
- **FAR:** Range up to 0.5.

As also discussed in Section 2, *Project Description*, the majority of the site is zoned Medium Density Multiple-Family Residence District (RM-30). Uses in this zone are intended to create, preserve and enhance neighborhoods for multiple-family housing with site development standards and visual characteristics intended to mitigate impacts on nearby lower density residential districts. Permitted densities in the RM-30 residence district range from sixteen to thirty dwelling units per acre. (PAMC Section 18.13.010).

The parcel at 3040 Park Boulevard is zoned General Manufacturing (GM). This zone allows for light manufacturing, research, and commercial service uses.

4.6.2 Regulatory Setting

State Regulations

The state requires all cities and counties in California to adopt a general plan establishing goals and policies for long-term development, protection from environmental hazards, and conservation of identified natural resources (California Government Code §65300). Local general plans lay out the pattern of future residential, commercial, industrial, agricultural, open-space, and recreational land uses in a community. To facilitate implementation of planned growth patterns, general plans typically also include goals and policies addressing the coordination of land use patterns with the development and maintenance of infrastructure facilities and utilities. Government Code Section 65302 lists eight “elements” or chapters that cities and counties must include in their general plans: Land Use, Circulation, Housing, Conservation, Open Space, Noise, Safety, and Environmental Justice.

Local jurisdictions implement their general plans by adopting zoning, subdivision, grading, and other ordinances. Zoning identifies the specific types of land uses that may be allowed on a given site and establishes the standards that will be imposed on new development. Zoning regulations vary from jurisdiction to jurisdiction. However, typical standards promulgated in zoning ordinances include the siting of structures relative to parcel boundaries; architectural design (including height limitations); and the percentage of building coverage allowed relative to the overall square footage of a parcel. In some jurisdictions, the zoning ordinance permits construction “by right” (i.e., without the need for hearing) as an allowable use. In others, a conditional use permit or similar discretionary action is needed.

Local Regulations

“Land use” is a term that describes different types of activities that occur in a particular area. For example, different areas in Palo Alto contain residences, retail stores, industry, parks, open spaces, and public facilities, such as schools. Palo Alto includes distinct residential neighborhoods, commercial centers, and employment districts, each embodying a character that makes it unique.

The City’s 2030 Comprehensive Plan governs local land use, which in turn provides the basis for the PAMC, precise plans, and design guidelines. The current Palo Alto 2030 Comprehensive Plan and the Palo Alto Municipal Code (PAMC) are described below.

City of Palo Alto 2030 Comprehensive Plan

The 2030 Comprehensive Plan provides the City with goals and policies that reflect shared community values, potential change areas, and compliance with state law and local ordinances. The Comprehensive Plan provides a guide for future land use decisions in the city. The Land Use and Community Design Element sets forth the following applicable goals and policies to ensure compatible development for future projects (City of Palo Alto 2017):

- Policy L-1.1** Maintain and prioritize Palo Alto’s varied residential neighborhoods while sustaining the vitality of its commercial areas and public facilities.
- Policy L-1.2** Limit future urban development to currently developed lands within the urban service area. The boundary of the urban service area is otherwise known as the urban growth boundary. Retain undeveloped land west of Foothill Expressway and Junipero Serra as open space, with allowances made for very low-intensity development consistent with the open space character of the area. Retain undeveloped land northeast of Highway 101 as open space.

- Policy L-1.3** Infill development in the urban service area should be compatible with its surroundings and the overall scale and character of the city to ensure a compact, efficient development pattern.
- Policy L-1.11** Hold new development to the highest development standards in order to maintain Palo Alto's livability and achieve the highest quality development with the least impacts.
- Policy L-3.1** Ensure that new or remodeled structures are compatible with the neighborhood and adjacent structures.
- Policy L-6.1** Promote high-quality design and site planning that is compatible with surrounding development and public spaces.
- Policy L-3.7** Where possible, avoid abrupt changes in scale and density between residential and non-residential areas and between residential areas of different densities. To promote compatibility and gradual transitions between land uses, place zoning district boundaries at mid-block locations rather than along streets wherever possible.

Palo Alto Municipal Code

The PAMC serves as an implementing tool for the General Plan by establishing detailed, parcel-specific development regulations and standards in each area of the City. Although distinct documents, the 2030 Comprehensive Plan and the PAMC are closely related, and State law mandates that zoning regulations be consistent with the General Plan maps and policies.

North Ventura Coordinated Area Plan (NVCAP)

The City of Palo Alto initiated the preparation of a Coordinated Area Plan for the North Ventura planning area in November 2017. The NVCAP site is roughly bounded by Page Mill Road, El Camino Real, Lambert Avenue, and the Caltrain tracks. The project site is located within the North Ventura planning area limits. The purpose of the NVCAP is to provide a vision for the future of the North Ventura area as a walkable neighborhood with multifamily housing, ground floor retail, a public park, creek improvements, and an interconnected street grid. It should promote a well-designed mixed-use district with diverse land uses and a network of pedestrian-oriented streets (City of Palo Alto 2021). The NVCAP has not yet been adopted; however, identified goals of the proposed plan are as follows:

- **Housing and Land Use:** Add to the City's supply of multifamily housing, including market rate, affordable, "missing middle," and senior housing in a walkable, mixed use, transit-accessible neighborhood, with retail and commercial services and possibly start up space, open space, and possibly arts and entertainment uses.
- **Transit, Pedestrian and Bicycle Connections:** Create and enhance well-defined connections to transit, pedestrian, and bicycle facilities, including connections to the Caltrain station, Park Boulevard and El Camino Real.
- **Connected Street Grid:** Create a connected street grid, filling in sidewalk gaps and street connections to California Avenue, the Caltrain Station, and El Camino Real where appropriate.
- **Community Facilities and Infrastructure:** Carefully align and integrate development of new community facilities and infrastructure with private development, recognizing both the community's needs and that such investments can increase the cost of housing.

- **Balance of Community Interests:** Balance community-wide objectives with the interests of neighborhood residents and minimize displacement of existing residents and small businesses.
- **Urban Design, Design Guidelines and Neighborhood Fabric:** Develop human-scale urban design strategies, and design guidelines that strengthen and support the neighborhood fabric. Infill development will respect the scale and character of the surrounding residential neighborhood. Include transition zones to surrounding neighborhoods.
- **Sustainability and the Environment:** Protect and enhance the environment, while addressing the principles of sustainability.

4.6.3 Impact Analysis

a. Methodology and Significance Thresholds

Based on Appendix G of the CEQA Guidelines, a land use and planning impact is considered significant if the proposed project would:

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

b. Project Impacts and Mitigation Measures

Threshold 1: Would the project physically divide an established community?

Impact LU-1 THE PROJECT WOULD NOT INVOLVE DEVELOPMENT OF NEW STRUCTURES, ROADS, OR INFRASTRUCTURE THAT WOULD DIVIDE OR SEPARATE EXISTING COMMUNITIES. NO IMPACT WOULD OCCUR.

The proposed project would involve the construction of a new residential development on existing parcels in a fully urbanized area of Palo Alto. The project would involve a subdivision to merge portions of four parcels into two parcels. However, it would not separate connected neighborhoods or land uses from each other. No new roads, linear infrastructure, or other development features are proposed that would divide an established community or limit movement, travel, or social interaction between established land uses. No impact would occur.

Mitigation Measures

No mitigation measures would be required.

Threshold 2: Would the project cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?

Impact LU-2 THE PROJECT WOULD NOT CONFLICT WITH THE GOALS OR POLICIES IN THE CITY'S 2030 COMPREHENSIVE PLAN, THE PALO ALTO MUNICIPAL CODE, OR THE NORTH VENTURA COORDINATED AREA PLAN. THIS IMPACT WOULD BE LESS THAN SIGNIFICANT.

City of Palo Alto 2030 Comprehensive Plan

The majority of the area of proposed development has a 2030 Comprehensive Plan designation of Multiple Family Residential (MF). The MF land use designation allows for net densities that range from 8 to 40 units and 8 to 90 persons per acre. The project would comply with the MF land use designation as it would involve new residential development at a density of 18.7 dwelling units per acre.

The parcel at 3040 Park Boulevard has a Comprehensive Plan designation of Light Industrial (LI). The LI land use designation allows for "compatible residential and mixed-use projects" and "high density multi-family housing in specific locations near transit centers." Because the project involves multi-family housing near the Caltrain station, the project would be consistent with the LI designation.

The project would result in a potentially significant impact if it would obstruct the implementation of the goals and policies within the 2030 Comprehensive Plan that were adopted for the purpose of avoiding or mitigating an environmental effect. Table 4.6-1 provides an evaluation of project consistency with applicable land use goals and policies.

Table 4.6-1 Project Consistency with the City of Palo Alto 2030 Comprehensive Plan

Measure	Project Consistency
Land Use and Community Design Element	
Policy L-1.1 Maintain and prioritize Palo Alto's varied residential neighborhoods while sustaining the vitality of its commercial areas and public facilities.	Consistent. The project would provide 91 condominium townhome units which would improve upon Palo Alto's varied residential neighborhoods. New residents from the project would have convenient access to nearby commercial areas and public facilities, which would help sustain the vitality of these areas.
Policy L-1.2 Limit future urban development to currently developed lands within the urban service area. The boundary of the urban service area is otherwise known as the urban growth boundary. Retain undeveloped land west of Foothill Expressway and Junipero Serra as open space, with allowances made for very low-intensity development consistent with the open space character of the area. Retain undeveloped land northeast of Highway 101 as open space.	Consistent. The project would be infill development in an existing developed urban area and would not impact undeveloped land or open space.
Policy L-1.3 Infill development in the urban service area should be compatible with its surroundings and the overall scale and character of the city to ensure a compact, efficient development pattern.	Consistent. The project would utilize neutral palette colors such as brown and white to complement surrounding uses. At three stories, the scale of the project would be consistent with that of surrounding development, which generally ranges from one to four stories in height; the proposed project would feature contemporary design with flat roofs, rectangular windows, wood paneling, and painted stucco, similar to surrounding

Measure	Project Consistency
	buildings, particularly to the west along Park Boulevard and Page Mill Road. In addition, project design would undergo review by the Architectural Review Board to ensure consistency with neighborhood character. The proposed attached, three-story townhome configuration on an infill site near transit would contribute to a compact and efficient development pattern.
Policy L-3.1 Ensure that new or remodeled structures are compatible with the neighborhood and adjacent structures.	Consistent. The project would include both new and remodeled structures. The project would utilize neutral palette colors such as brown and white to complement surrounding uses. In addition, project design would undergo review by the Architectural Review Board to ensure consistency with neighborhood character.
Policy L-6.1 Promote high-quality design and site planning that is compatible with surrounding development and public spaces.	Consistent. Project design would undergo review by the Architectural Review Board to ensure consistency with neighborhood character.
Transportation Element	
Policy T-1.3 Reduce GHG and pollutant emissions associated with transportation by reducing VMT and per-mile emissions through increasing transit options, supporting biking and walking, and the use of zero-emission vehicle technologies to meet City and State goals for GHG reductions by 2030.	Consistent. The project would be located within approximately 0.25 to 0.3 miles of multiple bus stops serviced by the VTA and Dumbarton Express (Express 101, Express 102, Express 104, Bus Route 22, Bus Route 89), as well as approximately 0.4 miles southeast of the California Avenue Train Station. The project is also designed to promote walking, bicycling and zero-emission vehicle use by providing new drive aisles between buildings, 101 bicycle parking spaces (91 in garage and 10 surface), EV chargers in every unit, and placing housing near transit.
Policy T-1.4 Ensure that electric vehicle charging infrastructure, including infrastructure for charging e-bikes, is available citywide.	Consistent. The project would include one EV charger in each unit as well as one EV surface parking space.
Policy T-1.4 Promote personal transportation vehicles an alternative to cars (e.g. bicycles, skateboards, roller blades) to get to work, school, shopping, recreational facilities and transit stops.	Consistent. The project would be located within approximately 0.25 to 0.3 miles of multiple bus stops serviced by the VTA and Dumbarton Express (Express 101, Express 102, Express 104, Bus Route 22, Bus Route 89), as well as approximately 0.4 miles southeast of the California Avenue Train Station. The project is also designed to promote walking and bicycling by providing 101 bicycle parking spaces (91 in garage and 10 surface) and placing housing near transit.
Policy T-3.7 Encourage pedestrian-friendly design features such as sidewalks, street trees, on-street parking, gathering spaces, gardens, outdoor furniture, art and interesting architectural details.	Consistent. The project would include pedestrian friendly walkways as well as outdoor seating, a fenced play area, street trees, and bocce ball courts for future residents.
Policy T-5.1 All new development projects should manage parking demand generated by the project, without the use of on street parking, consistent with the established parking regulations. As demonstrated parking demand decreases over time, parking requirements for new construction should decrease.	Consistent. The project would include two parking spaces per unit pursuant to PAMC Section 18.52.040 as well as 36 surface parking spaces.

Measure	Project Consistency
Natural Environment Element	
Policy N-1.4 Protect special-status species and plant communities, including those listed by State and federal agencies and recognized organizations from the impacts of development and incompatible activities.	Consistent. The project would be located in an urbanized area, and the site is developed with existing structures and paving. There is no habitat for special status species on the site. Although the site is bisected by Matadero Creek, the creek is fully channelized and does not contain riparian habitat. The project would not impact special-status species and plant communities.
Policy N-2.6 Improve the overall distribution of citywide canopy cover, so that neighborhoods in all areas of Palo Alto enjoy the benefits of a healthy urban canopy.	Consistent. The project would preserve 16 trees on the site and 2 trees off-site, while removing 70 trees. The project would involve planting 176 proposed new trees around the site, resulting in a net increase.
Policy N-2.10 Preserve and protect Regulated Trees, such as native oaks and other significant trees, on public and private property, including landscape trees approved as part of a development review process and consider strategies for expanding tree protection in Palo Alto.	Consistent. The project would involve removal of protected trees. However, the project would be required comply with the City of Palo Alto Tree Technical Manual pursuant to PAMC Section 8.10.030 and would implement required practices in the manual. A permit would be obtained from the Public Works Department prior to construction work for the protected trees to be removed.
Policy N-4.10 Reduce pollution in urban runoff from residential, commercial, industrial, municipal, and transportation land uses and activities.	Consistent. The project would include stormwater treatment planters and backflow preventers to reduce stormwater runoff and pollution. Although the site is bisected by Matadero Creek, the area of disturbance would not include the creek and the project would not involve the direct removal, filling, hydrological interruption, or other means to the bed, bank, channel or adjacent upland area of Matadero Creek, and therefore would not affect the water quality of the Matadero Creek.
Policy N-7.4 Maximize the conservation and efficient use of energy in new and existing residences and other buildings in Palo Alto.	Consistent. The project would be required to comply with the Palo Alto Green Building Ordinance and be 10 percent more energy efficient than the base CALGreen code requirements, including providing energy efficient appliances and lighting and water efficient fixtures and irrigation.
Source: City of Palo Alto 2017	

As shown in Table 4.6-1, the project would be generally consistent with the applicable goals and policies in the 2030 Comprehensive Plan. Therefore, the project would not conflict with the 2030 Comprehensive Plan.

City of Palo Alto Municipal Code

As discussed above under *Setting*, the majority of the site is zoned Medium Density Multiple-Family Residence District (RM-30), and the parcel APN #132-32-036 at 3040 Park Boulevard is zoned General Manufacturing (GM). Although the GM zone does not allow for residential uses, the corresponding land use designation, Light Industrial, in the 2030 Comprehensive Plan allows for “higher density multi-family housing in specific locations.” Pursuant to the Housing Accountability Act (Government Code Section 65589.5(j)(4)) and the State Density Bonus Law Section 65915(o)(4), the project would be permitted to construct multi-family residential housing on the parcel at 3040 Park Boulevard regardless of inconsistency between zoning and the 2030 Comprehensive Plan because the 2030 Comprehensive Plan would permit this type of use.

The project would require Major Architectural Review for 91 condominium units and a Vesting Tentative Map. The Vesting Tentative map would merge and subdivide four existing parcels create two new resulting parcels as well as subdivide one of the proposed resulting parcels for condominium purposes. The project would be consistent with the uses and development standards allowed within the RM-30 Zoning Designation with the requested waivers and/or concessions for FAR maximum and open space. Table 4.6-2 shows the project's consistency with PAMC RM-30 development standards. A portion of the project would be located within the General Manufacturing (GM) Zone District. Pursuant to both the Housing Accountability Act (Government Code section 65589.5 (j)(4)) and State Density Bonus Law (Government Code Section 65915(o)(4)), the project is permitted to build multi-family residential use at 3040 Park Boulevard, regardless of the inconsistency between General Plan and zoning, because the General Plan objectively permits this type of use. The portion of the project located within the GM zone district would be consistent with the GM zone district development standards, as shown in Table 4.6-3. Therefore, the project would not require a Comprehensive Plan Land Use Map or Text Amendment and would not require a Zoning Map Amendment. The project would be consistent with the land use and zoning designations and would not conflict with the Comprehensive Plan or Municipal Code.

Table 4.6-2 Project Consistency with PAMC RM-30 Development Standards

Project Characteristics	RM-30 Requirements¹	Proposed by Project	Project Compliance with RM-30 Requirements
Density	16 to 30 dwelling units/acre	18.7 dwelling units/acre	Complies
Floor Area Ratio	0.6	1.39	Density bonus waiver of FAR maximum required
Building Height	35 (maximum)	Maximum parapet height of 34 feet	Complies
Private Open Space (private unit balconies)	50 square feet/dwelling unit (minimum)	8,403 square feet (92 square feet/dwelling unit) ³	Complies
Common Open Space	75 square feet/dwelling unit (minimum)	24,499 square feet (247 square feet/dwelling unit) ³	Complies
Open Space (Percentage)	30	20	Density bonus waiver of open space required.
Parking	RM-30 Requirements¹	Proposed by Project	
Garage Parking	2 spaces per residential unit	182 spaces (2 per residential unit)	Complies
Surface Parking	–	36 spaces	Complies
Total Spaces	–	218 spaces (2.40 spaces ratio)	Complies
Total Bicycle Parking Spaces	1 space per unit	101 (91 in garage and 10 surface guest spaces)	Complies

¹ Per PAMC Section 18.13.040, development standards for the RM-30 district.

Table 4.6-3 Project Consistency with PAMC GM Development Standards

Project Characteristics	GM Requirements ¹	Proposed by Project	Project Compliance with GM Requirements
Floor Area Ratio	0.5:1	1.39: 1 (for total parcel)	Density bonus waiver of FAR maximum required
Building Height	50	Maximum parapet height of 34 feet	Complies
Parking	Multi-family Requirements ²	Proposed by Project	Project Compliance with GM Requirements
Vehicle Parking	2 per 2-bedroom or larger unit, at least one space per unit must be covered	218 spaces (2.40 spaces ratio)	Complies
Bicycle Parking	1 long-term space per unit and 1 short-term space per every ten units	101 (91 in garage and 10 surface guest spaces)	Complies

¹ Per PAMC Section 18.20.040, development standards for the GM district.

²Per PAMC Section 18.52.040, off-street parking, loading, and bicycle facility requirements

North Ventura Coordinated Area Plan

As mentioned above under *Local Regulation*, the project site is located within the NVCAP boundaries. Because the plan is not adopted, consistency with this plan is not required and inconsistency with the plan would not be considered a significant impact. However, for informational purposes, the project has been analyzed for consistency with the identified NVCAP vision. Table 4.6-4 shows the project's consistency with proposed NVCAP goals. As shown in the table, the project would be consistent with proposed NVCAP goals and therefore would not conflict with the NVCAP vision.

Table 4.6-4 Project Consistency with the NVCAP Vision

Measure	Project Consistency
Transit, Pedestrian and Bicycle Connections: Create and enhance well-defined connections to transit, pedestrian, and bicycle facilities, including connections to the Caltrain station, Park Boulevard and El Camino Real. Connected Street Grid: Create a connected street grid, filling in sidewalk gaps and street connections to California Avenue, the Caltrain Station, and El Camino Real where appropriate.	Consistent. As discussed in Section 4.7, <i>Transportation</i>, the proposed project would be located within a 0.5 to 0.6 mile walk to multiple bus stops serviced by the VTA and Dumbarton Express (Express 101, Express 102, Express 103, Bus Route 22, Bus Route 89, Bus Route 522, Rapid 522), as well as approximately 0.4 miles southeast of the California Avenue Train Station. The project is also designed to promote walking and bicycling by providing 101 bicycle parking spaces (91 in garage and 10 surface) and placing housing near transit. The proposed project would not involve improvement to the transit, pedestrian, or bicycle network outside of the area of proposed development, but the site has adequate connections to the existing networks.
Housing and Land Use: Add to the City's supply of multifamily housing, including market rate, affordable, "missing middle," and senior housing in a walkable, mixed use, transit-accessible neighborhood, with retail and commercial services and possibly start up space, open space, and possibly arts and entertainment uses.	Consistent. The project would provide 15 percent of units (14 units) at the moderate-income affordability level and would include private open space as well as common open space in the form of a landscaped paseo at the northeast corner of the proposed area of development adjacent to Park Boulevard which would include a fenced play area, fenced dog run, seating and benches, and a lawn area. The project would also

Measure	Project Consistency
	include landscaped outdoor seating areas along the eastern side of the site next to Matadero Creek.
Balance of Community Interests: Balance community-wide objectives with the interests of neighborhood residents and minimize displacement of existing residents and small businesses.	Consistent. The project would not displace existing residents since there are currently none on site. Existing businesses on site would not be displaced but would be relocated to a separate portion of the site.
Urban Design, Design Guidelines and Neighborhood Fabric: Develop human-scale urban design strategies, and design guidelines that strengthen and support the neighborhood fabric. Infill development will respect the scale and character of the surrounding residential neighborhood. Include transition zones to surrounding neighborhoods.	Consistent. The project would be consistent with the 2030 Comprehensive Plan land use designations as well as zoning with the exception of the GM zone. However, as mentioned above, the project would be permitted to construct multi-family residential housing on the parcel APN #132-32-036 at 3040 Park Boulevard regardless of inconsistency between zoning and the 2030 Comprehensive Plan because the 2030 Comprehensive Plan objectively permits this type of use. As shown in Table 4.6-2, the project would comply with development standards for the RM-30 zone with the request for two waivers and would therefore be compatible with the surrounding neighborhood. As shown in Table 4.6-3 the project also complies with the GM zone district standards for the portion of the project located within the GM Zone. In addition, project design would undergo review by the Architectural Review Board to ensure consistency with neighborhood character.
Sustainability and the Environment: Protect and enhance the environment, while addressing the principles of sustainability.	Consistent. The project would comply with 2019 Title 24 standards and the Palo Alto Green Building Ordinance and be 10 percent more energy efficient than the base CALGreen code requirements, including providing energy efficient appliances and lighting and water efficient fixtures and irrigation. Furthermore, the project would promote walking, bicycling and transit use by providing 101 bicycle parking spaces (91 in garage and 10 surface) and placing housing near transit. In addition, the project would preserve 16 trees on site and 2 trees off-site and would involve planting 176 proposed new trees around the area of proposed development.
Source: City of Palo Alto 2021	

Overall, the proposed project would be consistent with the 2030 Comprehensive Plan, PAMC, and proposed NVCAP vision and would not cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect. This impact would be less than significant.

Mitigation Measures

No mitigation measures would be required.

c. Cumulative Impacts

The proposed project would not physically divide an established community and would be generally consistent with goals and policies in the City of Palo Alto 2030 Comprehensive Plan, the PAMC, and NVCAP. All other pending and future projects in Palo Alto would be required to adhere to the City zoning and development regulations and Comprehensive Plan policies to mitigate environmental impacts where feasible. In addition, all pending and future projects would be reviewed for

consistency with the 2030 Comprehensive Plan and all other applicable regulatory land use actions prior to approval. Therefore, it is not anticipated that a cumulative land use and planning impact would occur. The proposed project would not result in significant cumulative impacts with respect to consistency with land use plans. Impacts would not be cumulatively considerable.

This page intentionally left blank.

4.7 Noise

This section analyzes potential impacts related to noise for future development under the proposed project. Topics addressed include construction noise and vibration, on-site operational noise, traffic noise, the exposure of new residents to ambient noise, and aircraft noise.

4.7.1 Setting

a. Overview of Sound Measurement

Noise

Sound is a vibratory disturbance created by a moving or vibrating source, which is capable of being detected by the hearing organs. Noise is defined as sound that is loud, unpleasant, unexpected, or undesired and may therefore be classified as a more specific group of sounds. The effects of noise on people can include general annoyance, interference with speech communication, sleep disturbance, and, in the extreme, hearing impairment (California Department of Transportation [Caltrans] 2013).

Human Perception of Sound

Noise levels are commonly measured in decibels (dB) using the A-weighted sound pressure level (dBA). The A-weighting scale is an adjustment to the actual sound pressure levels so that they are consistent with the human hearing response. Decibels are measured on a logarithmic scale that quantifies sound intensity in a manner similar to the Richter scale used to measure earthquake magnitudes. A doubling of the energy of a noise source, such as doubling of traffic volume, would increase the noise level by 3 dB; dividing the energy in half would result in a 3 dB decrease (Caltrans 2013).

Human perception of noise has no simple correlation with sound energy: the perception of sound is not linear in terms of dBA or in terms of sound energy. Two sources do not “sound twice as loud” as one source. It is widely accepted that the average healthy ear can barely perceive changes of 3 dBA, increase or decrease (i.e., twice the sound energy); that a change of 5 dBA is readily perceptible (8 times the sound energy); and that an increase (or decrease) of 10 dBA sounds twice (half) as loud (10.5 times the sound energy) (Caltrans 2013).

Sound Propagation and Shielding

Sound changes in both level and frequency spectrum as it travels from the source to the receiver. The most obvious change is the decrease in the noise level as the distance from the source increases. The manner by which noise reduces with distance depends on factors such as the type of sources (e.g., point or line), the path the sound will travel, site conditions, and obstructions.

Sound levels are described as either a “sound power level” or a “sound pressure level,” which are two distinct characteristics of sound. Both share the same unit of measurement, the dB. However, sound power (expressed as L_{pw}) is the energy converted into sound by the source. As sound energy travels through the air, it creates a sound wave that exerts pressure on receivers, such as an eardrum or microphone, which is the sound pressure level. Sound measurement instruments only measure sound pressure, and noise level limits are typically expressed as sound pressure levels.

Noise levels from a point source (e.g., construction, industrial machinery, air conditioning units) typically attenuate, or drop off, at a rate of 6 dBA per doubling of distance. Noise from a line source (e.g., roadway, pipeline, railroad) typically attenuates at about 3 dBA per doubling of distance (Caltrans 2013). Noise levels may also be reduced by intervening structures; the amount of attenuation provided by this “shielding” depends on the size of the object and the frequencies of the noise levels. Natural terrain features, such as hills and dense woods, and man-made features, such as buildings and walls, can significantly alter noise levels. Generally, any large structure blocking the line of sight will provide at least a 5-dBA reduction in source noise levels at the receiver. Structures can substantially reduce exposure to noise as well. The FHWA’s guidance indicates that modern building construction generally provides an exterior-to-interior noise level reduction of 10 dBA with open windows and an exterior-to-interior noise level reduction of 20 to 35 dBA with closed windows (Federal Highway Administration [FHWA] 2011).

Descriptors

The impact of noise is not a function of loudness alone. The time of day when noise occurs and the duration of the noise are also important factors of project noise impact. Most noise that lasts for more than a few seconds is variable in its intensity. Consequently, a variety of noise descriptors have been developed. The noise descriptors used for this study are the equivalent noise level (L_{eq}) and Day-Night Average Level (L_{dn}).

L_{eq} is one of the most frequently used noise metrics; it considers both duration and sound power level. The L_{eq} is defined as the single steady-state A-weighted sound level equal to the average sound energy over a time period. When no time period is specified, a 1-hour period is assumed. The L_{max} is the highest noise level within the sampling period, and the L_{min} is the lowest noise level within the measuring period. Normal conversational levels are in the 60 to 65-dBA L_{eq} range; ambient noise levels greater than 65 dBA L_{eq} can interrupt conversations (Federal Transit Administration [FTA] 2018).

Noise that occurs at night tends to be more disturbing than that occurring during the day. Community noise is usually measured using Day-Night Average Level (L_{DN}), which is the 24-hour average noise level with a +10 dBA penalty for noise occurring during nighttime hours (10:00 p.m. to 7:00 a.m.). Community noise can also be measured using Community Noise Equivalent Level (CNEL or L_{DEN}), which is the 24-hour average noise level with a +5 dBA penalty for noise occurring from 7:00 p.m. to 10:00 p.m. and a +10 dBA penalty for noise occurring from 10:00 p.m. to 7:00 a.m. (Caltrans 2013).¹ The relationship between the peak-hour L_{eq} value and the L_{DN} /CNEL depends on the distribution of noise during the day, evening, and night; however noise levels described by L_{DN} and CNEL usually differ by 1 dBA or less. Quiet suburban areas typically have CNEL noise levels in the range of 40 to 50 CNEL, while areas near arterial streets are in the 50 to 60+ CNEL range (FTA 2018).

b. Groundborne Vibration

Groundborne vibration of concern in environmental analysis consists of the oscillatory waves that move from a source through the ground to adjacent buildings or structures and vibration energy may propagate through the buildings or structures. Vibration may be felt, may manifest as an audible low-frequency rumbling noise (referred to as groundborne noise), and may cause windows, items on shelves, and pictures on walls to rattle. Although groundborne vibration is sometimes noticeable in outdoor environments, it is almost never annoying to people who are outdoors. The

¹ Because DNL and CNEL are typically used to assess human exposure to noise, the use of A-weighted sound pressure level (dBA) is implicit. Therefore, when expressing noise levels in terms of DNL or CNEL, the dBA unit is not included.

primary concern from vibration is that it can be intrusive and annoying to building occupants at vibration-sensitive land uses and may cause structural damage.

Typically, ground-borne vibration generated by manmade activities attenuates rapidly as distance from the source of the vibration increases. Vibration amplitudes are usually expressed in peak particle velocity (PPV) or root mean squared (RMS) vibration velocity. The PPV and RMS velocity are normally described in inches per second (in/sec). PPV is defined as the maximum instantaneous positive or negative peak of a vibration signal. PPV is often used as it corresponds to the stresses that are experienced by buildings (Caltrans 2020).

High levels of groundborne vibration may cause damage to nearby building or structures; at lower levels, groundborne vibration may cause minor cosmetic (i.e. non-structural damage) such as cracks. These vibration levels are nearly exclusively associated with high impact activities such as blasting, pile-driving, vibratory compaction, demolition, drilling, or excavation. The American Association of State Highway and Transportation Officials (AASHTO) has determined vibration levels with potential to damage nearby buildings and structures; these levels are identified in Table 4.7-1.

Table 4.7-1 AASHTO Maximum Vibration Levels for Preventing Damage

Type of Situation	Limiting Velocity (in/sec)
Historic sites or other critical locations	0.1
Residential buildings, plastered walls	0.2–0.3
Residential buildings in good repair with gypsum board walls	0.4–0.5
Engineered structures, without plaster	1.0–1.5
Source: Caltrans 2020	

Numerous studies have been conducted to characterize the human response to vibration. The vibration annoyance potential criteria recommended for use by Caltrans, which are based on the general human response to different levels of groundborne vibration velocity levels, are described in Table 4.7-2.

Table 4.7-2 Vibration Annoyance Potential Criteria

Human Response	Vibration Level (in/sec PPV)	
	Transient Sources	Continuous/Frequent Intermittent Sources ¹
Severe	2.0	0.4
Strongly perceptible	0.9	0.10
Distinctly perceptible	0.25	0.04
Barely perceptible	0.04	0.01

in/sec = inches per second; PPV = peak particle velocity

Source: Caltrans 2020

¹ Continuous/frequent intermittent sources include impact pile drivers, pogo-stick compactors, crack-and-seat equipment, vibratory pile drivers, and vibratory compaction equipment.

c. Project Site Noise Environment

Sensitive Receivers

Noise exposure goals for various types of land uses reflect the varying noise sensitivities associated with those uses. The City of Palo Alto Comprehensive Plan defines noise-sensitive uses (“sensitive receptors”) as schools, hospitals, convalescent homes, senior and childcare facilities and public conservation land activities (Palo Alto, City of 2017). The nearest noise-sensitive receivers include single-family residences located along Olive Avenue immediately adjacent to the west of the area of proposed development. Additional sensitive receivers include residences approximately 330 feet southeast of the proposed development across Lambert Avenue.

Noise Measurements

The most common source of noise in the project site vicinity is vehicular traffic from Park Boulevard and railroad noise from the Caltrain tracks. To characterize ambient sound levels at and near the project site, three short term 15-minute and one long term 24-hour noise level measurements were conducted on October 10, 2021. Short-term Noise Measurement (ST) 1 was conducted at the northwestern edge of the project site to capture noise levels attributable to project site; ST2 was conducted approximately 380 feet east of the project site to capture ambient noise levels of the nearby auto-body shops along Lambert Avenue; and ST3 was conducted near the northeastern boundary of the project site to capture vehicular noise levels along Park Boulevard. Additionally, the long-term noise measurement was conducted near the center of the project site approximately 40 feet northeast from the centerline of Park Boulevard and 310 feet northeast from the centerline of Caltrain rail to capture vehicular noise levels along Park Boulevard, rail noise levels along Caltrain, and ambient noise levels near the center of the project site. Table 4.7-3 summarizes the results of the short-term noise measurements, Table 4.7-4 summarizes the results of the long-term noise measurements, and Figure 4.7-1 shows noise measurement locations.

Table 4.7-3 Project Site Short-Term Noise Monitoring Results

Measurement Location	Measurement Location	Sample Times ¹	Approximate Distance to Primary Noise Source	L _{eq} (dBA)	L _{min} (dBA)	L _{max} (dBA)
ST1	Western property boundary, adjacent to residences along Olive Avenue	10:10 – 10:25 a.m.	Approximately 105 feet to Olive Avenue centerline	56	47	67
ST2	South of project site, adjacent to Lambert Avenue	10:56 – 11:11 a.m.	Approximately 25 feet to Lambert Avenue	54	43	68
ST3	Southeast of project site, adjacent to Park Boulevard	11:22– 11:37 a.m.	Approximately 20 feet to Park Boulevard	56	42	71

dBA = A-weighted decibels; L_{eq} = equivalent noise level; L_{min} = minimum noise level, L_{max} = maximum noise level

¹Sample times shown in this table are the correct sample times. The date and time located in the raw data is not shown correctly due to an input error.

See Figure 4.7-1 for noise measurement locations; see Appendix G for full measurement details.

Table 4.7-4 Project Site Long-Term Noise Monitoring Results

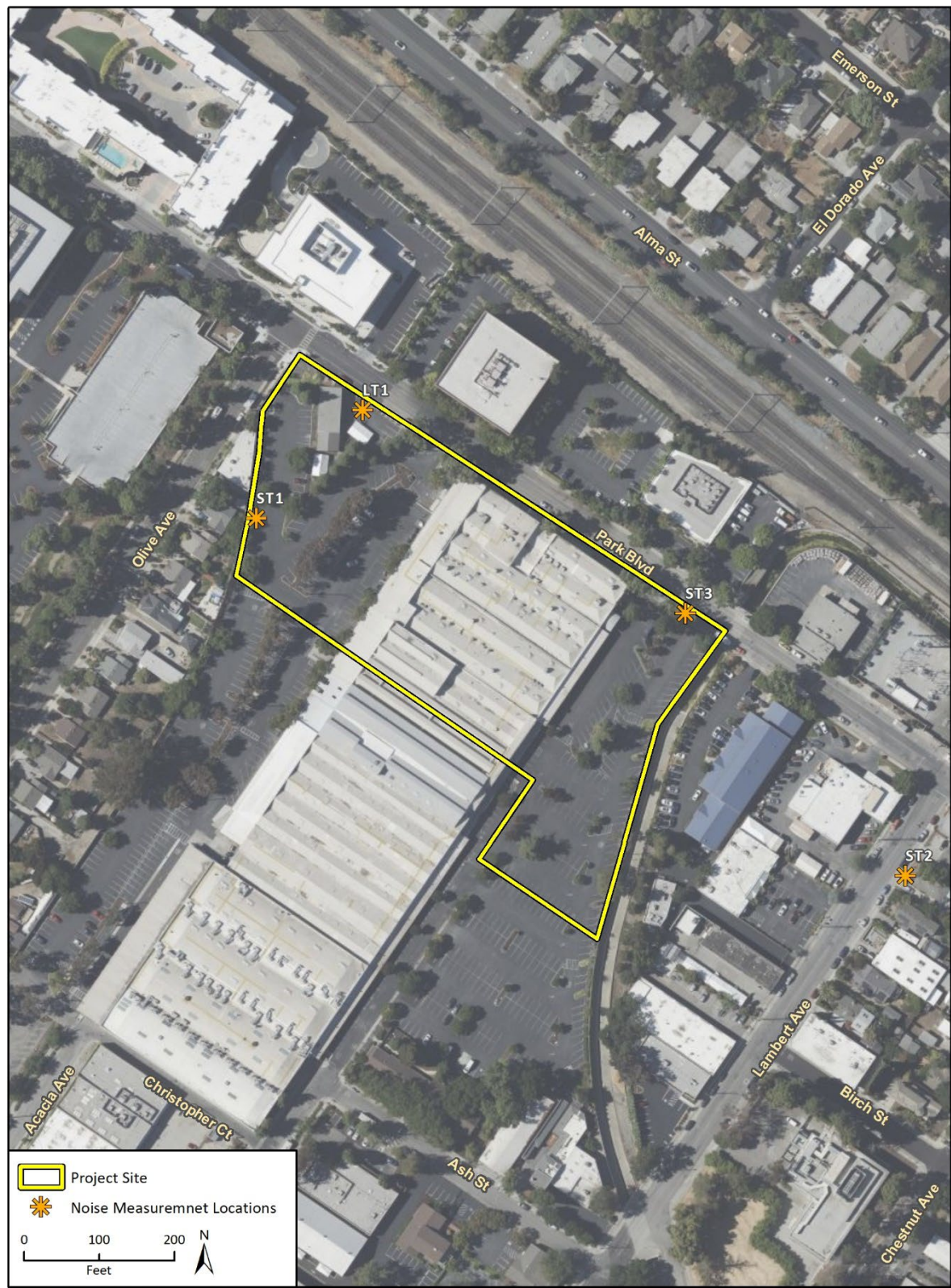
Sample Time	dBA L _{eq}	Sample Time ¹	dBA L _{eq}
24-hour Measurement – 1/10, 10/11			
11:56 a.m.	51	11:56 p.m.	46
12:56 p.m.	55	12:56 a.m.	43
1:56 p.m.	53	1:56 a.m.	46
2:56 p.m.	54	2:56 a.m.	44
3:56 p.m.	56	3:56 a.m.	48
4:56 p.m.	58	4:56 a.m.	48
5:56 p.m.	50	5:56 a.m.	52
6:56 p.m.	49	6:56 a.m.	57
7:56 p.m.	50	7:56 a.m.	57
8:56 p.m.	55	8:56 a.m.	56
9:56 p.m.	47	9:56 a.m.	54
10:56 p.m.	48	10:56 a.m.	60
24-hour Noise Level (dBA CNEL)			59

dBA = A-weighted decibels; L_{eq} = equivalent noise level; CNEL = community equivalent noise level

¹Sample times shown in this table are the correct sample times. The date and time located in the raw data is not shown correctly due to an input error.

See Figure 4.7-1 for noise measurement locations; see Appendix G for full measurement details.

Figure 4.7-1 Noise Measurement Locations



d. Regulatory Environment

Local

2030 Comprehensive Plan

The City's Comprehensive Plan Natural Environment Element includes goals and policies related to noise. This element establishes land use compatibility categories for community noise exposure (Table 4.5-5). For residential uses, hotels, and motels, the City identifies noise levels up to 60 dBA L_{dn} as normally acceptable and noise levels between 60 and 75 dBA L_{dn} as conditionally acceptable (Palo Alto, City of 2017).

Table 4.5-5 Palo Alto Land Use Compatibility for Community Noise Environments

Land Use Category	Exterior Noise Exposure L_{dn} or CNEL or dB		
	Normally Acceptable	Conditionally Acceptable	Unacceptable
Residential, Hotel and Motels	50-60	60-75	75+
Outdoor Sports and Recreation, Neighborhood Parks and Playgrounds	50-65	65-80	80+
Schools, Libraries, Museums, Hospitals, Personal Care, Meeting Halls, Churches	50-60	60-75	75+
Office Buildings, Business Commercial, and Professional	50-70	70-80	80+
Auditoriums, Concert Halls, and Amphitheaters	N/A	50-75	75+
Industrial, Manufacturing, Utilities, and Agriculture	50-70	75+	N/A

Source: City of Palo Alto 2017a

Palo Alto Municipal Code

The Palo Alto Municipal Code (PAMC) regulates noise primarily through the Noise Ordinance, which comprises Chapter 9.10 of the Code.

Section 9.10.030 of the PAMC states the following for residential property noise limits:

- a) No person shall produce, suffer or allow to be produced by any machine, animal or device, or any combination of same, on residential property, a noise level more than six dB above the local ambient at any point outside of the property plane.
- b) No person shall produce, suffer or allow to be produced by any machine, animal, or device, or any combination of same, on multi-family residential property, a noise level more than six dBA above the local ambient three feet from any wall, floor, or ceiling inside any dwelling unit on the same property, when the windows and doors of the dwelling unit are closed, except within the dwelling unit in which the noise source or sources may be located.

For commercial and industrial property noise limits, Section 9.10.040 of the PAMC states that no person shall produce, suffer or allow to be produced by any machine or device, or any combination of same, on commercial or industrial property, a noise level more than eight dBA above the local ambient at any point outside of the property plane.

Section 9.10.060 of the PAMC restricts construction activities to the hours of 8:00 a.m. to 6:00 p.m., Monday through Friday, and 9:00 a.m. to 6:00 p.m. on Saturday (City of Palo Alto 2020).

Construction is prohibited on Sundays and holidays (New Year's Day, Martin Luther King Day, Washington's Birthday, Memorial Day, Independence Day, Labor Day, Columbus Day, Veteran's Day, Thanksgiving Day, and Christmas Day). Construction, demolition, or repair activities must meet the following standards:

- No individual piece of equipment shall produce a noise level exceeding 110 dBA at a distance of 25 feet. If the device is housed in a structure on the property, the measurement shall be made outside the structure at a distance as close to 25 feet from the equipment as possible.
- The noise level at any point outside of the property plane of the project shall not exceed 110 dBA.
- The holder of a valid construction permit for a construction project in a non-residential zone shall post a sign at all entrances to the construction site upon commencement of construction, for the purpose of informing all contractors and subcontractors, their employees, agents, materialmen and all other persons at the construction site, of the basic requirements of this chapter.

4.7.2 Impact Analysis

a. Methodology and Significance Thresholds

As listed in Appendix G of the CEQA Guidelines, a project is considered to have a significant impact related to noise if it would result in:

1. Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies;
2. Generation of excessive groundborne vibration or groundborne noise levels; or
3. For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, exposure of people residing or working in the project area to excessive noise levels.

Noise Level Increases over Ambient Noise Levels

The operational and construction noise limits used in this analysis are set at reasonable levels at which a substantial noise level increase as compared to ambient noise levels would occur. Operational noise limits are lower than construction noise limits to account for the fact that permanent noise level increases associated with continuous operational noise sources typically result in adverse community reaction at lower magnitudes of increase than temporary noise level increases associated with construction activities that occur during daytime hours and do not affect sleep. Furthermore, these noise limits are tailored to specific land uses; for example, the noise limits for residential land uses are lower than those for commercial land uses. The difference in noise limits for each land use indicates that the noise limits inherently account for typical ambient noise levels associated with each land use. Therefore, an increase in ambient noise levels that exceeds these absolute limits would also be considered a substantial increase above ambient noise levels. As such, a separate evaluation of the magnitude of noise level increases over ambient noise levels would not provide additional analytical information regarding noise impacts and therefore is not included in this analysis.

Temporary Increases in Noise and Vibration

Construction and demolition noise were estimated using the FHWA Roadway Construction Noise Model (RCNM) (FHWA 2006). RCNM predicts construction related equipment noise levels for a variety of construction and demolition operations based on empirical data and the application of acoustical propagation formulas. Using RCNM, construction and demolition noise levels were estimated at noise sensitive receivers near the project site. RCNM provides reference noise levels for standard construction equipment, with an attenuation of 6 dBA per doubling of distance for stationary equipment. It is assumed that diesel engines would power all construction equipment, that construction equipment would not all operate at the same time or location, and that construction equipment would not be in constant use during the 8-hour operating day. Typical heavy construction equipment during project grading could include dozers, front-end loaders, and graders.

Variation in power imposes additional complexity in characterizing the noise source level from construction equipment. Power variation is accounted for by describing the noise at a reference distance from the equipment operating at full power and adjusting it based on the duty cycle² of the activity to determine the L_{eq} of the operation (FHWA 2018). Each phase of construction has a specific equipment mix, depending on the work to be accomplished during that phase. Each phase also has its own noise characteristics; some will have higher continuous noise levels than others, and some have high-impact noise levels. Based on information provided by the applicant, the potential high-intensity construction scenario includes a dozer, grader, and front-end loader working during grading to excavate and move soil. Therefore, the RCNM model was used to model noise from these pieces of equipment operating simultaneously.

Based on the City's Noise Ordinance, significant construction noise impacts would occur if individual pieces of equipment produce a noise level exceeding 110 dBA at a distance of 25 feet or if the noise level at any point outside of the property plane of the project exceeds 110 dBA.

The City of Palo Alto has not adopted specific numerical thresholds for groundborne vibration impacts. Because operation of the proposed residential project would not involve substantial vibration sources, this analysis focuses on construction vibration. Vibration limits used in this analysis to determine a potential impact to local land uses from construction activities are based on information contained in Caltrans' *Transportation and Construction Vibration Guidance Manual* (Caltrans 2020). Maximum recommended vibration limits by the American Association of State Highway and Transportation Officials (AASHTO) are identified in Table 4.7-6.

Table 4.7-6 AASHTO Maximum Vibration Levels for Preventing Damage

Type of Situation	Limiting Velocity (in/sec)
Historic sites or other critical locations	0.1
Residential buildings, plastered walls	0.2–0.3
Residential buildings in good repair with gypsum board walls	0.4–0.5
Engineered structures, without plaster	1.0–1.5
Source: Caltrans 2020	

Based on AASHTO recommendations, limiting vibration levels to below 0.4 in/sec PPV at residential structures would prevent structural damage (plastered walls is indicative of construction processes

² The cycle of operation of a machine or other device which operates intermittently rather than continuously.

that have not been common for over 100 years and are therefore not anticipated to be near project construction). These limits are applicable regardless of the frequency of the source. However, as shown in Table 4.7-7 and Table 4.7-8 potential human annoyance associated with vibration is usually different if it is generated by a steady state or a transient vibration source.

Table 4.7-7 Human Response to Steady State Vibration

PPV (in/sec)	Human Response
3.6 (at 2 Hz)–0.4 (at 20 Hz)	Very disturbing
0.7 (at 2 Hz)–0.17 (at 20 Hz)	Disturbing
0.10	Strongly perceptible
0.035	Distinctly perceptible
0.012	Slightly perceptible
Source: Caltrans 2020	

Table 4.7-8 Human Response to Transient Vibration

PPV (in/sec)	Human Response
2.0	Severe
0.9	Strongly perceptible
0.24	Distinctly perceptible
0.035	Barely perceptible
Source: Caltrans 2020	

Although groundborne vibration is sometimes noticeable in outdoor environments, it is almost never annoying to people who are outdoors and the vibration level threshold for human perception is assessed at occupied structures (FTA 2018). Therefore, vibration impacts are assessed at the structure of an affected property. As shown in Table 4.7-7, the vibration level threshold at which steady vibration sources are considered to be distinctly perceptible is 0.035 in/sec PPV. However, as shown in Table 4.7-8, the vibration level threshold at which transient vibration sources (such as construction equipment) are considered to be distinctly perceptible is 0.24 in/sec PPV. This analysis uses the distinctly perceptible threshold for purposes of assessing vibration impacts. Therefore, for the purposes of this impact analysis, vibration impacts would be significant if they would exceed 0.24 in/sec PPV at the nearby residences and 0.1 in/sec PPV at the historical building on the project site.

Permanent Increases in Ambient Noise

The analysis of permanent increases in ambient noise addresses several sources: general site activities (circulation of vehicles around site and in parking areas, conversations, and mail delivery and trash/recycling trucks), outdoor common open space areas, mechanical equipment including use of proposed heating ventilation and air conditioning (HVAC) units, and noise associated with the increase of traffic to and from the site.

In accordance with state requirements, City of Palo Alto Comprehensive Plan Policies N-6.14 and N-61, and Section 9.10.030(a) of the PAMC, operational noise would be significant if it would:

- Cause interior noise levels at nearby residential development to exceed 45 dBA L_{dn} (City of Palo Alto Comprehensive Plan Policy N-6.1); or

- Produce, suffer or allow to be produced by any machine, animal or device, or any combination of same, on residential property, a noise level more than 6 dB above the local ambient at any point outside of the property plane (PAMC Section 9.10.030[a]).

HVAC Units

Noise levels associated with HVAC units with exterior condensers were modeled using a point source noise level and distance attenuation to determine resulting noise levels at adjacent properties. The HVAC units used in this analysis is a 3-ton Carrier 38HDR060 split system condenser (see Appendix G for manufacturer's specifications). As shown in Table 4.7-9, an individual unit generates a sound power level of 72 dBA. This is equivalent to a sound pressure level of 54 dBA at 7 feet (see *Sound Propagation and Shielding* for a description of the difference between sound power level and sound pressure level).

Table 4.7-9 Modeled HVAC Noise Levels

Use/Description	Building Square Footage	Model	Estimated HVAC Tons	Estimated HVAC Units	Sound Power Level per Unit
Townhome Use	194,128	Carrier 38HDR060	273	91	72

See Appendix G for sample HVAC specification sheets and HVAC noise calculations.

The proposed project would include one HVAC unit for each dwelling unit for a total of 91 units. The dwelling units would be dispersed throughout the site at each unit, with the center of noise from the HVAC units being in the approximate center of the project site. The center of the site is approximately 310 feet from the nearest off-site sensitive receivers along Olive Avenue adjacent to the proposed development to the west. Therefore, the project's combined HVAC noise levels from 91 units were estimated at a distance of 310 feet.

Traffic Noise

The project would not make substantial alterations to roadway alignments or substantially change the vehicle classifications mix on local roadways. Therefore, the primary factor affecting off-site noise levels would be increased traffic volumes. Noise levels with and without project-generated traffic were developed based on algorithms and reference levels from the Federal Highway Administration's (FHWA's) Traffic Noise Model. Exterior traffic noise levels at the proposed residential exterior common use areas (open spaces) and residential building façades were calculated to determine noise-land use compatibility.

The project would generate additional vehicle trips that would increase noise levels on nearby roadways. As discussed in the project Transportation Analysis, the project is anticipated to generate 781 average daily trips (ADT), including 58 trips during the a.m. peak hour and 78 trips during the p.m. peak hour (W-Trans 2022).³ The Transportation Analysis study area includes roadway segments of Portage Avenue, Park Boulevard, Olive Avenue and El Camino Real (W-Trans 2022).

Project traffic intersection movements from the traffic study were used to estimate project ADT for each segment. In the Transportation Analysis, p.m. peak hour traffic was generally shown to consist of higher traffic volumes than the a.m. peak hour; therefore, p.m. peak hour traffic was utilized for conservative purposes (W-Trans 2022). Traffic volumes depicted in this analysis are based on the Transportation Analysis scenarios that include existing conditions, background conditions, and

³ ADT was derived from W-Trans. Transportation Analysis, which utilized 91 townhome dwelling units for the proposed project.

cumulative conditions. Background conditions are defined as existing peak hour volumes plus the 5-year estimated growth between the existing and cumulative model runs using growth rates. Additionally, the cumulative condition is the existing condition peak hour volumes plus anticipated forecasted growth for the year 2040 (W-Trans 2022).

Existing traffic volume estimates along the adjacent street segments to the project site combined with project-generated trips are shown in Table 4.7-10. Background volumes are shown in Table 4.7-11 and year 2040 cumulative traffic volumes are shown in Table 4.7-12.

Table 4.7-10 Average Daily Traffic under Existing and Existing Plus Project Conditions

Street	Segment	Existing ADT	Existing Plus Project ADT
Park Boulevard	Olive Avenue to Page Mill Road (West)	2,150	2,460
Park Boulevard	Lambert Avenue to Olive Avenue (East)	2,030	2,450
Olive Avenue	El Camino Real to Park Boulevard (South)	430	530
Park Boulevard	Lambert Avenue to Olive Avenue (West)	1,500	1,680
Park Boulevard	From the East to Lambert Avenue (East)	320	400
Lambert Avenue	El Camino Real to Park Boulevard (South)	1,360	1,460
El Camino Real	Portage Avenue to Olive Avenue (West))	22,080	22,880
El Camino Real	Lambert Avenue to Portage Avenue (East)	22,020	21,870
Portage Avenue	From project site to El Camino Real (North)	1,420	1,650

ADT = average daily trips.

Source: W-Trans 2022

Table 4.7-11 Average Daily Traffic under Background and Background Plus Project Conditions

Street	Segment	Background Without Project ADT	Background With Project ADT
Park Boulevard	Olive Avenue to Page Mill Road (West)	2,330	2,640
Park Boulevard	Lambert Avenue to Olive Avenue (East)	2,210	2,630
Olive Avenue	El Camino Real to Park Boulevard (South)	480	590
Park Boulevard	Lambert Avenue to Olive Avenue (West)	1,640	1,820
Park Boulevard	From the East to Lambert Avenue (East)	370	450
Lambert Avenue	El Camino Real to Park Boulevard (South)	1,490	1,590
El Camino Real	Portage Avenue to Olive Avenue (West))	24,620	24,700
El Camino Real	Lambert Avenue to Portage Avenue (East)	23,770	23,920
Portage Avenue	From project site to El Camino Real (North)	1,550	1,780

ADT = average daily trips.

Source: W-Trans 2022

Table 4.7-12 Average Daily Traffic under Cumulative (2040) and Cumulative Plus Project Conditions

Street	Segment	2040 Without Project ADT	2040 With Project ADT
Park Boulevard	Olive Avenue to Page Mill Road (West)	2,820	3,130
Park Boulevard	Lambert Avenue to Olive Avenue (East)	2,660	3,080
Olive Avenue	El Camino Real to Park Boulevard (South)	560	670
Park Boulevard	Lambert Avenue to Olive Avenue (West)	1,970	2,150
Park Boulevard	From the East to Lambert Avenue (East)	440	520
Lambert Avenue	El Camino Real to Park Boulevard (South)	1,790	1,890
El Camino Real	Portage Avenue to Olive Avenue (West))	29,660	29,740
El Camino Real	Lambert Avenue to Portage Avenue (East)	28,650	28,800
Portage Avenue	From project site to El Camino Real (North)	1,870	2,100

ADT = average daily trips.

Source: W-Trans 2022

The posted speed limit on Portage Avenue, Olive Avenue, Park Boulevard and Lambert Avenue is 25 miles per hour. The posted speed limit on El Camino Real is 35 miles per hour. The observed vehicle counts conducted during short term noise measurements was observed at 100 percent automobile; the absence of medium or heavy trucks is not considered representative of the typical mix of vehicles traveling near the project site. Therefore, the vehicle classification mix for modeling conservatively assumes a more typical breakdown of 97 percent automobiles, 2 percent medium trucks, and 1 percent heavy trucks. Traffic distribution through the day was modeled assuming 75 percent of total daily vehicle traffic during daytime hours, 15 percent of daily vehicle traffic during evening hours, and 10 percent of daily vehicle traffic during nighttime hours.

This analysis evaluates the project's effect on traffic noise based on the FTA's recommended standards. The FTA recommendations, listed in Table 4.5-13, are based on the idea that the allowable increase in exposure to traffic noise depends on existing noise levels; as the existing noise level rises, the allowable increase in noise exposure decreases.

As shown in Table 4.7-3, noise levels on Park Boulevard and closest to the adjacent sensitive receptors on Olive Avenue were modeled at 56 dBA. Therefore, based on Table 4.5-13, an increase in traffic noise of more than 3 dBA would be considered a significant traffic noise impact.

Table 4.5-13 Significance of Changes in Operational Roadway Noise Exposure

Existing Noise Exposure (dBA L_{dn} or L_{eq})	Criteria for Significant Noise Exposure Increase (dBA L_{dn} or L_{eq})
45-50	7
50-55	5
55-60	3
60-65	2
65-74	1
75+	0

Source: FTA 2018

Exposure of New Residents to Noise

The California Supreme Court in a December 2015 opinion (*BIA v. BAAQMD*) confirmed that CEQA is concerned with the impacts of a project on the environment, not the effects the existing environment may have on a project. Nevertheless, the state of California and City of Palo Alto have policies that address existing conditions (e.g., ambient noise) affecting a proposed project, addressed below.

As discussed in Section 4.7.1, *Project Noise Setting* and shown in Table 4.7-4, noise level measurements taken during the 24-hour measurement indicate ambient noise levels of approximately 59 dBA CNEL at the project site along Park Boulevard. The 24-hour noise measurement was taken at the site of the nearest building façade to Park Boulevard. These noise levels would include roadway noise levels and rail noise generated from the Caltrain corridor located approximately 250 feet north of the project building facades from the track centerline. Accordingly, ambient 24-hour noise levels at the nearest building façade would equal 59 dBA CNEL. Therefore, using noise levels from the 24-hour measurement for vehicle traffic and Caltrain corridor noise, ambient noise levels would equal approximately 59 dBA, which were used to determine the project site's land use compatibility.

b. Project Impacts and Mitigation

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

Impact N-1 CONSTRUCTION AND DEMOLITION ACTIVITIES ASSOCIATED WITH IMPLEMENTATION OF THE PROJECT WOULD INTERMITTENTLY GENERATE NOISE WITHIN AND ADJACENT TO THE PROJECT SITE. HOWEVER, CONSTRUCTION NOISE LEVELS WOULD NOT EXCEED THE APPLICABLE NOISE LEVEL THRESHOLDS. NOISE ASSOCIATED WITH OPERATION OF THE PROJECT WOULD BE GENERALLY SIMILAR TO EXISTING NOISE GENERATED BY NEARBY SINGLE-FAMILY RESIDENCES AND COMMERCIAL USES AND WOULD NOT CAUSE A SIGNIFICANT CHANGE IN AMBIENT NOISE LEVELS. THIS IMPACT WOULD BE LESS THAN SIGNIFICANT.

Construction

Construction activity would result in a temporary noise increase in the project vicinity, exposing surrounding sensitive receivers to increased noise levels. The project would involve site preparation, grading, building construction, paving, and architectural coating. Construction noise is typically loudest during activities that involve excavation and moving soil, such as site preparation and grading. Therefore, construction noise would be higher during the heavier periods of initial construction (i.e., grading) and would be lower during the later construction phases.

Project construction would occur nearest to single-family residences along Olive Avenue to the west of the project site. Over the course of a typical construction day, construction equipment would be located as close as 20 feet to adjacent residences to the west of the project site. The potential high-intensity construction scenario includes a dozer, grader, and front-end loader working during grading to excavate and move soil. At a distance of 20 feet, a dozer, grader, and front-end loader would generate a noise level of 93 dBA L_{max} (RCNM calculations are included in Appendix G).

As stated in Section 9.10.060 of the PAMC, the noise level threshold outside of the property line may not exceed 110 dBA L_{max} .⁴ Noise during the highest intensity phase of construction would be below the City's municipal threshold of 110 dBA L_{max} . Therefore, impacts from construction equipment would be less than significant.

It should also be noted that in accordance with the PAMC requirements, construction would be required to occur within the allowed hours of 8:00 a.m. to 6:00 p.m., Monday through Friday, and 9:00 a.m. to 6:00 p.m. on Saturday and is prohibited on Sundays and holidays. Therefore, construction would not disturb nearby residents during regular sleep hours.

Operation

General Site Activities

The noise sources on the project site after completion of construction are anticipated to be those that would be typical of a residential development such as vehicular noise on internal roadways and parking areas, landscaping maintenance, general conversations, and mail delivery and recycling/trash hauling activity. New parking spaces would be distributed through the project site next to internal roadways. Parking lot activities can generate instantaneous or short-term noise from car doors slamming, beeps, alarms, tire movements, engines, radios, and infrequent use of sweepers. However, parking lot noise would be consistent with existing commercial land uses on and in the vicinity of the project site. Parking lot noise also does not typically make a substantial contribution to hourly equivalent noise levels from transportation sources near the project site, relative to measured noise levels reaching 56 dBA L_{eq} along Park Boulevard and Olive Avenue.

Additional on-site noise sources such as landscape maintenance, low-speed traffic on internal roadways, conversations, and mail delivery and recycling/trash hauling also would be typical of noise generated by neighboring land uses and would not substantially contribute to overall ambient noise levels. Therefore, these on-site operations would have a less than significant impact on noise-sensitive receivers.

Outdoor Amenities

The proposed project includes a landscaped paseo at the northeast corner of the proposed area of development adjacent to Park Boulevard, which would include a fenced play area, fenced dog run, seating and benches, and a lawn area. The paseo would be approximately 120 feet from the nearest single-family residence on Olive Avenue. Noise-generating activities typical of these outdoor activity areas would involve dogs barking, children at play and general conversations. Since the paseo is located at a distance of 120 feet from the nearest single-family residences and an intervening one-story office building located at 245 Olive Avenue is located between the proposed paseo and sensitive receivers, noise levels coming from the paseo would rapidly attenuate to negligible levels. Furthermore, outdoor users would be subject to regulation and enforcement under the City's Noise Ordinance, specifically PAMC Section 9.10.040, which states that "no person shall produce, suffer or allow to be produced by any machine or device, or any combination of same, on commercial or industrial property, a noise level more than eight dBA above the local ambient at any point outside of the property plane." Therefore, noise impacts associated with the outdoor common open space area would be less than significant.

⁴ For conservative purposes of this analysis, we assume the noise level of 110 dBA is a value of L_{max} .

Mechanical Equipment Noise

The project would include 91 HVAC units for the proposed residential units. Pursuant to the PAMC, project impacts would be significant if exterior noise levels exceed ambient noise levels by more than 6 dBA at nearby residential properties, and by more than 8 dBA at commercial and industrial properties. As described under Section 4.7.2, *Methodology*, combined HVAC noise levels from the project site were calculated from the project's approximate center. At a distance of 310 feet from the center of the project site to the nearest sensitive receiver, one HVAC would generate a noise level of 22 dBA; the combined operation of 91 HVAC units at this distance would generate an estimated noise level of 41 dBA L_{eq} (see Appendix G for calculations). The addition of a 41 dBA L_{eq} noise source to the ambient noise level of 56 dBA L_{eq} at the nearest off-site sensitive receivers west of the project site boundary would increase noise levels by less than 1 dBA⁵. This would be lower than the City's threshold of a 6 dBA increase for residential properties over ambient noise levels, and lower than the 8 dBA increase for nearby commercial and industrial properties over ambient noise levels. Therefore, impacts related to HVAC equipment noise would be less than significant.

Off-site Traffic Noise Increases

The project would not make substantial alterations to roadway alignments or substantially change the vehicle classifications mix on local roadways. Therefore, the primary factor affecting off-site noise levels would be increased traffic volumes from the proposed project. The roadway segment volumes analyzed are discussed in Section 4.7.2 *Operational Noise Activity*. Noise levels with and without project-generated traffic for the existing volumes, background volumes, and year 2040 cumulative volumes are shown in Table 4.7-14, Table 4.7-15, and Table 4.7-16, respectively. As shown in the tables, traffic noise increases would be 1 dBA or less, which would not exceed the 3 dBA criterion for off-site traffic noise impacts. Impacts would be less than significant.

Table 4.7-14 Existing and Existing + Project Traffic Noise

Roadway	Segment	Speed (mph)	Existing Volume ¹ (ADT)	Existing + Project Volume ² (ADT)	Existing Noise Level ¹ (dBA)	Existing + Project Noise Level ² (dBA)	Noise Level Increase ³ (dBA)
Park Boulevard	Olive Avenue to Page Mill Road (West)	15	2,150	2,460	64	65	<1
Park Boulevard	Lambert Avenue to Olive Avenue (East)	15	2,030	2,450	64	65	<1
Olive Avenue	El Camino Real to Park Boulevard (South)	15	430	530	60	60	<1
Park Boulevard	Lambert Avenue to Olive Avenue (West)	15	1,500	1,680	63	63	<1
Park Boulevard	From the East to Lambert Avenue (East)	15	320	400	56	57	1
Lambert Avenue	El Camino Real to Park Boulevard (South)	25	1,360	1,460	65	65	<1
El Camino Real	Portage Avenue to Olive Avenue (West))	35	22,080	22,880	72	72	<1

⁵ Sound pressure levels (SPL) are added through the following logarithmic algebra formula: $SPL_{Total} = 10 \cdot \log_{10}(10^{SPL1/10} + 10^{SPL2/10})$

Roadway	Segment	Speed (mph)	Existing Volume ¹ (ADT)	Existing + Project Volume ² (ADT)	Existing Noise Level ¹ (dBA)	Existing + Project Noise Level ² (dBA)	Noise Level Increase ³ (dBA)
El Camino Real	Lambert Avenue to Portage Avenue (East)	35	22,020	21,870	72	72	<1
Portage Avenue	From project site to El Camino Real (North)	15	1,420	1,650	61	62	<1

dBA = A-weighted decibels; ADT = average daily trips; mph = miles per hour
¹ Transportation Analysis Existing PM Peak hour trips
² Transportation Analysis Project Trip Distribution
³ Numbers may not add up due to rounding.
 Source: W-Trans 2022; noise modeling worksheets provided in Appendix G

Table 4.7-15 Background and Background + Project Traffic Noise

Roadway	Segment	Speed (mph)	Background Volume ¹ (ADT)	Background + Project Volume ² (ADT)	Background Noise Level ¹ (dBA)	Background + Project Noise Level ² (dBA)	Noise Level Increase ³ (dBA)
Park Boulevard	Olive Avenue to Page Mill Road (West)	15	2,330	2,640	65	65	<1
Park Boulevard	Lambert Avenue to Olive Avenue (East)	15	2,210	2,630	64	65	<1
Olive Avenue	El Camino Real to Park Boulevard (South)	15	480	590	60	61	<1
Park Boulevard	Lambert Avenue to Olive Avenue (West)	15	1,640	1,820	63	64	<1
Park Boulevard	From the East to Lambert Avenue (East)	15	370	450	57	57	<1
Lambert Avenue	El Camino Real to Park Boulevard (South)	25	1,490	1,590	65	65	<1
El Camino Real	Portage Avenue to Olive Avenue (West))	35	24,620	24,700	72	72	<1
El Camino Real	Lambert Avenue to Portage Avenue (East)	35	23,770	23,920	72	72	<1
Portage Avenue	From project site to El Camino Real (North)	15	1,550	1,780	61	62	<1

dBA = A-weighted decibels; ADT = average daily trips; mph = miles per hour
¹ Transportation Analysis Background PM Peak hour trips
² Transportation Analysis Background plus Project Trip Distribution
³ Numbers may not add up due to rounding.
 Source: W-Trans 2022; noise modeling worksheets provided in Appendix G

Table 4.7-16 Cumulative Year 2040 and Cumulative Year 2040 + Project Traffic Noise

Roadway	Segment	Speed (mph)	2040 Volume ¹ (ADT)	2040+ Project Volume ² (ADT)	2040 Noise Level ¹ (dBA)	2040 + Project Noise Level ² (dBA)	Noise Level Increase ³ (dBA)
Park Boulevard	Olive Avenue to Page Mill Road (West)	15	2,820	3,130	65	66	<1
Park Boulevard	Lambert Avenue to Olive Avenue (East)	15	2,660	3,080	65	66	<1
Olive Avenue	El Camino Real to Park Boulevard (South)	15	560	670	61	61	<1
Park Boulevard	Lambert Avenue to Olive Avenue (West)	15	1,970	2,150	64	64	<1
Park Boulevard	From the East to Lambert Avenue (East)	15	440	520	57	58	<1
Lambert Avenue	El Camino Real to Park Boulevard (South)	25	1,790	1,890	66	66	<1
El Camino Real	Portage Avenue to Olive Avenue (West))	35	29,660	29,740	73	73	<1
El Camino Real	Lambert Avenue to Portage Avenue (East)	35	28,650	28,800	73	73	<1
Portage Avenue	From project site to El Camino Real (North)	15	1,870	2,100	62	63	<1

dBA = A-weighted decibels; ADT = average daily trips; mph = miles per hour

¹ Transportation Analysis Cumulative Year 2040 PM Peak Hour Trips

² Transportation Analysis Cumulative Year 2040 plus Project Trip Distribution

³ Numbers may not add up due to rounding.

Source: W-Trans 2022; noise modeling worksheets provided in Appendix G

Exposure of New Residents to Noise

As discussed in Section 4.7.1, *Project Noise Setting*, and shown in Table 4.7-4, noise level measurements taken during the 24-hour measurement indicate ambient noise levels of approximately 59 dBA CNEL at the project site from Park Boulevard roadway traffic and the Caltrain corridor. The 24-hour noise measurement was taken at the site of the nearest proposed building façade to Park Boulevard and the Caltrain corridor. Accordingly, ambient 24-hour noise levels at the nearest building façade to vehicle traffic along Park Boulevard and light rail from Caltrain would be equal to 59 dBA CNEL.

As described in Table 4.5-5, noise levels up to 60 dBA CNEL are considered normally acceptable for residential uses. Exterior noise levels at the proposed project building facades nearest to Caltrain rail lines and Park Boulevard would be approximately 59 dBA. Therefore, exterior noise levels would result in normally acceptable conditions according to the City's thresholds.

The use of standard modern building materials also would reduce exterior noise by at least 20 dBA within habitable rooms. In addition, the proposed residential building itself would shield residences in the interior of the site from roadway noise, providing further attenuation of ambient noise. With the reduction of at least 20 dBA in exterior-to-interior noise, it is estimated that new residences facing Park Boulevard would have interior noise levels of up to 39 dBA L_{dn}. Without further noise

reduction measures beyond standard building materials, this interior noise level would not exceed the City's standard of 45 dBA L_{dn} . Therefore, this impact would be less than significant

Mitigation Measures

Mitigation Measures would not be required.

Threshold: Would the project result in generation of excessive groundborne vibration or groundborne noise levels?

IMPACT N-2 CONSTRUCTION ACTIVITIES ASSOCIATED WITH IMPLEMENTATION OF THE PROPOSED PROJECT WOULD INTERMITTENTLY GENERATE GROUNDBORNE VIBRATION WITHIN AND ADJACENT TO THE PROJECT SITE. INSTITUTIONAL LAND USES WITH SENSITIVE DAYTIME ACTIVITIES COULD BE EXPOSED TO VIBRATION LEVELS EXCEEDING FTA GUIDELINES. ADDITIONALLY, VIBRATION COULD EXCEED CALTRANS STANDARDS FOR POTENTIAL DAMAGE TO HISTORICAL BUILDINGS DUE TO THE PROXIMITY OF CONSTRUCTION EQUIPMENT WITH VIBRATION LEVELS SIMILAR TO A LARGE DOZER. THIS IMPACT WOULD BE LESS THAN SIGNIFICANT WITH MITIGATION INCORPORATED.

Operation of the proposed residential project would not include substantial vibration sources. Thus, construction activities have the greatest potential to generate ground-borne vibration affecting nearby sensitive receivers. Construction activities known to generate excessive ground-borne vibration, such as pile driving, would not be required for project construction. The greatest anticipated source of vibration during general project construction activities would be from a dozer, which would be used during site preparation and grading activities and may be used approximately 25 feet from nearby residences and within 20 feet of the nearby historic building. As stated above, vibration impacts would be significant if they would exceed 0.24 in/sec PPV, which is the level at which vibration may be perceptible, or if it would exceed 0.1 in/sec PPV at the historical building on the project site which is the level at which structural damage may occur. The vibration damage threshold for buildings in good repair is 0.4 in/sec PPV.

At a distance of 25 feet, a dozer would create approximately 0.089 in/sec PPV (Caltrans 2020). This would equal a vibration level of 0.11 in/sec PPV at a distance of 20 feet.⁶ At a level of 0.089 in/sec PPV at the nearest residences, vibration would not be perceptible. Vibration levels would also be well below the damage thresholds for buildings in good repair.

Additionally, sleep hour disruption would not occur due the operation of equipment operating during the City's Municipal Code allowed hours of 8:00 a.m. to 6:00 p.m., Monday through Friday, and 9:00 a.m. to 6:00 p.m. on Saturday. In addition, construction would be prohibited on Sundays and holidays (New Year's Day, Martin Luther King Day, Washington's Birthday, Memorial Day, Independence Day, Labor Day, Columbus Day, Veteran's Day, Thanksgiving Day, and Christmas Day).

Vibration levels could exceed structural historic locations and other critical area structural damage impact to historical buildings of 0.1 in/sec PPV should equipment operate within 20 feet of the proposed structure. Therefore, temporary vibration impacts associated with a dozer (and other similar equipment) would be potentially significant.

Because the project involves residential uses, it would not include substantial vibration sources associated with operation. Operational vibration impacts would be less than significant.

⁶ $PPV_{Equipment} = PPV_{Ref} (20/D)^n$ (in/sec), PPV_{Ref} = reference PPV at 20 feet, D = distance, and $n = 1.1$

Mitigation Measures

N-1 *Vibration Reduction*

The applicant shall retrofit the remaining historical building at 200 Portage/340 Portage to withstand construction vibration up to 0.4 in/sec PPV or higher (the Caltrans threshold for buildings in good repair) prior to demolition or construction activities. The structure's ability to accommodate vibration at the specific level shall be verified by a qualified engineer.

Significance After Mitigation

A dozer and other similar construction equipment could generate vibration levels above 0.1 in/sec PPV should they operate within 22 feet of the existing on-site historic structure. With implementation of Mitigation Measure N-1, the historic building would be upgraded to a building in good repair that can withstand construction vibration up to 0.4 in/sec PPV or higher. Construction equipment would not exceed 0.4 in/sec PPV at the building. The impact would be less than significant after mitigation.

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

Impact N-3 THE PROJECT SITE IS LOCATED OUTSIDE OF NOISE CONTOURS ASSOCIATED WITH AIRPORTS. THEREFORE, NEW DEVELOPMENT UNDER THE PROPOSED PROJECT WOULD NOT BE EXPOSED TO EXCESSIVE NOISE LEVELS FROM AIRCRAFT OPERATIONS AND NO IMPACT WOULD OCCUR.

The project site is located approximately 2.4 miles northeast of the closest airport, the Palo Alto Airport. The project would not be located within the noise contours of the airport (Santa Clara County Airport Land Use Commission 2008). Therefore, no substantial noise exposure from airport noise would occur to construction workers, users, or employees of the project, and no impacts would occur.

Mitigation Measures

Mitigation measures would not be required.

c. Cumulative Impacts

Short-Term Cumulative Construction Phase Impacts

Construction-related noise and vibration are typically considered localized impacts, affecting only receivers closest to construction activities. Therefore, unless construction of cumulative project phases, including those proposed under the project, occur in proximity to each other (i.e., several hundred feet), and simultaneously, noise and vibration from individual construction projects have a small chance of combining to create significant cumulative impacts. New development identified in Table 3-1 could result in a cumulative increase in short-term construction noise. However, noise from these projects would be localized and would not combine substantially with noise sources from the project site at nearby sensitive receivers west of the project site. Therefore, short-term

construction would not contribute to significant cumulative groundborne noise and vibration impacts.

Long-Term Cumulative Operational Traffic Noise Impacts

Future traffic noise was analyzed in a cumulative, future scenarios (background; background plus proposed; cumulative year 2040 plus proposed; cumulative year 2040 plus approved), and traffic noise increases from the proposed project would not exceed applicable thresholds. Traffic noise analyzed for the project is included above in Table 4.7-10, Table 4.7-11, and Table 4.7-12

New development associated with cumulative projects (see Table 3-1) would include stationary equipment associated with parking facilities and mechanical equipment (HVAC units). However, noise from these projects would be localized and would not combine substantially with noise sources from the project site at nearby sensitive receivers west of the project site. Implementation of the proposed project would not involve substantial vibration sources associated with operation, and the types of surrounding land uses (residential and commercial) to the project site would not be expected to involve substantial vibration sources that would cumulatively combine with project site vibration sources. Therefore, operational stationary noise and vibration sources would not combine with other area sources to result in a substantial increase in cumulative noise and vibration. Cumulative impacts would be less than significant.

Cumulative development would result in stationary (non-traffic) operational noise increases in the project vicinity. Based on the long-term stationary noise analysis, impacts from the proposed project's operational noise would be less than significant. Because noise dissipates as it travels away from its source, noise impacts associated with on-site activities and other stationary sources would be limited to the project site and vicinity. Additionally, on-site operational noise sources including mechanical equipment, delivery trucks, and trash/recycling trucks would be similar to existing noise from nearby developments. Therefore, stationary noise sources from the planned or pending projects would not have a significant cumulative impact at noise sensitive receptors surrounding the project site. The project would not result in a considerable contribution to a significant impact from on-site operational noise.

This page intentionally left blank.

4.8 Transportation

This section analyzes the proposed project's impacts related to the change in vehicle miles traveled (VMT). For informational purposes, effects to the local transportation and circulation system are also addressed. The analysis in this section is primarily based on a Local Transportation Analysis prepared for the project by W-Trans (W-Trans 2022), which is included as Appendix H to this EIR.

4.8.1 Setting

a. Existing Local Roadway Network

The project site and vicinity are served by a network of arterials, collectors, and local streets. Through traffic is generally served by arterial streets, while collector streets connect arterials to local streets and land uses. Local streets provide direct access to land uses. The study area roadways are summarized below.

El Camino Real (State Route 82) is a north-south principal arterial roadway that provides local and regional access between San Francisco and San Jose. This road has three travel lanes in each direction and one to two leftturn lanes at major driveways and intersections. Within the study area, the northbound and southbound travel lanes are separated by a median. El Camino Real has a posted speed limit of 35 miles per hour (mph).

Park Boulevard is a two-lane north-south collector street providing access between the Evergreen Park, Ventura, and Charleston Meadow Neighborhoods. Park Boulevard has a posted speed limit of 25 mph.

Page Mill Road is a four-lane, east-west principal arterial which provides access between Highway 101 and Interstate 280 and El Camino Real. Within the study area, Page Mill Road has a posted speed limit of 35 mph.

b. Traffic Conditions

Analysis Methodology

This section uses the metric of VMT, as described below, to analyze transportation-related impacts consistent with Senate Bill 743 and the state CEQA guidelines. Pursuant to California Public Resources Code section 21099(b)(2) and CEQA Guidelines Section 15064.3, "a project's effect on automobile delay shall not constitute a significant environmental impact." Because the City of Palo Alto has updated its CEQA thresholds in accordance with state regulations, this analysis does not make significance conclusions with respect to impacts related to automobile delay, which is typically described as "Level of Service" (LOS). Although LOS is no longer the City's metric for analyzing traffic impacts under CEQA, this section describes traffic operations at the studied intersections in terms of LOS for informational purposes.

Vehicle Miles Traveled

"Vehicle miles traveled" refers to the amount and distance of automobile travel "attributable to a project." VMT re-routed from other origins or destinations as the result of a project would not be attributable to a project except to the extent that the re-routing results in a net increase in VMT. Daily VMT per resident is the average number of vehicle miles that a resident in a given area travels

per day. One factor that leads to a higher relative daily VMT per resident is an imbalance of jobs and housing availability in an area. Palo Alto is in a part of the Bay Area that has a surplus of jobs relative to the supply of housing. The large supply of jobs in Palo Alto, Mountain View and other neighboring cities results in relatively long commute lengths for many employees, particularly those commuting from residences in the East Bay and San Francisco. According to the Santa Clara Countywide VMT Evaluation Tool (Version 2), the countywide VMT per capita (the number of daily miles driven per resident) is 13.33 miles (W-Trans 2022; Appendix H).

Study Intersections

For informational purposes, traffic conditions were studied at seven intersections in the vicinity of the project site:

1. **Park Boulevard/Page Mill Road** is a signalized, four-legged intersection. Marked crosswalks curb ramps and pedestrian signals are provided on all four legs.
2. **Park Boulevard/Olive Avenue** is an unsignalized, three-legged intersection with the eastbound Olive Avenue approach stop-controlled. There is a crosswalk with high visibility markings and pedestrian crossing signage on the north and south legs. Pedestrian curb ramps are provided on all four corners.
3. **Park Boulevard/Lambert Avenue** is an unsignalized, three-legged intersection with all-way stop-control. Although there are pedestrian curb ramps at each corner, marked crosswalks are not provided on any of the four legs.
4. **El Camino Real/Page Mill Road** is a signalized, four-legged intersection with protected left-turn phasing on the east-west approaches and split-phase operation on the north-south approaches. Marked crosswalks and pedestrian signals are provided on all four legs. This intersection is operated by Caltrans and is part of the Santa Clara County Congestion Management Program (CMP) network.
5. **El Camino Real/Olive Avenue** is an unsignalized three-legged intersection with the terminated westbound Olive Avenue approach stop-controlled. Although there are pedestrian curb ramps at each corner, marked crosswalks are not provided on any of the legs. A driveway on the west side of El Camino Avenue acts as a fourth leg.
6. **El Camino Real/Portage Avenue** is a signalized three-legged intersection with the westbound Portage Avenue approach stop-controlled. There are marked crosswalks on the north and east legs. Pedestrian curb ramps exist at each corner. A driveway on the east side of El Camino Real acts as a fourth leg. This intersection is operated by Caltrans.
7. **El Camino Real/Lambert Avenue** is an unsignalized three-legged intersection with the westbound Lambert Avenue approach stop-controlled. Marked crosswalks are not provided on any of the intersection legs.

Figure 4.8-1 shows the locations and lane geometries of these intersections.

Figure 4.8-1 Study Intersections Locations and Lane Geometries



To establish baseline traffic conditions at the studied intersections, traffic volumes were collected during the a.m. and p.m. peak hours on November 4, 2021, while local schools were in session. These counts gathered in November 2021 were adjusted to approximate traffic demands which would have been unaffected by the COVID-19 pandemic. The peak periods were observed between 7:00 a.m. to 9:00 a.m. and 4:00 p.m. to 6:00 p.m. Through a review of available historical traffic counts as well as anticipated traffic projections for the study area as documented in the City of Palo Alto General Plan, adjustment factors of 1.44 and 1.59 were determined for the a.m. and p.m. peak hours, respectively. Existing peak hour traffic counts are provided in Appendix H.

This section uses the metric of VMT to analyze transportation-related impacts. Although “Level of Service” (LOS) is no longer the City’s metric for analyzing traffic impacts under CEQA, this section also describes traffic operations at the studied intersections in terms of LOS for informational purposes. LOS is a qualitative description of traffic operations from the vehicle driver perspective and consists of the delay experienced by the driver at the intersection. It ranges from LOS A, with no congestion and little delay, to LOS F, with excessive congestion and delays. Intersection LOS under existing conditions was analyzed using the TRAFFIX software program.

Existing Intersection Operations

Table 4.8-1 shows existing LOS during both a.m. and p.m. peak hours at the 7 studied intersections. Under existing conditions, all intersections are operating acceptably during both peak hours evaluated, except the stop-controlled approaches to the unsignalized intersections of El Camino Real/Olive Avenue and El Camino Real/Lambert Avenue, which operate at LOS F during each peak hour. Appendix H provides the complete LOS modeling results.

Table 4.8-1 Intersection Operations under Existing Conditions

Intersection	AM Peak		PM Peak	
	LOS	Delay	LOS	Delay
1. Park Boulevard/Page Mill Road	A	7.1	A	5.9
2. Park Boulevard/Olive Avenue Eastbound (Olive Avenue) Approach	A <i>B</i>	1.2 <i>10.4</i>	A <i>B</i>	0.7 <i>10.2</i>
3. Park Boulevard/Lambert Avenue	A	7.4	A	7.4
4. El Camino Real/Page Mill Road	D	44.5	E+	57.3
5. El Camino Real/Olive Avenue Westbound (Olive Avenue) Approach	A F	4.2 **	C F	24.1 **
6. El Camino Real/Portage Avenue	A	8.7	A	7.9
7. El Camino Real/Lambert Avenue Westbound (Lambert Avenue) Approach	A F	6.8 **	A F	8.0 **

Notes:

Bold text denotes deficient operation.

Results for minor approaches to two-way stop-controlled intersections are indicated in *italics*

Delay is measured in average seconds per vehicle.

LOS = Level of Service

** = delay greater than 120 seconds

Source: W-Trans 2022; Appendix H

c. Transit Access and Circulation

Development sites which are located within a 0.5-mile (2,640-foot) walk of a transit stop are generally considered to be adequately served by transit.

Santa Clara Valley Transportation Authority (VTA)

The Santa Clara Valley Transportation Authority (VTA) provides fixed route bus service and light rail train service in Santa Clara County. Two bicycles can be carried on most VTA buses. Bike rack space is on a first-come, first-served basis. Additional bicycles are allowed on VTA buses at the discretion of the driver.

Within a 0.5-mile walk of the project site there are bus stops for routes 22, 89, 522, Rapid 522, Express 101, Express 102, and Express 103. The combined service areas of these routes provide access between the project site and a variety of destinations such as the Palo Alto Transit Center, Palo Alto VA Hospital, Stanford Research Park, Santa Clara University, Winchester Light Rail Station, Santa Teresa Light Rail Station, Downtown San Jose, and Eastridge Transit Center. Bus service for these routes is generally available on a daily basis for 24 hours a day at 15- to 30- minute headways.

Dial-a-ride, also known as paratransit or door-to-door service, is available for those who are unable to independently use the transit system due to a physical or mental disability. VTA Paratransit is designed to serve the needs of individuals with disabilities within Palo Alto and Santa Clara County.

Dumbarton Express

The Dumbarton Express service is provided through a consortium of AC Transit, Bay Area Rapid Transit (BART), Union City Transit, Caltrain, SamTrans and the VTA. This service is provided on weekdays as an express bus service across the Dumbarton Bridge, connecting Palo Alto and Menlo Park with Union City, Fremont, and Newark. Route DB1 provides services from the Union City BART Station to the Stanford research park and operates from 5:10 a.m. to 8:30 p.m. with headways ranging from 15 to 25 minutes depending on the time of day. The nearest bus stop for Route DB1 is located approximately 0.6 miles away from the project site at the intersection of Page Mill Road/Ramos Way. Weekend service is not provided on Route DB1.

Stanford Research Park Shuttle

The Research Park shuttle provides rides from the Palo Alto Transit Center to the Research Park during the morning commute period and back to the Palo Alto Transit Center during the evening commute. Shuttles are typically available at 30-minute headways between 7:00 a.m. to 10:00 a.m. in the morning and 3:20 p.m. to 7:00 pm in the evening. The nearest shuttle stop for this service is located approximately 0.6 miles away at the intersection of Page Mill Road/Ramos Way.

Caltrain

Caltrain is the commuter rail line serving the San Francisco Peninsula. It connects Palo Alto with San Francisco to the north and San Jose and Gilroy to the south. The California Avenue Caltrain Station is located at 101 California Avenue which is approximately 0.4 miles (or 2,000 feet) from the project site. Weekday train service is provided at this station with both northbound and southbound trains at one-hour headways from 8:00 a.m. to 11:00 p.m.

Both bicycle racks and lockers are provided at the train station. Bicycle racks are available on a first-come, first-served basis, while lockers must be reserved. Paid vehicle parking is available at the station for riders.

d. Pedestrian Conditions

Pedestrian facilities include sidewalks, crosswalks, pedestrian signal phases, curb ramps, curb extensions, and various streetscape amenities such as lighting, benches, etc. In general, a network of sidewalks, crosswalks, pedestrian signals, and curb ramps provide access for pedestrians near the project site.

- **Park Boulevard.** Continuous sidewalks are provided along both sides of Park Boulevard between Page Mill Road and Lambert Avenue, with curb ramps and overhead lighting provided at intersections. Crosswalks are provided at the intersection with Olive Avenue.
- **El Camino Real.** Continuous sidewalks are provided along both sides of El Camino Real between Page Mill Road and Lambert Avenue, with curb ramps and overhead lighting provided at intersections. Crosswalks are provided at the intersection with Portage Avenue.
- **Page Mill Road.** On the south side of Page Mill Road between El Camino Real and Park Boulevard there are continuous sidewalks, with curb ramps and overhead lighting provided at intersections.
- **Olive Avenue.** Continuous sidewalks are provided along both sides of Olive Avenue between El Camino Real and Park Boulevard, with curb ramps and overhead lighting provided at intersections. Crosswalks are provided at the intersection with Park Boulevard.
- **Portage Avenue.** Continuous sidewalks are provided along both sides of Portage Avenue between El Camino Real and Ash Street, with curb ramps and overhead lighting provided at intersections.

e. Bicycling Conditions

The Highway Design Manual, Caltrans, 2017, classifies bikeways into four categories:

- **Class I Multi-Use Path.** A completely separated right-of-way for the exclusive use of bicycles and pedestrians with cross flows of motorized traffic minimized.
- **Class II Bike Lane.** A striped and signed lane for one-way bike travel on a street or highway.
- **Class III Bike Route.** Signing only for shared use with motor vehicles within the same travel lane on a street or highway.
- **Class IV Bikeway.** Also known as a separated bikeway, a Class IV Bikeway is for the exclusive use of bicycles and includes a separation between the bikeway and the motor vehicle traffic lane. The separation may include, but is not limited to, grade separation, flexible posts, inflexible physical barriers, or on-street parking.

In the project vicinity, Class II bike lanes exist on Park Boulevard between California Avenue and Lambert Avenue. Bicyclists ride in the roadway and/or on sidewalks along all other streets within the project study area. Table 4.8-2 summarizes the existing and planned bicycle facilities in the project vicinity, as contained in the *City of Palo Alto Bicycle & Pedestrian Transportation Plan*, 2012.

Table 4.8-2 Bicycle Facilities in Project Vicinity

Facility	Class	Length (Miles)	Begin Point	End Point
Existing				
Page Mill Road	II	1.4	El Camino Real	Berry Hill Court
Park Boulevard	II	0.6	California Avenue	Lambert Avenue
Planned				
Page Mill Road	I	0.48	Hanover Street	El Camino Real
El Camino Real	II	1.20	Page Mill Road	Maybell Avenue
Portage Avenue	II	0.27	El Camino Real	Park Boulevard

Sources: W-Trans 2022; Appendix H

f. Regulatory Framework

This section describes applicable state, regional, and local laws, ordinances, regulations, and standards governing transportation and traffic, which must be adhered to before and during project implementation.

State

State Senate Bill 375

Senate Bill (SB) 375, signed in August 2008, directs each of the state's 18 major Metropolitan Planning Organizations to prepare a "sustainable communities strategy" (SCS) that contains a growth strategy to meet emission targets for inclusion in the Regional Transportation Plan (RTP). On September 23, 2010, the California Air Resources Board (CARB) adopted final regional targets for reducing greenhouse gas (GHG) emissions from 2005 levels by 2020 and 2035.

The intent of SB 375 is to use the Regional Transportation Plan and Sustainable Communities Strategy (RTP/SCS) to integrate regional land use, regional housing need allocations (RHNA), environmental, and transportation planning to ensure efficient regional planning in the future that leads to reduced greenhouse gas emissions from land and transportation uses. As a result of SB 375, preparation of local RHNA Plans are required to be coordinated and consistent with the RTP/SCS for the length of the housing element cycle. Local governments play a large role in helping to develop the transportation and land use scenarios used in the SCS development process.

State Senate Bill 743

Senate Bill (SB) 743 was signed into law by Governor Brown in 2013 and tasked the State Office of Planning and Research (OPR) with establishing new criteria for determining the significance of transportation impacts under the California Environmental Quality Act (CEQA). SB 743 requires the new criteria to "promote the reduction of greenhouse gas emissions, the development of multimodal transportation networks, and a diversity of land uses." It also states that alternative measures of transportation impacts may include "vehicle miles traveled, vehicle miles traveled per capita, automobile trip generation rates, or automobile trips generated."

On September 27, 2013, California Governor Jerry Brown signed SB 743 into law and started a process that changes transportation impact analysis as part of CEQA compliance. SB 743 requires

the Governor's OPR to identify new metrics for identifying and mitigating transportation impacts within CEQA. In January 2018, OPR transmitted its proposed CEQA Guidelines implementing SB 743 to the California Natural Resources Agency for adoption, and in January 2019 the Natural Resources Agency finalized updates to the CEQA Guidelines, which incorporated SB 743 modifications, and are now in effect. SB 743 changed the way that public agencies evaluate the transportation impacts of projects under CEQA, recognizing that roadway congestion, while an inconvenience to drivers, is not itself an environmental impact (Public Resource Code, § 21099 (b)(2)). In addition to new exemptions for projects consistent with specific plans, the CEQA Guidelines replaced congestion-based metrics, such as auto delay and level of service, with VMT as the basis for determining significant impacts, unless the Guidelines provide specific exceptions.

California Building Code

California provides minimum standards for building design through the California Building Code (CBC), which is located in Part 2 of Title 24 of the California Code of Regulations. The CBC is based on the 1997 Uniform Building Code with modifications specific for California conditions. The CBC provides fire and emergency equipment access standards for public roadways, which include specific width, grading, design and other specifications for roads which provide access for fire apparatus. Street modifications in the City of Palo Alto are subject to these and other modified State standards. The City of Palo Alto adopted the 2019 edition of the CBC in 2019.

Regional Agencies, Plans, and Policies

Metropolitan Transportation Commission and Association of Bay Area Governments: Plan Bay Area 2040

The Metropolitan Transportation Commission (MTC) serves the nine-county Bay Area as the transportation planning, coordination, and financing agency and the metropolitan planning organization (MPO). The Association of Bay Area Governments (ABAG) serves as a regional planning agency for the Bay Area and provides resources for local governments to accommodate growth trends in land use and housing, environmental protection, and disaster resilience to name a few key issue areas.

MTC, ABAG, and cities and counties throughout the Bay Area prepared the current RTP, *Plan Bay Area 2040*, which was adopted by MTC on July 26, 2017. *Plan Bay Area 2040* is an integrated long-range transportation and land use/housing plan intended to support growth in the Bay Area, provide more housing and transportation choices, and reduce transportation-related pollution. It also includes finance strategies to implement the plan.

State and federal law requires the RTP to be updated at least every four years to respond to emerging regional growth issues and reflect new funding forecasts. The next update to *Plan Bay Area*, called *Plan Bay Area 2050*, is in progress and scheduled to be adopted in summer 2021.

Santa Clara Valley Transportation Authority

The Santa Clara Valley Transportation Authority is an independent special district that provides transportation options throughout Santa Clara Valley, and oversees several transportation programs such as the Congestion Management Program (CMP) and Bicycle Program.

The CMP describes the VTA's strategies for addressing congestion problems and monitoring compliance. The CMP contains level of service (LOS) standards for highways and arterials,

multimodal performance standards, a capital improvement program, and a travel demand management (TDM) program (VTA 2017). The City of Palo Alto uses a minimum LOS standard of LOS D for its intersections not monitored as part of the VTA CMP.

The VTA prepared the *Santa Clara Countywide Bicycle Plan* (SCCBP) and Bicycle Technical Guidelines (BTG). The SCCBP provides a foundation for maintaining and enhancing the countywide bicycle network, which contains over 800 miles of bikeways (VTA 2018). The BTG contains standards and provides guidance for planning, designing, operating, retrofitting, and maintaining roadways and bikeways throughout the county and City.

Santa Clara Countywide Trails Master Plan

The Santa Clara Countywide Trails Master Plan is an element of the Parks and Recreation Section of the County's General Plan, which envisions a comprehensive network of over 800 miles of regional, sub-regional, and connector trails throughout Santa Clara County (Santa Clara County Parks 2022). Santa Clara County Parks adopted the Santa Clara County Countywide Trails Master Plan Update on November 14, 1995, which aims to build a realistic trail system that effectively meets the needs of County residents; respect private property rights through due process in the detail planning and design of trails; provide responsible trail management, inform the trail user that the idea of "shared-use" includes respecting adjacent land uses; accept responsibility for any liability arising from the public's use of County trails; and implement trails involving private property only when the landowner is a willing participant in the process (Santa Clara County Parks 1995).

Local Plans and Policies

2030 Comprehensive Plan

The Transportation Element of the City's 2030 Comprehensive Plan (City of Palo Alto 2017a) contains several goals and policies pertaining to the improvement of transportation facilities and reducing project impacts. The following goals, policies, and programs apply to the project:

- **Policy T-1.2:** Collaborate with Palo Alto employers and business owners to develop, implement and expand comprehensive programs like the TMA to reduce single-occupant vehicle commute trips, including through incentives.
 - **Program T1.2.3:** Formalize TDM requirements by ordinance and require new developments above a certain size threshold to prepare and implement a TDM Plan to meet specific performance standards. Require regular monitoring/reporting and provide for enforcement with meaningful penalties for non-compliance. The ordinance should also: [...] Require new development projects to pay a Transportation Impact Fee for all those peak-hour motor vehicle trips that cannot be reduced via TDM measures. Fees collected would be used for capital improvements aimed at reducing vehicle trips and traffic congestion.
- **Policy T-1.17:** Require new office, commercial, and multi-family residential developments to provide improvements that improve bicycle and pedestrian connectivity as called for in the 2012 *Palo Alto Bicycle + Pedestrian Transportation Plan*.
- **Policy T-5.1:** All new development projects should manage parking demand generated by the project, without the use of on-street parking, consistent with the established parking regulations. As demonstrated parking demand decreases over time, parking requirements for new construction should decrease.

- **Policy T-5.6:** Strongly encourage the use of below-grade or structured parking, and explore mechanized parking instead of surface parking for new developments of all types while minimizing negative impacts including on groundwater and landscaping where feasible.
- **Policy T-5.7:** Require new or redesigned parking lots to optimize pedestrian and bicycle safety.

Sustainability/Climate Action Plan Framework and 2018-2020 Sustainability Implementation Plan

The City adopted the Sustainability/Climate Action Plan Framework (S/CAP) in November 2016, which is a strategic plan that sets direction and overall goals for the City to reduce GHG emissions to 80 percent below 1990 levels by 2030. To meet the City's reduction target, the S/CAP includes several mobility strategies aimed at developing multimodal transportation options to minimize the use of personal vehicles, encouraging land use patterns that reduce congestion and climate impacts, and promoting electric vehicle charging infrastructure (City of Palo Alto 2021).

The City's 2018-2020 Sustainability Implementation Plan (SIP) contains specific actions focused around energy use, mobility, electric vehicles, and water use to successfully implement the S/CAP. SIP mobility actions are aimed at reducing single-occupancy vehicle (SOV) travel by encouraging ride sharing, transit use, bike sharing, and providing flexible and responsive first- and last-mile transportation solutions (City of Palo Alto 2017).

Palo Alto Municipal Code: Title 10 Vehicles and Traffic

Palo Alto Municipal Code Title 10 regulates vehicle and traffic operations within the City, which includes traffic-control devices, pedestrian safety, bicycle safety and designated bike paths, and general vehicle and traffic safety.

4.8.2 Impact Analysis

a. Methodology and Significance Thresholds

Consistent with Appendix G of the State CEQA Guidelines, the project would have a significant impact on transportation 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 use (e.g., farm equipment); or
4. Result in inadequate emergency access.

Traffic-Related Impacts

To implement SB 743, the CEQA Guidelines have been updated to change the criteria for determining what constitutes a significant traffic-related environmental impact to rely upon quantification of vehicle miles traveled (VMT) instead of LOS. As of July 1, 2020, the VMT-based approach in Section 15064.3 of the CEQA Guidelines applies statewide for the purpose of assessing traffic-related impacts under CEQA. As a result, this analysis uses the metric of VMT to determine the project's traffic-related impact. Section 15064.3(b)(1) of the CEQA Guidelines states that land use "projects that decrease vehicle miles traveled in the project area compared to existing

conditions should be presumed to have a less than significant transportation impact.” According to the Technical Advisory on Evaluating Transportation Impacts, published by the Governor’s Office of Planning and Research in December 2018, a 15 percent reduction in VMT per capita from existing development is “generally achievable” and supportive of State goals to reduce greenhouse gas emissions (OPR 2018). However, State guidance allows localities to set their own VMT standards based on substantial supporting evidence.

On June 15, 2020, the Palo Alto City Council adopted a resolution setting locally applicable CEQA thresholds of significance for VMT (City of Palo Alto 2020). Under these new thresholds, redevelopment projects are first analyzed to determine whether the new development would result in a net increase in VMT compared to the existing development. Guidance from the OPR and the City also recommends the use of screening thresholds to identify when a project would be expected to result in a less than significant transportation impact. The City’s VMT criteria states that projects located within half a mile walkshed around high-quality transit corridors that do not exceed City parking requirements could be expected to result in a less than significant VMT impact. Although the proposed project would be located within half a mile of a high-quality transit corridor (0.4 miles southeast of the California Avenue Train Station), it would not satisfy the VMT screening criteria since the proposed number of parking spaces would exceed the City’s parking requirements, and therefore, further analysis is warranted.

A proposed residential project would have a significant impact if VMT attributable to the project exceeds a level of 15 percent below the existing daily home-based VMT per County resident. This threshold is consistent with the State guidance discussed above for evaluating traffic-related impacts. In Santa Clara County, the existing daily home-based VMT is 13.33 miles per resident. Therefore, a significant impact would occur if the project generates an average daily home-based VMT exceeding 11.33 miles per resident, which is equivalent to 15 percent below the existing County metric.

Pursuant to California Public Resources Code section 21099(b)(2) and CEQA Guidelines Section 15064.3, “a project’s effect on automobile delay shall not constitute a significant environmental impact.” Nevertheless, this analysis provides a discussion of the project’s effects on background and cumulative LOS conditions for informational purposes, because they are relevant to consistency with City standards for the performance of the circulation system. The following thresholds would be applicable to the informational discussion of LOS in this EIR.

The City of Palo Alto has established criteria to evaluate traffic impacts based on standards set by the Santa Clara County Congestion Management Program (CMP) in the Transportation Impact Analysis Guidelines, adopted in October 2014. For signalized intersections in the CMP network, an adverse condition exists if:

- The addition of project-generated traffic causes operation of an intersection to deteriorate from an acceptable level (LOS D or better) to an unacceptable level (LOS E or F); or
- For intersections operating at LOS F under background conditions, the project condition increases the average control delay for critical movements by four seconds or more and project traffic increases the critical volume-capacity (v/c) ratio by 0.01 or more.

For local signalized intersections that are not on the CMP network, the change in operation is considered to be inconsistent with the City of Palo Alto’s Level of Service (LOS) standard and therefore unacceptable if:

- The addition of project-generated traffic causes operation of an intersection to deteriorate from an acceptable level of service (LOS D or better) to LOS E or LOS F, or
- The addition of project-generated traffic causes intersections operating at LOS E or F without project-generated traffic to have an increase in average control delay for critical movements by four seconds or more, or an increase in critical volume-capacity (v/c) ratio by 0.01 or more.

The City of Palo Alto does not have a formally adopted minimum threshold for unsignalized intersections. Thus, for the purposes of this report, the following criteria was applied for defining conditions considered to be inconsistent with the City's Level of Service standard at unsignalized intersections:

- LOS D is used as the minimum acceptable operation level at unsignalized intersections. A project-generated increase in traffic is considered to have an adverse effect if the intersection operations degrade to LOS E or F from acceptable operations and the intersection satisfies a peak hour signal warrant from the California Manual on Uniform Traffic Control Devices (CA MUTCD).
- No criterion is suggested if an unsignalized intersection operates at LOS E or F prior to the addition of project trips.

The amount of traffic generated by the project was estimated by applying industry standard trip generation rates to the type and size of new development. The standard trip generation rate was derived from the Institute of Transportation Engineers (ITE) publication *Trip Generation Manual, 11th Edition, 2021* based on the "Single Family Attached Housing" (Land Use #215), since this land use most closely matches the proposed project. According to the Transportation Impact Analysis Guidelines published by the VTA and recently adopted in March 2009, the proposed project would qualify for a nine-percent trip reduction since it would be located within 2,000 feet walking distance to a Caltrain Station. It is noted that no trip credits for the prior retail use were applied since this portion of the building has been vacant since December 2019 and was not generating trips during the traffic data collection period (November 2021). Additionally, no trip credits for the Research and Development or warehouse uses were applied since their size and function is anticipated to remain unchanged from existing conditions.

As shown in Table 4.8-3, the proposed project could generate up to 596 daily vehicle trips, including 40 during the a.m. peak hour and 47 during the p.m. peak hour.

Table 4.8-3 Project Trip Generation

Land Use	Size	Daily Trips	AM Peak Hour Trips			PM Peak Hour Trips		
			In	Out	Total	In	Out	Total
Proposed Uses								
Single Family Detached Housing ¹	91 units	655	14	30	44	30	22	52
Transit Reduction (9%)		(59)	(1)	(3)	(4)	(3)	(2)	(5)
Total		596	13	27	40	27	20	47

() denotes subtraction

¹ Land Use Code 210 (Single Family Detached Housing) data from ITE *Trip Generation Manual, 11th Edition, 2021*.

Source: W-Trans 2022, Appendix H

The trip distribution pattern used to allocate new project trips to the street network was based on knowledge of local travel patterns. Application of these distribution assumptions (with manual

adjustments for rounding) and the resulting trips are shown in Table 4.8-4. Since major modifications to the roadway network within the study area are not anticipated, the same trip distribution was used for all study periods and conditions.

Table 4.8-4 Trip Distribution Assumptions

Route	Percent	Trips	AM	PM
To/From East on Page Mill Rd	20%	119	8	9
To/From West on Page Mill Rd	15%	89	6	7
To/From North on El Camino Real	20%	119	8	9
To/From South on El Camino Real	25%	149	10	13
To/From North on Park Blvd	5%	30	2	2
To/From South on Park Blvd	10%	60	4	5
To/From West on Hanseyn Wy	5%	30	2	2
Total	100%	596	40	47

Sources: W-Trans 2022; Appendix H

Operating conditions during the a.m. and p.m. peak periods were evaluated to capture the highest potential impacts for the proposed project as well as the highest volumes on the local transportation network. The morning peak hour occurs between 7:00 and 9:00 a.m. and reflects conditions during the home to work or school commute, while the p.m. peak hour occurs between 4:00 and 6:00 p.m. and typically reflects the highest level of congestion during the homeward bound commute. Conditions during the a.m., and p.m. peak hours were evaluated for the following scenarios:

1. **Existing Conditions.** Existing peak hour volumes, lane geometry, and traffic control (e.g., signal timing, signal phasing, etc.)
2. **Existing plus Project Conditions.** Existing peak hour volumes plus estimated net-new project-generated trips.
3. **Background Conditions (Existing + Near-Term Growth).** Existing peak hour volumes plus the 5-year estimated growth between the existing and cumulative model runs using growth rates derived from the City of Palo Alto's Travel Demand Forecast Model.
4. **Background plus Project Conditions (Existing + Near-Term + Project).** Background Conditions volumes plus net-new project-generated trips.
5. **Cumulative Conditions.** Existing Condition peak hour volumes plus anticipated forecasted growth for the year 2040 derived from the City of Palo Alto's Travel Demand Forecast Model. This scenario includes the assumed completion of any geometric and/or traffic control improvements planned for the study intersections.
6. **Cumulative plus Project Conditions.** Cumulative plus Project operating conditions based on a forecast of net-new trips associated with the proposed project added to the Cumulative (No Project) Conditions traffic volumes.

b. Project Impacts and Mitigation

Threshold 1: Would the project conflict with a program, plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities?

Impact T-1 THE PROPOSED PROJECT WOULD NOT CONFLICT WITH APPLICABLE POLICIES ADDRESSING TRANSIT, ROADWAY, OR PEDESTRIAN FACILITIES. HOWEVER, AN ENHANCED BIKEWAY IS PLANNED BETWEEN EL CAMINO REAL AND PARK BOULEVARD ALONG THE ALIGNMENT OF PORTAGE AVENUE AND TRAVERSING THE PROJECT SITE IN THE CITY'S BICYCLE AND PEDESTRIAN TRANSPORTATION PLAN AND COUNTYWIDE TRAILS PLAN. THEREFORE, THE PROJECT MAY CONFLICT WITH THESE PLANS. THIS IMPACT WOULD BE LESS THAN SIGNIFICANT WITH MITIGATION INCORPORATED.

Transit Facilities

The project is located within a 0.5-mile walk to VTA bus stops for routes 22, 89, 522, Rapid 522, Express 101, Express 102, and Express 103, and is located approximately 0.6 miles away from the nearest Dumbarton Express Route DB1. Furthermore, the Caltrain Station at 101 California Avenue is approximately 0.4 miles northwest of the project site. Therefore, the project would be adequately served by transit. The proposed project would also not involve changes to the transit network and would not directly affect transit facilities.

The 2030 Comprehensive Plan EIR found that increased long-term development in Palo Alto would not cause transit demand to exceed capacity (City of Palo Alto 2016a). By the year 2040, the only transit service that is likely to approach full capacity is Caltrain, which could operate at 97 percent of capacity. Consistent with this conclusion, although the project would increase demand for bus and rail services, the project is consistent with the City's 2030 Comprehensive Plan (see Section 4.6, *Land Use and Planning*). Therefore, because the project is consistent with development envisioned under the Comprehensive Plan, it is consistent the findings of the 2030 Comprehensive Plan EIR and would not increase demand beyond levels anticipated in the 2030 Comprehensive Plan EIR. Additionally, as discussed in the Local Transportation Analysis prepared by W-Trans (W-Trans 2022; Appendix H), if 20 percent of peak hour trips were made by transit, there would be 8 a.m. and 10 p.m. additional transit riders during peak hours, spread out over multiple buses and times. Therefore, the additional demand from the proposed project would not exceed the current or planned capacity of the transit network. Overall, the proposed project would not conflict with a program, plan, ordinance, or policy addressing transit facilities.

Roadway Facilities

For informational purposes, this analysis addresses the proposed project's effects on traffic delay. The proposed project would generate new vehicle trips that contribute to traffic congestion on roadways in the vicinity of the project site.

Table 4.8-5 shows projected traffic delay and LOS at the seven studied intersections under existing conditions as well as existing plus project conditions; and Table 4.8-6 shows projected traffic delay and LOS at the seven studied intersections under background conditions as well as background plus project conditions.

Table 4.8-5 Intersection Operations under Existing and Existing Plus Project Conditions

Intersection	Existing Conditions				Existing Plus Project Conditions			
	AM Peak		PM Peak		AM Peak		PM Peak	
	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay
1. Park Boulevard/Page Mill Road	A	7.1	A	5.9	A	8.2	A	6.9
2. Park Boulevard/Olive Avenue <i>Eastbound (Olive Avenue) Approach</i>	A <i>B</i>	1.2 <i>10.4</i>	A <i>B</i>	0.7 <i>10.2</i>	A <i>B</i>	1.3 <i>10.6</i>	A <i>B</i>	0.8 <i>10.4</i>
3. Park Boulevard/Lambert Avenue	A	7.4	A	7.4	A	7.4	A	7.5
4. El Camino Real/Page Mill Road	D	44.5	E+	57.3	D	45.9	E	63.6
5. El Camino Real/Olive Avenue <i>Westbound (Olive Avenue) Approach</i>	A F	4.2 **	C F	24.1 **	A F	4.7 **	D F	25.6 **
6. El Camino Real/Portage Avenue	A	8.7	A	7.9	A	9.0	A	8.7
7. El Camino Real/Lambert Avenue <i>Westbound (Lambert Avenue) Approach</i>	A F	6.8 **	A F	8.0 **	A F	9.0 **	A F	9.6 **

Notes:

Bold text denotes deficient operation.

Results for minor approaches to two-way stop-controlled intersections are indicated in *italics*.

Delay is measured in average seconds per vehicle.

LOS = Level of Service

** = delay greater than 120 seconds

Source: W-Trans 2022; Appendix H

Table 4.8-6 Intersection Operations under Background and Background Plus Project Conditions

Intersection	Background Conditions				Background Plus Project Conditions			
	AM Peak		PM Peak		AM Peak		PM Peak	
	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay
1. Park Boulevard/Page Mill Road	A	7.8	A	6.7	A	8.4	A	7.2
2. Park Boulevard/Olive Avenue <i>Eastbound (Olive Avenue) Approach</i>	A <i>B</i>	1.2 10.7	A <i>B</i>	0.7 10.4	A <i>B</i>	1.4 10.9	A <i>B</i>	0.8 10.6
3. Park Boulevard/Lambert Avenue	A	7.5	A	7.5	A	7.5	A	7.6
4. El Camino Real/Page Mill Road	D	49.1	E-	78.0	D	49.2	E-	78.4
5. El Camino Real/Olive Avenue <i>Westbound (Olive Avenue) Approach</i>	B F	11.0 **	F F	** **	B F	12.5 **	F F	** **
6. El Camino Real/Portage Avenue	A	9.2	A	8.8	A	9.3	A	9.0
7. El Camino Real/Lambert Avenue <i>Westbound (Lambert Avenue) Approach</i>	B F	13.2 **	C F	16.0 **	C F	16.7 **	C F	18.4 **

Notes:

Bold text denotes deficient operation.

Results for minor approaches to two-way stop-controlled intersections are indicated in *italics*.

Delay is measured in average seconds per vehicle.

LOS = Level of Service

** = delay greater than 120 seconds

Source: W-Trans 2022; Appendix H

As shown in these two tables, with the addition of project-related traffic, all intersections would continue operating at the acceptable LOS except at two minor street approaches to El Camino Real. At the intersections of El Camino Real/Olive Avenue and El Camino Real/Lambert Avenue, the westbound approaches would operate at an unacceptable LOS F with or without the addition of project-generated vehicle trips. The peak hour volume warrant was evaluated at the unsignalized intersections expected to operate at LOS F and only the p.m. peak hour volumes at the intersection of El Camino Real/Lambert Avenue would satisfy this warrant. As recommended by W-Trans in the Local Transportation Analysis, unsignalized intersections that satisfy a peak hour traffic signal warrant and that operate at LOS F should typically be included in the City's list of intersections considered for traffic signal installation. The City has their own criteria for ranking and prioritization, including other signal warrants and collision history, which would be employed when considering the need and timing for signal installation. It should also be noted that because these intersections affect Caltrans right-of-way, Caltrans signalization of these intersections would fall under Caltrans' jurisdiction. Similar to the City, Caltrans has additional considerations with respect to ranking and prioritization before it would consider signalization of an intersection. In accordance with PAMC Section 16.45, the applicant is required to pay a Transportation Impact Fee for new PM peak hour trips associated with the proposed project.

Bicycle Facilities

Existing bicycle facilities, including the bicycle lanes on Park Boulevard, along with the shared use of minor streets would provide adequate access for bicyclists within the vicinity of the project site. According to the City of Palo Alto Bicycle and Pedestrian Transportation Plan (City of Palo Alto 2012), an enhanced bikeway is planned between El Camino Real and Park Boulevard along the alignment of Portage Avenue and traversing the project site. This bicycle connection is also identified on the Countywide Trails Plan (County of Santa Clara 1995). The project would therefore conflict with the City's Bicycle and Pedestrian Transportation Plan and Countywide Trails Plan since an enhanced bikeway traversing the site is not included as part of the project description or site plans. This impact would be potentially significant.

Pedestrian Facilities

The project site is located within a 0.5-mile walk to bus stops for VTA routes 22, 89, 522, Rapid 522, Express 101, Express 102, and Express 103, and would be located approximately 0.6 miles away from the nearest Dumbarton Express Route DB1. Furthermore, the Caltrain Station at 101 California Avenue would be approximately 0.4 miles northwest of the project site. Residents from the proposed project would be able to walk or use bicycles to reach the bus stops and the Caltrain Station.

As mentioned above under Pedestrian Conditions, a network of sidewalks, crosswalks, pedestrian signals, and curb ramps provide access for pedestrians near the project site. Sidewalk connectivity is also continuous throughout the entire surrounding neighborhood. Overhead lighting is provided at intersections in order to ensure pedestrian safety. Pedestrians would be able to circulate through the project site via new private streets between buildings, which would be accessed via a new driveway on Park Boulevard.

Therefore, the mixed-use project would not conflict with a program, plan, ordinance, or policy addressing pedestrian facilities.

Mitigation Measures

The following mitigation measure is required.

T-1 Inclusion of Enhanced Bikeway

The project applicant shall modify the project to include an appropriate enhanced bikeway facility that is consistent with the City's Bicycle and Pedestrian Transportation Plan and County of Santa Clara's Countywide Trails Plan and provide an easement to make the enhanced bikeway facility accessible to the public.

Significance after Mitigation

Implementation of Mitigation Measure T-1 would require the inclusion of an enhanced bikeway connection between Park Boulevard and Portage Avenue to the project. This would ensure consistency with the City of Palo Alto Bicycle and Pedestrian Transportation Plan and Countywide Trails plan, reducing this impact to a less than significant level.

Threshold 2: Would the project conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b)?

Impact T-2 VEHICLE MILES TRAVELED (VMT) ATTRIBUTABLE TO THE PROPOSED PROJECT WOULD NOT EXCEED THE CITY'S THRESHOLDS FOR RESIDENTIAL PROJECTS. THEREFORE, THE IMPACT RELATED TO VMT WOULD BE LESS THAN SIGNIFICANT.

The proposed project would provide housing growth in a segment of the County that has a surplus of jobs relative to the supply of housing. The large supply of jobs in Palo Alto, Mountain View and other neighboring cities results in relatively long commute lengths for many employees, particularly those commuting from residences in the East Bay and San Francisco. By providing residences closer to employment centers in the Peninsula, the project would help to reduce net VMT at a regional level.

Projects may be screened from requiring a VMT analysis based on location, or other characteristics anticipated to result in low rates of VMT. However, the proposed project was determined to not meet the eligibility for screening as defined by the City of Palo Alto since the proposed number of parking spaces exceeds the City's requirements. Therefore, an assessment of VMT impacts was conducted based on the VMT impact criteria adopted by the City of Palo Alto on June 15, 2020.

According to the Santa Clara Countywide VMT Evaluation Tool (Version 2), the countywide VMT per capita is 13.33 miles. Based on the Palo Alto VMT Criteria, a project generating a VMT that is 15 percent or more below this value, or 11.33 miles per capita, would have a less-than-significant VMT impact. Based on the results of the evaluation tool, as shown in Table 4.8-7, the project would have a projected VMT rate of 4.89 miles per capita. Because this per capita VMT rate is below the significance threshold of 11.33 miles, VMT impacts would be less than significant.

Table 4.8-7 Vehicle Miles Traveled Analysis Summary

VMТ Metric	Baseline VMТ Rate	Significance Threshold	Project VMТ Rate	Resulting Significance
Household VMТ per Capita (Countywide baseline)	13.33	11.33	4.89	Less than significant

Sources: W-Trans 2022; Appendix H

Mitigation Measures

This impact would be less than significant without mitigation. No mitigation measures are required.

Threshold 3: Would the project substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible use (e.g., farm equipment)?

Impact T-3 THE PROPOSED PROJECT WOULD NOT INTRODUCE DESIGN FEATURES OR INCOMPATIBLE USES THAT COULD INCREASE TRAFFIC HAZARDS. THIS IMPACT WOULD BE LESS THAN SIGNIFICANT.

The proposed project would add residential units on a property adjacent to Park Boulevard but would not affect the configuration of this or other roadways. The proposed project would not introduce incompatible uses such as agricultural vehicles or farm equipment on roadways.

At driveways, a substantially clear line of sight should be maintained between the driver of a vehicle waiting to enter the street and the driver of an approaching vehicle to reduce traffic hazards. Sight distances along Park Boulevard and Portage Avenue at the project driveway were evaluated by W-Trans based on sight distance criteria contained in the Highway Design Manual published by Caltrans. The recommended sight distances for driveway approaches are based on stopping sight distance and use the approach travel speed as the basis for determining the recommended sight distance. Based on the posted speed limit of 25 mph, the minimum stopping sight distance required is 150 feet. A review in the field shows that sight distances at the proposed project driveways on Park Boulevard each exceed 150 feet so are adequate.

For a motorist traveling northbound on Park Boulevard intending to turn left into either project driveway, the stopping sight distance looking north along Park Boulevard is also greater than 150 feet, providing adequate visibility to allow a following driver to observe and react to a vehicle that may stop in the roadway before making a left turn into the driveway.

W-Trans also evaluated on-site pedestrian circulation to determine if the layout would provide adequate circulation and room for interaction between pedestrians walking and vehicles maneuvering through each parking lot. The site plan shows that adequate pedestrian access would be provided through pedestrian walkways between building entrances, parking areas and sidewalks along Park Boulevard (W-Trans 2022; Appendix H).

Overall, the proposed project would not introduce potentially hazardous design features such as sharp curves or dangerous intersections. City staff would also review the proposed project to ensure that it avoids potential traffic hazards related to access and internal circulation. Therefore, the project would have a less than significant impact related to traffic hazards.

Mitigation Measures

This impact would be less than significant without mitigation. No mitigation measures are required.

Threshold 4: Would the project result in inadequate emergency access?
--

Impact T-4 THE PROJECT WOULD MEET CITY DESIGN STANDARDS AND WOULD PROVIDE ADEQUATE ACCESS FOR EMERGENCY VEHICLES. THIS IMPACT WOULD BE LESS THAN SIGNIFICANT.

The area of proposed development is currently accessed by three driveways on Park Boulevard as well as through a network of internal parking lots with driveways on Portage Avenue and Acacia Avenue. The proposed project would include the removal of the southernmost driveway located approximately 30 feet north of the Matadero Creek bridge on Park Boulevard. Emergency response vehicles would be able to access the site via either project driveway on Park Boulevard. The project site would also be accessible from Portage Avenue and Acacia Avenue via the adjacent parking lots serving the neighboring commercial buildings. The Local Transportation Analysis evaluated site access and circulation and concluded that the project's driveways and internal roadway network would be designed to current City standards and would accommodate the access requirements for emergency and passenger vehicles (W-Trans 2022; Appendix H). In addition, all roadway users must yield to the right-of-way of emergency vehicles when emergency sirens and lights are on. Therefore, the proposed project would not result in inadequate emergency access and this impact would be less than significant.

Mitigation Measures

This impact would be less than significant without mitigation. No mitigation measures are required.

c. Cumulative Analysis

Table 4.8-8 shows projected traffic delay and LOS at the seven studied intersections under cumulative and cumulative plus project conditions. As shown in this table, during the a.m. and p.m. peak hours the westbound stop-controlled approaches to the intersections of El Camino Real/Olive Avenue and El Camino Real/Lambert Avenue would operate at an unacceptable LOS F with or without the addition of project-generated vehicle trips. Projected p.m. peak hour volumes at the intersection of El Camino Real/Olive Avenue would satisfy the peak hour volume warrant once project generated traffic is added. The intersection of El Camino Real/Lambert Avenue would have volumes which satisfy the peak hour volume warrant for both the a.m. and p.m. peak hours with or without the project. Nonetheless, as discussed above, California's Third District Court of Appeal ruled that under SB 743, automobile delay may no longer be treated as a significant impact in CEQA analysis (*Citizens for Positive Growth & Preservation v. City of Sacramento*). Therefore, the project would not contribute to a significant cumulative impact related to conflicts with policies for roadway facilities.

As discussed in Impact T-2, the project would have a less than significant impact related to VMT. Based on technical guidance from the Governor's Office of Planning and Research, if a project has a less than significant impact on VMT using an efficiency-based threshold (e.g., VMT per resident), this implies that the project would not contribute to a cumulative VMT impact (OPR 2018). Therefore, the project would not have a considerable contribution to a cumulative VMT impact. As discussed in Impacts T-3 and T-4, the project would not introduce design features or incompatible uses that could increase traffic hazards or result in inadequate emergency access. Therefore, the project would not contribute to a significant cumulative impact related to traffic hazards or emergency access.

Table 4.8-8 Intersection Operations under Cumulative and Cumulative Plus Project Conditions

Intersection	Cumulative Conditions				Cumulative Plus Project Conditions			
	AM Peak		PM Peak		AM Peak		PM Peak	
	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay
1. Park Boulevard/Page Mill Road	A	8.2	A	7.5	A	8.8	A	8.0
2. Park Boulevard/Olive Avenue <i>Eastbound (Olive Avenue) Approach</i>	A <i>B</i>	1.3 <i>11.4</i>	A <i>B</i>	0.7 <i>11.0</i>	A <i>B</i>	1.4 <i>11.7</i>	A <i>B</i>	0.8 <i>11.2</i>
3. Park Boulevard/Lambert Avenue	A	7.7	A	7.7	A	7.8	A	7.8
4. El Camino Real/Page Mill Road	E	73.2	F	**	E	73.6	F	**
5. El Camino Real/Olive Avenue <i>Westbound (Olive Avenue) Approach</i>	F <i>F</i>	74.5 <i>**</i>	F <i>F</i>	** <i>**</i>	F <i>F</i>	85.2 <i>**</i>	F <i>F</i>	** <i>**</i>
6. El Camino Real/Portage Avenue	B+	10.2	A	9.7	B+	10.4	A	10.0
7. El Camino Real/Lambert Avenue <i>Westbound (Lambert Avenue) Approach</i>	F <i>F</i>	52.6 <i>**</i>	F <i>F</i>	59.7 <i>**</i>	F <i>F</i>	61.7 <i>**</i>	F <i>F</i>	65.7 <i>**</i>

Notes:

Bold text denotes deficient operation.

Results for minor approaches to two-way stop-controlled intersections are indicated in *italics*.

Delay is measured in average seconds per vehicle.

LOS = Level of Service

** = delay greater than 120 seconds

Source: W-Trans 2022; Appendix H

This page intentionally left blank.

4.9 Effects Found Not to be Significant

CEQA Guidelines Section 15128 requires an EIR to briefly describe effects that were determined not to be significant and were, therefore, not discussed in detail in the EIR. This section addresses the potential environmental effects of the proposed project that were found not to be significant or to be less than significant with mitigation. The CEQA topics listed below that were not found to be significant are contained in the environmental checklist form included in Appendix G of the most recent update of the *CEQA Guidelines*.

4.9.1 Aesthetics

Senate Bill (SB) 743 was signed into law on September 27, 2013. According to SB 743, which became effective January 1, 2014, “aesthetics...impacts of a residential, mixed-use, or employment center project on an infill site within a transit priority area shall not be considered significant impacts on the environment.” Pursuant to Section 21099 of the California Public Resources Code, a “transit priority area” is defined in as an area within 0.5 mile of an existing or planned major transit stop. A “major transit stop” is defined in Section 21064.3 of the California Public Resources Code as a 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.

The proposed project would be consistent with SB 743 since it would be located approximately 0.4 miles southeast of the California Avenue Train Station located at 101 California Avenue. This satisfies the definition of a transit priority area since the project site would be within 0.5 mile of a major transit stop. Therefore, because the proposed project would result in residential use on an infill site within a transit priority area, aesthetics impacts may not be considered significant impacts on the environment.

Pursuant to CEQA Statute Section 21099.d, “aesthetic impacts do not include impacts on historical or cultural resources.” Additional analysis of impacts related to historic or cultural resources is warranted in the EIR. This analysis is included in Section 4.2, *Cultural Resources*, of the EIR. In addition, Section 4.6, *Land Use and Planning*, includes a discussion of the proposed project’s consistency with City plans, policies and regulations, including applicable ones related to design and aesthetics.

4.9.2 Agricultural Resources

a. Setting

The project site is in an urbanized area in Palo Alto. The City’s General Plan land use map and zoning maps do not identify any agriculture or forestry resources in Palo Alto, and Policy N-1.3 is in place to maintain Williamson Act agricultural preserve contracts within the City (City of Palo Alto 2017a). The Farmland Mapping and Monitoring Program of the California Resources Agency does not identify lands in Palo Alto as Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (California Department of Conservation [DOC] n.d.). Furthermore, there are no areas of forest land or forest and rangeland identified in the City (City of Palo Alto 2017a).

b. Checklist Questions

In accordance with Appendix G of the *CEQA Guidelines*, the proposed Specific Plan would result in a significant impact if it would:

1. Convert Prime Farmland, Unique Farmland, Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use;
2. Conflict with existing zoning for agricultural use, or a Williamson Act contract;
3. Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code Section 12220(g)), timberland (as defined by Public Resources Code Section 4526), or timberland zoned Timberland Production (as defined by Government Code Section 51104(g));
4. Result in the loss of forest land or conversion of forest land to non-forest use; or
5. Involve other changes in the existing environment which, due to their location or nature, could result in conversion of farmland to non-agricultural use or conversion of forest land to non-forest use.

c. Answers to Checklist Questions and Conclusions

1-5) The portion of the area of proposed development at 200 Portage Avenue has a Comprehensive Plan land use designation of Multi-Family Residential. The portion of the area of proposed development at 3040 Park Boulevard has a Comprehensive Plan land use designation of Light Industrial. Both the project site and adjacent properties are not identified as farmland type under the Farmland Mapping and Monitoring Program, and do not support forest land or resources (California Department of Conservation [DOC], n.d.). The project site is not located on or adjacent to agricultural land or forest land, and so the project would not result in the conversion of farmland to non-agricultural uses. For the same reasons, the project would have no impact with respect to non-agricultural use; conflict with agricultural zoning or the Williamson Act contract; result in the loss of forest land or conversion of forest land to non-forest use; or conversion of farmland to non-agricultural use. No impact would occur.

4.9.3 Biological Resources

a. Setting

The project site is urbanized and developed with structures and parking areas. The project site is “urban forest” according to the City’s Comprehensive Plan Update EIR Figure 4.3-2 (City of Palo Alto 2016). Although the site is bisected by Matadero Creek, the creek is fully channelized, and the area of disturbance does not contain riparian habitat or sensitive natural communities (U.S. Fish and Wildlife Service [USFWS] 2022a). In addition, the site is not located in a known regional wildlife movement corridor or other sensitive biological area as indicated by the USFWS Critical Habitat portal (USFWS 2022b).

b. Checklist Questions

In accordance with Appendix G of the *CEQA Guidelines*, the proposed project would result in a significant impact if it would:

1. Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans,

policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service;

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

c. Answers to Checklist Questions and Conclusions

1) The project site is located in an urbanized area of Palo Alto and is developed with several buildings, surface parking areas, and landscaping trees. The project site is bisected by Matadero Creek. Since the creek is fully channelized and concrete-lined for flood control, and is located in an urbanized area, it provides very little aquatic habitat, no riparian habitat, and no recreational or aesthetic value (City of Palo Alto 2020a). The area of disturbance for the proposed project would not alter or disturb the creek and does not contain riparian habitat or sensitive natural communities (U.S. Fish and Wildlife Service [USFWS] 2022a). In addition, the project site is not located in a known regional wildlife movement corridor or other sensitive biological area as indicated by the USFWS Critical Habitat portal (USFWS 2022b). Based on the developed nature of the site and lack of native or riparian habitat located on the site, no federal or state listed endangered, threatened, rare, or otherwise sensitive flora or fauna are anticipated to be located on site.

There are currently 88 trees within or adjacent to the area of development. The proposed project would preserve 16 trees on the site and 2 trees off-site, while removing 70 trees. The project would involve planting 176 proposed new trees around the site. These trees could contain bird nests and birds protected under the Migratory Bird Treaty Act (MBTA). Protected birds include all common songbirds, waterfowl, shorebirds, hawks, owls, eagles, ravens, crows, native doves and pigeons, swifts, martins, swallows, and others, including their body parts (feathers, plumes etc.), nests, and eggs. Therefore, impacts to nesting birds would be potentially significant without mitigation. Mitigation Measure BIO-1 is required to protect nesting birds.

Mitigation Measures

The following mitigation measures are required.

BIO-1 Nesting Bird Surveys and Avoidance

Construction of the project and any other site disturbing activities that would involve vegetation or tree removal, shall be prohibited during the general avian nesting season (February 1 – August 31), if feasible. If nesting season avoidance is not feasible, the applicant shall retain a qualified biologist, as approved by the City of Palo Alto, to conduct a preconstruction nesting bird survey to determine

the presence/absence, location, and activity status of any active nests on or adjacent to the project site. The extent of the survey buffer area surrounding the site shall be established by the qualified biologist to ensure that direct and indirect effects to nesting birds are avoided. To avoid the destruction of active nests and to protect the reproductive success of birds protected by the MBTA and CFGC, nesting bird surveys shall be performed not more than 14 days prior to scheduled vegetation clearance and structure demolition. In the event that active nests are discovered, a suitable buffer (typically a minimum buffer of 50 feet for passerines and a minimum buffer of 250 feet for raptors) shall be established around such active nests and no construction shall be allowed within the buffer areas until a qualified biologist has determined that the nest is no longer active (i.e., the nestlings have fledged and are no longer reliant on the nest). No ground disturbing activities shall occur within this buffer until the qualified biologist has confirmed that breeding/nesting is completed, and the young have fledged the nest. Nesting bird surveys are not required for construction activities occurring between August 31 and February 1.

Significance After Mitigation

Implementation of Mitigation Measure BIO-1 would ensure protection of nesting birds that may be present on the site during construction activities. This measure would reduce the potentially significant impact to special status species to a less than significant level.

2, 3, 4) The project site is bisected by Matadero Creek, which is fully channelized and does not contain riparian habitat. The creek is not labeled as wetlands on the National Wetlands Inventory (U.S. Fish and Wildlife Service 2022a). The area of disturbance would not include the creek and the proposed project would not involve the direct removal, filling, hydrological interruption, or other means to the bed, bank, channel or adjacent upland area of Matadero Creek. The project footprint is relatively small, and the absence of significant wildlife movement corridors within the project limits and its location adjacent to developed and disturbed areas would ensure that the project would not interfere substantially with the movement of wildlife species. This impact would be less than significant.

6) The purpose of the City of Palo Alto Tree Preservation Ordinance (PAMC Chapter 8.10) is to promote the health, safety, welfare, and quality property within the city, and the establishment of standards for removal, maintenance, and planting of trees. In establishing these procedures and standards, it is the City's intent to encourage the preservation of trees.

Under the Tree Preservation and Management Ordinance, discretionary development approvals for property containing protected trees will include appropriate conditions providing for the protection of such trees during construction and for maintenance of the trees thereafter. "Protected tree" is defined as any tree of the species Coast Live Oak, Valley Oak (greater than 11.5 inches in diameter), and Coast Redwood (greater than 16 inches in diameter).

There are currently 88 trees within or adjacent to the area of development. The proposed project would preserve 16 trees on the site and two trees off-site, while removing 70 trees. Of the trees to be removed, three trees, including one coast live oak and two redwoods, are "protected trees" under the City's tree protection ordinance. The City's Tree Preservation and Management Ordinance requires compliance with the Tree Technical Manual, which outlines the requirements for removal and replacement of protected trees consistent with the tree canopy requirements. A written Tree Removal Permit would be required prior to removal of the street tree and would further ensure that the requirements of the Ordinance are met. Compliance with the City's regulations would ensure that impacts to street trees remain less than significant.

7) The proposed project would not occur within an approved Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan. No impact would occur.

4.9.4 Geology and Soils

a. Setting

Regional and Local Geology

The City of Palo Alto is part of the Coast Ranges geomorphic province. A geomorphic province is a naturally defined geologic region that displays a distinct landscape or landform according to its geology, faults, topographic relief and climate (Department of Conservation [DOC] 2002). The Coast Ranges are Northwest trending mountain ranges and valleys, running subparallel to the San Andreas Fault. They are composed of thick Mesozoic and Cenozoic sedimentary strata (DOC 2002).

The City is located in the Southwestern part of San Francisco Bay, within Santa Clara County and bordering San Mateo County. The City's boundaries extend from San Francisco Bay to the east to the Skyline Ridge of the coastal mountains in the west, with Menlo Park to the north and Mountain View to the south. The City spans an area of around 26 square miles (City of Palo Alto 2017a).

Palo Alto is located in the United States Geological Survey's (USGS) Palo Alto Quadrangle 7.5-minute topographic map areas. The area is typified by low topographic relief. By contrast, the coastal mountains west of Palo Alto have more pronounced topographic relief, with elevations that exceed 300 feet above mean sea level.

Fault Zones

Similar to much of California, Palo Alto is located in a seismically active region. The USGS defines Holocene-active faults as those that are likely to have moved one or more times (surface displacement) in the last 10,000 years (USGS, n.d.), while inactive faults have not had surface displacement within that period. Several faults are located near Palo Alto. These major faults and fault zones include:

- The San Andreas Fault: Located around 5.5 miles Southwest from the City of Palo Alto. The San Andreas Fault is the primary surface boundary between the Pacific and the North American plates. There have been numerous historic earthquakes along the San Andreas Fault, and it generally poses the greatest earthquake risk to California. The probability of experiencing a Magnitude 6.7 or greater earthquake along the San Andreas Fault within the next 30 years is 22 percent (Office of Emergency Services 2017).
- The Hayward Fault: Located around 13 miles Northeast from the City of Palo Alto. The Hayward Fault is part of the wide plate boundary between the Pacific and the North American plates. The probability of experiencing a Magnitude 6.7 or greater earthquake along the Hayward Fault in the next 30 years is 33 percent (Office of Emergency Services 2017).
- The Calaveras Fault: Located around 23 miles Northeast from the City of Palo Alto. The probability of experiencing a Magnitude 6.7 or greater earthquake along the Calaveras Fault in the next 30 years is 26 percent (Office of Emergency Services 2017).

In addition to primary hazards like surface fault ruptures, earthquakes also result in secondary hazards and impacts such as ground shaking, landslides, and liquefaction, which could cause

widespread damage. The project site is not located within an identified earthquake fault zone as delineated on the Alquist-Priolo Earthquake Fault Zoning Map (DOC 2021a).

Ground Shaking

Seismically induced ground shaking covers a wide area and is greatly influenced by the distance of the site to the seismic source, soil conditions, and depth to groundwater. The USGS and Associated Bay Area Governments (ABAG) have worked together to map the likely intensity of ground-shaking throughout the Bay Area under various earthquake scenarios. The most intense ground-shaking scenario mapped in the vicinity assumes a 7.0 magnitude earthquake on the Hayward Fault system (northern and southern segments). The predicted ground-shaking level from such an earthquake would be “strong shaking” to “very strong shaking” throughout the City (ABAG 2019).

Liquefaction and Seismically Induced Settlement

Liquefaction is defined as the sudden loss of soil strength due to a rapid increase in soil pore water pressure resulting from seismic ground shaking. Liquefaction potential is dependent on such factors as soil type, depth to ground water, degree of seismic shaking, and the relative density of the soil. When liquefaction of the soil occurs, buildings and other objects on the ground surface may tilt or sink, and lightweight buried structures (such as pipelines) may float toward the ground surface. Liquefied soil may be unable to support its own weight or that of structures, which could result in loss of foundation bearing or differential settlement. Liquefaction may also result in cracks in the ground surface followed by the emergence of a sand-water mixture. Although the project site is located in a liquefaction zone (DOC 2021a), the risk is moderate according to the Safety Element of the City of Palo Alto Comprehensive Plan (City of Palo Alto 2017a).

Seismically induced settlement occurs in loose to medium dense unconsolidated soil above groundwater. These soils compress (settle) when subject to seismic shaking. The settlement can be exacerbated by increased loading, such as from the construction of buildings. Settlement can also result solely from human activities including improperly placed artificial fill, and structures built on soils or bedrock materials with differential settlement rates.

Landslides

Landslides result when the driving forces that act on a slope (i.e., the weight of the slope material, and the weight of objects placed on it) are greater than the slope’s natural resisting forces (i.e., the shear strength of the slope material). Slope instability may result from natural processes, such as the erosion of the toe of a slope by a stream, or by ground shaking caused by an earthquake. Slopes can also be modified artificially by grading, or by the addition of water or structures to a slope. Development that occurs on a slope can substantially increase the frequency and extent of potential slope stability hazards.

Areas susceptible to landslides are typically characterized by steep, unstable slopes in weak soil/bedrock units which have a record of previous slope failure. There are numerous factors that affect the stability of the slope, including: slope height and steepness, type of materials, material strength, structural geologic relationships, ground water level, and level of seismic shaking.

The project site is not located in a landslide hazard zone (DOC 2021a) or in an area of high potential for earthquake-induced landslides according to Map S-4 (Geotechnical Hazards) of the City’s Safety Element (City of Palo Alto 2017a).

Expansive Soils

Expansive soils can change dramatically in volume depending on moisture content. When wet, these soils can expand; conversely, when dry, they can contract or shrink. Sources of moisture that can trigger this shrink-swell phenomenon include seasonal rainfall, landscape irrigation, utility leakage, and/or perched groundwater. Expansive soil can develop wide cracks in the dry season, and changes in soil volume have the potential to damage concrete slabs, foundations, and pavement. Special building/structure design or soil treatment are often needed in areas with expansive soils. Expansive soils are typically very fine-grained with a high to very high percentage of clay. The clay minerals present typically include montmorillonite, smectite, and/or bentonite. Linear extensibility is used to determine the shrink-swell potential of soils. The shrink-swell potential is low if the soil has a linear extensibility of less than 3 percent; moderate if 3 to 6 percent; high if 6 to 9 percent; and very high if more than 9 percent.

Erosion

Erosion is the wearing away of the soil mantle by running water, wind or geologic forces. It is a naturally occurring phenomenon and ordinarily is not hazardous. However, excessive erosion can contribute to landslides, siltation of streams, undermining of foundations, and ultimately the loss of structures. Removal of vegetation tends to heighten erosion hazards. The City enforces grading and erosion control ordinances to reduce these hazards and the 2030 Comprehensive Plan also contains policies to prevent erosion-related issues.

Paleontological Setting

Paleontological Resources Sensitivity

Paleontological sensitivity refers to the potential for a geologic unit to produce scientifically significant fossils. Direct impacts to paleontological resources occur when earthwork activities, such as grading or trenching, cut into the geologic deposits within which fossils are buried and physically destroy the fossils. Since fossils are the remains of prehistoric animal and plant life, they are considered to be nonrenewable. Such impacts have the potential to be significant and, under the *CEQA Guidelines*, may require mitigation. Sensitivity is determined by rock type, past history of the geologic unit in producing significant fossils, and fossil localities recorded from that unit. Paleontological sensitivity is derived from the known fossil data collected from the entire geologic unit, not just from a specific survey.

The discovery of a vertebrate fossil locality is of greater significance than that of an invertebrate fossil locality, especially if it contains a microvertebrate assemblage. The recognition of new vertebrate fossil locations could provide important information on the geographical range of the taxa, their radiometric age, evolutionary characteristics, depositional environment, and other important scientific research questions. Vertebrate fossils are almost always significant because they occur more rarely than invertebrates or plants. Thus, geological units having the potential to contain vertebrate fossils are considered the most sensitive.

The SVP outlines in its Standard Procedures for the Assessment and Mitigation of Adverse Impacts to Paleontological Resources (2010) guidelines for categorizing paleontological sensitivity of geologic units within a project area. The SVP (2010) describes sedimentary rock units as having a high, low, undetermined, or no potential for containing significant nonrenewable paleontological resources. This criterion is based on rock units within which vertebrates or significant invertebrate fossils have been determined by previous studies to be present or likely to be present. Significant

paleontological resources are fossils or assemblages of fossils, which are unique, unusual, rare, uncommon, diagnostically, stratigraphically, taxonomically, or regionally. The paleontological sensitivity of the project site has been evaluated according to the following SVP (2010) categories:

- **High Potential (Sensitivity).** Rock units from which significant vertebrate or significant invertebrate fossils or significant suites of plant fossils have been recovered are considered to have a high potential for containing significant non-renewable fossiliferous resources. These units include but are not limited to, sedimentary formations and some volcanic formations which contain significant nonrenewable paleontological resources anywhere within their geographical extent, and sedimentary rock units temporally or lithologically suitable for the preservation of fossils. Sensitivity comprises both (a) the potential for yielding abundant or significant vertebrate fossils or for yielding a few significant fossils, large or small, vertebrate, invertebrate, or botanical and (b) the importance of recovered evidence for new and significant taxonomic, phylogenetic, ecologic, or stratigraphic data. Areas which contain potentially datable organic remains older than recent, including deposits associated with nests or middens, and areas that may contain new vertebrate deposits, traces, or trackways are also classified as significant. Full-time monitoring is typically recommended during any project-related ground disturbance in geologic units with high sensitivity.
- **Low Potential (Sensitivity).** Sedimentary rock units that are potentially fossiliferous but have not yielded fossils in the past or contain common and/or widespread invertebrate fossils of well documented and understood taphonomic (processes affecting an organism following death, burial, and removal from the ground), phylogenetic species (evolutionary relationships among organisms), and habitat ecology. Reports in the paleontological literature or field surveys by a qualified vertebrate paleontologist may allow determination that some areas or units have low potentials for yielding significant fossils prior to the start of construction. Generally, these units will be poorly represented by specimens in institutional collections and will not require protection or salvage operations.
- **Undetermined Potential (Sensitivity).** Specific areas underlain by sedimentary rock units for which little information is available are considered to have undetermined fossiliferous potentials. Field surveys by a qualified vertebrate paleontologist to specifically determine the potentials of the rock units are required before programs of impact mitigation for such areas may be developed.
- **No Potential.** Rock units of metamorphic or igneous origin are commonly classified as having no potential for containing significant paleontological resources. For geologic units with no sensitivity, a paleontological monitor is not required.

Paleontological Sensitivity of the Project Site

Figure 4.9-1 shows the geologic units underlying the project site. The geology of the project site was mapped at a scale of 1:24,000 by Pampeyan (1993) who identified one geologic unit underlying the project site: Holocene medium-grained alluvium (Qam).

Qam consists of unconsolidated to moderately consolidated, moderately sorted fine sand, silt, and clayey silt that is Holocene in age (Pampeyan 1993). Qam varies in thickness, and cross-sections included in Pampeyan (1993) suggest that Qam is approximately 200 feet thick beneath the project site. Holocene units are generally considered too young to preserve scientifically significant paleontological resources (SVP 2010). Therefore, Qam has a low paleontological sensitivity.

b. Checklist Questions

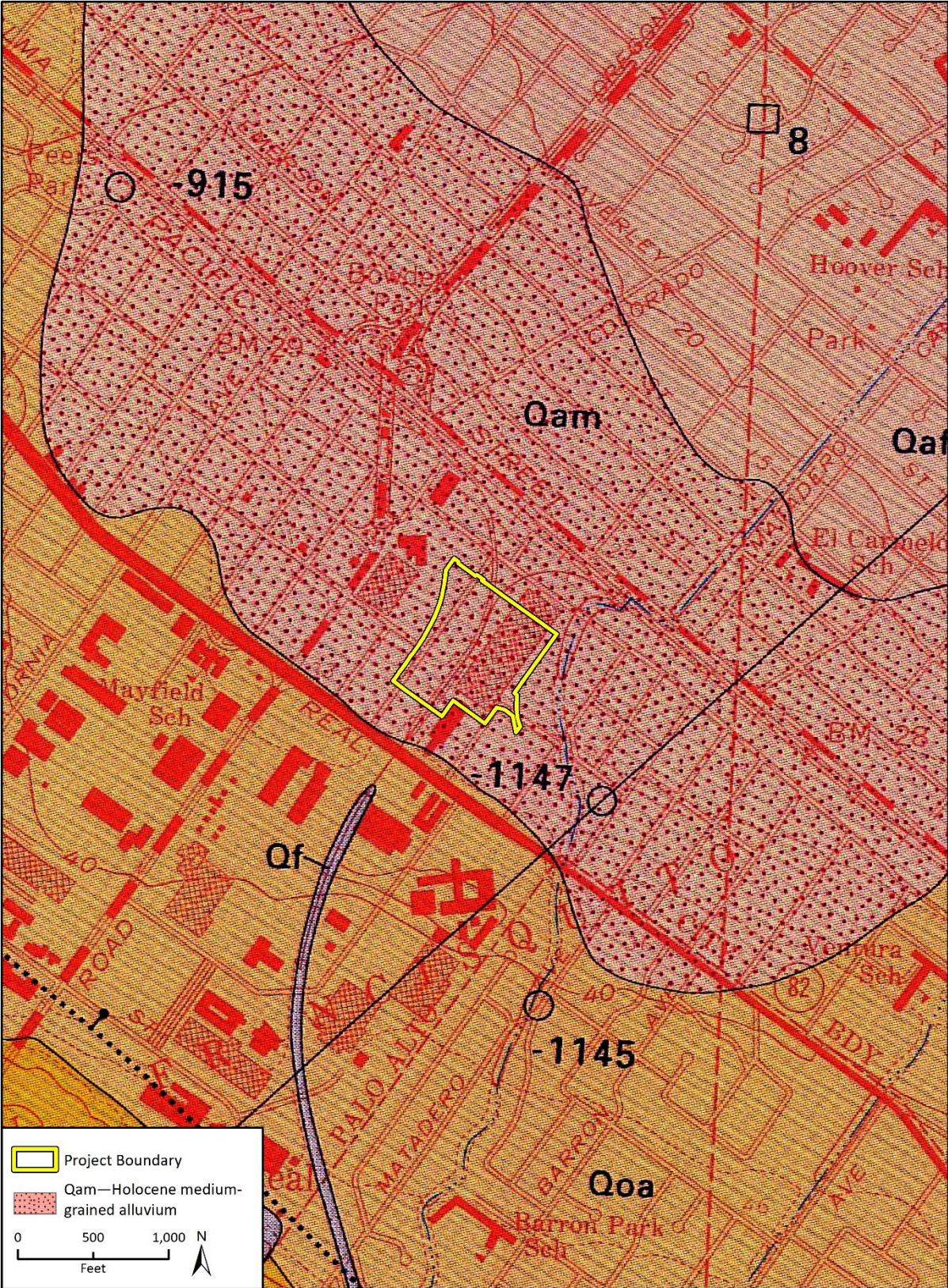
In accordance with Appendix G of the *CEQA Guidelines*, the proposed project would result in a significant impact if it would:

1. Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury or death involving:
 - a. Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault. Refer to Division of Mines and Geology Special Publication 42
 - b. Strong seismic ground shaking
 - c. Seismic-related ground failure, including liquefaction
 - d. Landslides;
2. Result in substantial soil erosion or the loss of topsoil;
3. Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse;
4. Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property;
5. Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water; or
6. Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature.

c. Answers to Checklist Questions and Conclusions

1a) The project site is not located within an identified earthquake fault zone as delineated on the Alquist-Priolo Earthquake Fault Zoning Map (DOC 2021a). No known fault lines are located on the site. The closest active fault is the San Andreas Fault which is located approximately 5.5 miles Southwest of the site. Thus, the likelihood of surface rupture occurring from active faulting at the site is remote. As a result, the likelihood of surface rupture occurring from active faulting at the site is remote. Impacts would be less than significant.

Figure 4.9-1 Geologic Units Underlying the Project Site



Pampeyan, H.E. 1993. Geologic map of the Palo Alto and part of the Redwood Point 7.5-minute quadrangles, San Mateo and Santa Clara Counties, California. U.S. Geological Survey, Miscellaneous Investigations Series Map I-2371, scale 1:24,000.

1b) As with any site in the Bay Area region, the project site is susceptible to strong seismic ground shaking in the event of a major earthquake. Nearby faults include the San Andreas Fault, the Hayward Fault and the Calaveras Fault. These faults are capable of producing strong seismic ground shaking at the site. However, the City of Palo Alto 2030 Comprehensive Plan Safety Element contains policies that would ensure the protection of life, ecosystems and property from natural hazards and disasters such as earthquakes. In addition, all types of construction must adhere to California Building Code seismic safety restrictions and in-depth soil reports must be required as part of the development approval process for residential sites within earthquake fault zones. Impacts would be less than significant.

1c, 3) As mentioned above under *Liquefaction*, although the project site is located in a liquefaction zone (DOC 2021a), the risk is moderate according to the Safety Element of the City of Palo Alto Comprehensive Plan (City of Palo Alto 2017a). The Seismic Hazards Identification Program of Chapter 16.42 of the PAMC addresses public safety by identifying those buildings in Palo Alto that exhibit structural deficiencies and by accurately determining the severity and extent of those deficiencies in relation to their potential for causing loss of life or injury. Such a seismic hazards identification program is consistent with California Health and Safety Code Sections 19160 - 19169 and is necessary to implement the Comprehensive Plan's Safety Policy S2.7.3 (City of Palo Alto 2017a). Additionally, with modern construction and adherence to the geology and soil provisions of the CBC, which sets forth seismic design standards (Chapters 16, 18) and geohazard study requirements (Chapter 18), impacts would be less than significant.

1d) Earthquakes can trigger landslides that may cause injuries and damage to people and structures. Landslides are typically hazards on or near slopes or hillside areas, rather than generally level areas like the project site and vicinity. According to Map S-4 in the City of Palo Alto 2030 Comprehensive Plan, the project site has low potential for landslides. Impacts would be less than significant.

2) The project site is generally developed and flat, which limits the potential for substantial soil erosion. Ground disturbing activities that would occur during the grading and excavation phase of construction would have the highest potential for erosion, and as a result temporary erosion could occur. However, the project would be required to comply with PAMC Chapters 16.28.070 and 16.28.120, which require measures to minimize surface runoff, erosion, and sedimentation. In addition, the project would be required to comply with erosion control standards administered by the San Francisco Bay Regional Water Quality Control Board (SFRWQCB) through the National Pollutant Discharge Elimination System (NPDES) permit process, which requires implementation of nonpoint source control of stormwater runoff. Furthermore, as mentioned under Section 4.1.1.e, *Air Quality*, the project would be required to comply with BAAQMD best management practices (BMPs) in Section 8.1.2 of the BAAQMD CEQA Guidelines, which address the minimization or avoidance of erosion and loss of topsoil. Additional information related to the prevention of stormwater-induced erosion is provided in Section 4.9.5, Hydrology and Water Quality. Compliance with these requirements would ensure that impacts of the proposed development associated with soil erosion and the loss of topsoil would be less than significant.

4) Section 21.12.070 of the PAMC requires the preparation of a preliminary soil report in order to determine the presence of expansive soils and recommend corrective action to prevent structural damage. Building on unsuitable soils would have the potential to create future subsidence or collapse issues that could result in the settlement of infrastructure, and/or the disruption of utility lines and other services.

Compliance with existing State and local laws and regulations, would ensure that impacts associated with expansive soil are minimized by requiring the submittal and review of detailed soils and/or

geologic reports prior to construction. Such evaluations must contain recommendations for ground preparation and earthwork specific to the site, which then become an integral part of the construction design. Palo Alto building codes and other City requirements would ensure that potential impacts are minimized or avoided. Impacts associated with expansive soils would be less than significant.

5) The proposed project would be connected to the local wastewater treatment system. Septic systems would not be used. No impact would occur.

6) As described above, the project site has low paleontological sensitivity. Ground disturbance is not anticipated to reach depths where older, potentially more paleontologically sensitive geologic units occur. Therefore, the project is unlikely to significantly impact paleontological resources. This impact would be less than significant.

4.9.5 Hydrology and Water Quality

a. Setting

The project site is bisected by Madero Creek, which flows north to the San Francisco Bay and is listed as an impaired water body under Section 303(d) of the Clean Water Act.

New developments are all required to comply with Chapter 16.11 of the PAMC, which requires that permanent stormwater pollution prevention measures be incorporated into projects. These may include, but are not limited to, minimization of impervious surfaces, construction of sidewalks, walkways, and/or patios with permeable surfaces, and minimization of disturbances to natural drainages. In addition, under Chapter 16.11 of the PAMC, “significant redevelopment projects,” which include projects that would result in the replacement of 10,000 square feet or more of impervious surface, must treat, either through capture, flow-through filtration, or a combination of capture and flow-through filtration, the volume of stormwater specified in the PAMC.

Furthermore, as part of Section 402 of the CWA, the U.S. EPA has established regulations under the NPDES program to control both construction and operation (occupancy) stormwater discharges. In California, the State Water Resources Control Board administers the NPDES permitting program and is responsible for developing permitting requirements. Under the conditions of the County’s NPDES Municipal Regional Stormwater Permit (MRP) (Order No. R2-2015-0049), the City of Palo Alto must implement a stormwater management plan as a means to control polluted discharges to the stormwater drainage system. NPDES permits generally identify effluent and receiving water limits on allowable connections and/or mass emissions of pollutants contained in the discharge, prohibitions on discharges not specifically allowed under the permit, and provisions that describe required actions by the discharger, including industrial pretreatment, pollution prevention, self-monitoring, and other activities. The City of Palo Alto is a participating agency in the Santa Clara Valley Urban Runoff Pollution Prevention Program. The City must meet the provisions of the Municipal Regional Stormwater Permit by ensuring that new development and redevelopment mitigate water quality impacts to stormwater runoff both during the construction and operation of projects. The Program’s Permit Provision C.3 contains requirements for controlling the potential impacts of land development on stormwater quality and flow. Projects that create or replace 10,000 square feet or more of impervious surface must include appropriate site design measures, pollutant source controls, and treatment control measures. Projects that produce increases in runoff peak flows, volumes, and durations that may cause erosion or sedimentation in downstream receiving water must also include hydromodification control measures.

b. Checklist Questions

In accordance with Appendix G of the *CEQA Guidelines*, the proposed project would result in a significant impact if it would:

1. Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater quality;
2. Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin;
3. Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would:
 - a. Result in substantial erosion or siltation on- or off- site;
 - b. Substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site;
 - c. Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or
 - d. Impede or redirect flood flows;
4. In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation;
5. Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan.

c. Answers to Checklist Questions and Conclusions

1) Development of the proposed project would introduce heavy equipment during construction and increase traffic to and from the site during operation. This increase in heavy construction equipment and operational traffic could result in an increase in fuel, oil, and lubricants in the stormwater runoff due to leaks or accidental releases.

As the project would disturb more than one acre (1.34 acres), the project applicant would be required to obtain a NPDES Construction General Permit (Order No. 2012-0006-DWQ), which requires elimination or reduction of non-stormwater discharges to waters of the U.S., development and implementation of a SWPPP for the project construction activities, and performance of inspections of the stormwater pollution prevention measures and control practices to ensure conformance with the site-specific SWPPP. Additionally, the project would be required to comply with the City's construction dewatering process detailed in the *Construction Dewatering System Policy and Plan Preparation Guidelines* (City of Palo Alto 2020b).

In terms of impacts related to operational activities, impervious surfaces can carry a variety of pollutants, including oil and grease, metals, and sediment and pesticide residues from roadways, parking lots, rooftops, and landscaped areas depositing them into adjacent waterways via the storm drain system. The project would result in a decrease in impervious surfaces from existing conditions from 216,750 square feet to 193,015 square feet which would reduce impacts to surface or groundwater quality. Furthermore, the project would be required to comply with the stormwater pollution prevention measures in PAMC Chapter 16.11. Under Chapter 16.11 of the PAMC, the project is considered a "significant redevelopment project" because it would result in the replacement of 10,000 square feet or more of impervious surface. Significant redevelopment

projects must treat, either through capture, flow-through filtration, or a combination of capture and flow-through filtration, the volume of stormwater specified in the PAMC. Additionally, since the project would involve replacing more than 10,000 square feet of impervious surfaces, it would be subject to the Santa Clara Valley Urban Runoff Pollution Prevention Program's C.3 requirements for controlling potential impacts of land development on stormwater quality and flow, including appropriate site design measures, pollutant source controls, and treatment control measures. The project would qualify as a Special Project under Category B and would receive LID reduction credits (County of Santa Clara 2016). The project would also utilize flow through planters to treat surface runoff.

The proposed project, in accordance with PAMC and C.3 requirements, would be designed to direct runoff from roofs and sidewalks into vegetated areas and utilize flow through planters to treat surface runoff before entering the stormwater system, which would also ensure the protection of Matadero Creek from harmful effluent. Compliance with the provisions of NPDES Section C. 3, a SWPPP, and a stormwater control plan would not result in adverse effects on water quality or violate water quality standards or waste discharge requirements during construction or operation. With implementation of the measures contained in these plans, excessive stormwater runoff, substantial erosion or siltation on- or off-site would not occur and the potential for the project to violate water quality standards and substantially degrade water quality would be reduced.

As discussed in Section 4.5, *Hazards and Hazardous Materials*, groundwater may be present at depths up to 13 feet below ground surface. The proposed project would involve excavation up to 10 feet for utility work. Therefore, it is unlikely that groundwater would be encountered during excavation activities. However, if groundwater were to be encountered, the project would be required to comply with local regulations. According to the City's *Construction Dewatering System Policy and Plan Preparation Guidelines* (City of Palo Alto 2020b), excavation activities that encounter groundwater are required to submit a Construction Dewatering Plan to the City's Public Works Department. The Public Works Department would review and permit the dewatering plan prior to commencement of dewatering as part of the Street Work Permit process. The Construction Dewatering Plan must comply with the City's *Guidelines*, which require that water is tested for contaminants prior to initial discharge and at intervals during dewatering. In the dewatering plan, the applicant must include provisions for keeping sediment and contaminated groundwater out of the storm drain system. In addition, the proposed project would be required to adhere to the mitigation measures identified in Section 4.5 with respect to the management of contaminated soil and groundwater. With adherence to the City's policies regarding dewatering, contaminated groundwater would not enter the stormwater system. Overall, the proposed project would have a less than significant impact on water quality.

2) As discussed in Section 4.9.10, *Utilities and Service Systems*, the proposed project would receive its water from the San Francisco Public Utilities Commission (SFPUC). The Regional Water System collects water from the Tuolumne River in the Sierra Nevada and from protected local watersheds in the East Bay and Peninsula. Therefore, water supply to the project site would not rely on groundwater supplies. Development under the proposed project would not include installation of new groundwater wells or use of groundwater from existing wells. Temporary dewatering during construction would not substantially affect groundwater levels; because of the relatively small area of the project site and proposed depth of excavation, near or only slightly below existing groundwater levels, the project would not result in a significant depletion of groundwater supply. Therefore, the proposed project would not result in a net deficit in aquifer volume or a lowering of the groundwater table. Moreover, since the site is already covered with impervious surfaces,

including concrete surface parking lots, the proposed project would not result in decreased groundwater infiltration. The project would not result in an exceedance of safe yield or a significant depletion of groundwater supplies. Impacts related to groundwater would be less than significant.

3a-3d) Matadero Creek, a channelized waterway, is immediately adjacent to the area of disturbance. The area of development is currently developed, and construction of the proposed project would not alter the course of this creek or other stream or river (no other surface water features are identified in the project site). The project site is connected to an existing stormwater drainage system located in the City of Palo Alto Matadero Creek Watershed, and stormwater eventually flows to the San Francisco Bay.

The project site is currently covered in 216,750 square feet of impervious surfaces. The proposed project would reduce the total area of impervious surfaces to 193,015 square feet. Therefore, the new surfaces would not substantially increase runoff from the project site such that new or increased flooding would occur on- or off-site. Consistent with C.3 stormwater treatment requirements, the proposed project would include flow-through planters and permeable pavement throughout the project site. The proposed project would not introduce new surface water discharges, would not substantially increase runoff volumes, result in substantial erosion or siltation, and would not result in flooding on- or off-site. The project would also not alter the existing drainage pattern of the site or area. Impacts would be less than significant.

4) According to the State of California Tsunami Inundation Map (DOC 2021b), the site is not located within a tsunami inundation zone. According to the City of Palo Alto's Natural Environment Element and Safety Element of the 2030 Comprehensive Plan, mudflows and seiches are not identified as issues for the city. In addition, the nearest body of water that could experience a seiche event is the San Francisco Bay, and it is not anticipated that a seiche in the Bay would have potential to affect the project site. The project site is flat and surrounded by residential and commercial development away from crests and steep ridges. Therefore, the project site is located in a low hazard area for tsunami, seiche, and mudflow. Impacts would be less than significant.

5) As discussed under Criterion (1) above, the project would not violate water quality standards or degrade water quality during construction or operation.

The City of Palo Alto is under the jurisdiction of the San Francisco Bay Regional Water Quality Control Board (RWQCB). The San Francisco Bay RWQCB provides permits for projects that may affect surface waters and groundwater locally and is responsible for preparing the Water Quality Control Plan for the San Francisco Bay Basin (Basin Plan). The Basin Plan designates beneficial uses of water in the region and establishes narrative and numerical water quality objectives. The Basin Plan serves as the basis for the San Francisco Bay RWQCB's regulatory programs and incorporates an implementation plan for achieving water quality objectives (California Water Board 2017). The proposed project would not interfere with the objectives and goals in the Basin Plan. This impact would be less than significant.

4.9.6 Mineral Resources

a. Setting

The project is in an urbanized area in Palo Alto. There are no known mineral deposits of local or regional significance identified in or near the project site (City of Palo Alto 2017a). There are also no mining operations in or near the project site.

b. Checklist Questions

In accordance with Appendix G of the *CEQA Guidelines*, the proposed project would result in a significant impact if it would:

1. Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state, or
2. Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan,

c. Answers to Checklist Questions and Conclusions

1-2) The project site and surrounding properties are part of an urbanized area with no current oil or gas extraction. The site is not designated as a significant mineral resources zone as there are no mineral deposits in the area, and the project would not alter or displace mineral resources or mining activities. No impacts would occur.

4.9.7 Population and Housing

a. Setting

The current population of Palo Alto is estimated at 67,657 with a per-person household rate of 2.45 (Department of Finance [DOF] 2021). ABAG estimates that the population will increase to 86,510 by 2040 while the per-person household rate will increase to 2.48 (ABAG 2017). The City also currently has 29,406 housing units (DOF 2021). ABAG projections estimate that the number of housing units will increase to 32,940 by 2040.

The City of Palo Alto Comprehensive Plan states that for multiple-family residential, net densities will range from 8 to 40 units and 8 to 90 persons per acre. Any density higher than what is permitted may be allowed where measurable community benefits will be derived, services and facilities are available, and the net effect will be consistent with the Comprehensive Plan (City of Palo Alto 2017a).

b. Checklist Questions

In accordance with Appendix G of the *CEQA Guidelines*, the proposed project would result in a significant impact if it would:

1. Induce substantial unplanned population growth in an area, either directly (e.g., by proposing new homes and businesses) or indirectly (e.g., through extension of roads or other infrastructure); or
2. Displace substantial amounts of existing people or housing, necessitating the construction of replacement housing elsewhere.

c. Answers to Checklist Questions and Conclusions

1) The project would include up to 91 new residential units in the form of townhome-style condominiums and would therefore directly generate population growth. However, the project site is considered a Housing Element housing inventory site with a capacity for 221 units (City of Palo Alto 2014), and the project would therefore assist the City in meeting its housing goals.

As mentioned above, the current estimated population of Palo Alto is 67,657. Based on the estimated persons per household number of 2.45 (DOF 2021), the project would add an estimated 223 new residents, which would increase the City population to 67,880¹. ABAG estimates that the City's population will increase to 86,510 by 2040, an increase of 18,853 residents. The population increase associated with the project would therefore be within the population forecast for the City.

The City also currently has 29,406 housing units. The addition of 91 units would bring the total number of housing units to 29,497. ABAG projections estimate that the number of housing units in the City will be 32,940 by 2040. The proposed project would therefore not substantially induce population growth through the provision of new housing units and would result in less than significant impacts.

2) There are no existing housing units at the project site or people residing on the project site in a form of temporary housing. Therefore, the project would not displace existing housing units or people. No impacts would occur.

4.9.8 Public Services

a. Setting

Fire protection is provided by the City of Palo Alto Fire Department (PAFD). The Fire Department provides fire suppression, paramedic ambulance service, search and rescue, fire prevention inspections/permits, public fire education programs, emergency preparedness planning and other services based on community needs. The fire station closest to the project site is Fire Station 2, located at 2675 Hanover Street, which is approximately 1 mile southwest of the project site.

Police protection in Palo Alto is provided by the Palo Alto Police Department (PAPD). The police station closest to the project site is located at 275 Forest Avenue, approximately 1.8 miles northwest of the project site. However, the Public Safety Building is currently under construction and would be located near the Caltrain station at 250 Sherman Avenue. This building will house the Police Department, 911 Emergency Dispatch Center, the Emergency Operations Center, and the Office of Emergency Services. Therefore, the closest police station when the proposed project is fully operational would be located approximately 0.4 miles northwest of the site.

The project site is served by the Palo Alto Unified School District (PAUSD), which includes twelve primary schools, three middle schools, two high schools and an adult school.

b. Checklist Questions

In accordance with Appendix G of the *CEQA Guidelines*, the proposed project would result in a significant impact if it would:

¹ 91 new residential units x 2.45 persons per household = 223 new residents

1. Result in substantial adverse physical impacts associated with the provision of new or physically altered fire protection facilities, or the need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:
 - a. Fire protection;
 - b. Police protection;
 - c. Schools;
 - d. Parks;
 - e. Other public facilities.

c. Answers to Checklist Questions and Conclusions

1a) Fire protection is provided by the City of Palo Alto Fire Department (PAFD). The fire station closest to the project site is Fire Station 2, located at 2675 Hanover Street, which is approximately 1 mile southwest of the project site. The project would increase density at the project site and could therefore result in the need for fire station improvements or expansions. However, the 2030 Comprehensive Plan EIR concluded that buildout under the Comprehensive Plan would not require expanded or new fire facilities because new development would be in existing urbanized areas already served by existing PAFD stations and required to comply with California Fire Code regulations (City of Palo Alto 2017b). As outlined in Section 4.9.7, *Population and Housing*, the project would be consistent with the development goals and vision of the 2030 Comprehensive Plan as well as ABAG population estimates and would produce housing for an increase in population within the expectations for Palo Alto. Since the project site is located in an urbanized and existing service area of the PAFD, compliance with the 2030 Comprehensive Plan policies as well as the California Fire Code would result in less than significant impacts to fire protection services.

1b) Police protection in Palo Alto is provided by the Palo Alto Police Department (PAPD). The police station closest to the project site is the Stanford University Police Department, located at 711 Serra Street, which is approximately 1.8 miles northwest of the project site. The project site is within the PAPD's service area and is currently serviced by the PAPD. The project would not create excessive demand for police services or introduce development to areas outside of normal service range that would necessitate new police protection facilities. The proposed project would not create the need for new or expanded police protection facilities and impacts would be less than significant.

1c) The project site is served by the Palo Alto Unified School District (PAUSD). The project would involve up to 91 new residential units. Assuming a conservative student generation rate of one student per residential unit, the proposed project would generate up to 91 additional students at PAUSD schools. Pursuant to Senate Bill 50 (Section 65995(h)), payment of mandatory fees to the affected school district would reduce potential school impacts to less than significant level under CEQA. Therefore, the project would not have a significant impact with respect to schools.

1d) See Section 4.9.9, *Recreation*.

1e) As described in criteria 1a.-1d. above, impacts related to expanded or altered government facilities, including fire, police, school, and park facilities, would be less than significant. Other government facilities include library services. Library services are provided by the Palo Alto City Library. Palo Alto's public library system is comprised of six libraries: Main, Children's,

Downtown, College Terrace, Mitchell Park, and Terman Park. The City has one of the highest library item per capita circulation rates in the nation with over one million volumes loaned in 2017 and some 1 million people using the libraries annually (Palo Alto City Library 2017). The closest library branch is College Terrace located at 2300 Wellesley Street, which is 1.1 miles away from the project site. The proposed project would generate a population growth of approximately 223 new people. This level of population growth would not be substantial and would not require the construction of new library facilities. This impact would be less than significant.

4.9.9 Recreation

a. Setting

Over one third of Palo Alto's land area consists of open space preserves. The City owns and operates approximately 34 parks and preserves, comprised of 174 acres of urban parks and 4,000 acres of open space (City of Palo Alto 2017c). The City's estimated population is 67,657 (DOF 2021). Therefore, the ratio of urban parks to residents in the City is 2.6 acres of parkland for every 1,000 residents and the ratio of open space to residents in the City is 59.1 acres of parkland for every 1,000 residents.

b. Checklist Questions

In accordance with Appendix G of the *CEQA Guidelines*, the proposed project would result in a significant impact if it would:

1. Increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated; or
2. Include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment.

c. Answers to Checklist Questions and Conclusions

1-2) As mentioned under Section 4.9.7, *Population and Housing*, the proposed project would generate an estimated 223 new residents, which would represent less than one percent of the total citywide population. As described in the Recreation Setting above, the City currently has an urban parks to residents ratio of 2.6 acres of parkland for every 1,000 residents, and an open space to residents ratio of 59.1 acres of parkland for every 1,000 residents. By increasing the citywide population to 67,880 residents, urban parks to residents ratio would be slightly reduced but would still round to 2.6 acres of parkland for every 1,000 residents. The increase in population would also result in a slight reduction in open space to residents ratio to 58.9 acres of parkland for every 1,000 residents. The incremental increase in new residents derived from the project would not substantially alter citywide demand for parks such that substantial physical deterioration of parks would occur, or the construction of new recreational facilities would be required. In addition, the project would be required to pay parkland dedication fees to the City.

The proposed project would not include recreational facilities other than the on-site areas that would serve future residents of the project, such as a playground, a dog park, an outdoor seating area and Bocce Ball courts. The park closest to the project site is Peers Park, located at 1899 Park Boulevard, which is a 4.7-acre grassy area with facilities like picnic tables, tennis courts, basketball courts, soccer fields and playgrounds (City of Palo Alto 2021a). Construction of the project would

not involve off-site activities or construction that would directly affect these parks. Therefore, impacts would be less than significant.

4.9.10 Utilities and Service Systems

a. Setting

Wastewater

The City of Palo Alto Utilities Department (CPAU) oversees a wastewater collection system consisting of over 217 miles of sewer lines. The City operates and uses recycled water produced at the Palo Alto-operated Regional Water Quality Control Plant (RWQCP), which has primary treatment (bar screening and primary sedimentation), secondary treatment (fixed film reactors, conventional activated sludge, clarification and filtration), and tertiary treatment (filtration through a sand and coal filter and UV disinfection). Wastewater is routed to RWQCP, where it is treated prior to discharge into the San Francisco Bay. While the CPAU is responsible for the wastewater collection system, the Palo Alto Public Works Department is responsible for the collection/conveyance of sewage collected and delivered to the RWQCP (City of Palo Alto 2021b).

The RWQCP has an average dry weather flow design capacity of 39 MGD (43,680 AF/Y) with full tertiary treatment, and a peak wet weather flow capacity of 80 MGD (89,600 AF/Y) with full secondary treatment. Current 2020 average flows are approximately 17.24 MGD (19,311 AF/Y). The plant capacity is sufficient for current dry and wet weather loads and for future load projections. The RWQCP does not experience any major treatment system constraints and has no planned capacity expansions. Approximately 220,000 people live in the RWQCP service area. Of the wastewater flow to the RWQCP, about 60 percent is estimated to come from residences, 10 percent from industries, and 30 percent from commercial businesses and institutions. The RWQCP treats 21 million gallons per day of effluent from all the partner cities. All the wastewater treated at the RWQCP can be recycled. The plant already has some capability to produce recycled water that meets the Title 22 unrestricted use standard (approximately 4.5 MGD is presently available) (City of Palo Alto 2021b).

Water Supply

The City receives 100% of its potable water from the San Francisco Public Utilities Commission (SFPUC) through the Regional Water System (RWS). To deliver water to its customers, the utility owns roughly 233 miles of mains (which transport the water from the San Francisco Public Utilities Commission (SFPUC) meters at the city's borders to the customer's service laterals and meters), eight wells (to be used in emergencies), five water storage reservoirs (also for emergency purposes), and several tanks used to moderate pressure and deal with peaks in flow and demand (due to fire suppression, heavy usage times, etc.).

In 1993, the City prepared its first Water Integrated Resources Plan (WIRP), and most recently updated and approved a new version in 2017. Supplies from the SFPUC were found to be adequate in normal years, but additional supplies are needed in drought years to avoid shortages. Short-term emergency water needs will be met with the City's groundwater wells and storage system. The City is also a participating agency on the Bay Area Water Supply and Conservation Agency's Long-Term Reliable Water Supply Strategy to meet the projected water needs of its member agencies and their customers through 2040 and to increase their water supply reliability under normal and drought conditions (City of Palo Alto 2021b).

Table 4.9-1 from the City of Palo Alto 2020 UWMP shows the projected City water supply and demand through the year 2045.

Table 4.9-1 City of Palo Alto 2020 to 2045 Projected Water Supply

	2020	2025	2030	2035	2040	2045
Demand	10,921	11,287	11,394	11,546	11,801	12,113
Supply	18,579	18,579	18,579	18,579	18,579	18,579
Difference	7,658	7,292	7,185	7,033	6,778	6,466

Source: City of Palo Alto 2021b, Table 26

AFY = acre-feet per year

Utilities

The City's utility receives electricity at a single connection point with Pacific Gas and Electric's (PG&E's) transmission system. From there the electricity is delivered to customers through nearly 470 miles of distribution lines, of which 223 miles (48 percent) are overhead lines and 245 miles (52 percent) are underground. The City also maintains six substations, roughly 2,000 overhead line transformers, 1,075 underground and substation transformers, and the associated electric services (which connect the distribution lines to the customers' homes and businesses) (City of Palo Alto 2017a).

Solid Waste

The City is currently contracted with GreenWaste of Palo Alto for collection of garbage, recycling and composting services and partners with the cities of Mountain View and Sunnyvale on the Sunnyvale Materials Recovery and Transfer Station (SMaRT Station). The SMaRT Station processes mixed garbage from Palo Alto and recovers recyclable and compostable materials that would have otherwise gone to landfill. The City is also contracted with Waste Management Inc. to use the Kirby Canyon Landfill for waste disposal (City of Palo Alto 2018). The Kirby Canyon Landfill has a remaining capacity of 16,191,600 tons (CalRecycle 2019) and the daily permitted capacity is 2,600 tons per day (Waste Management 2022).

b. Checklist Questions

In accordance with Appendix G of the *CEQA Guidelines*, the proposed project would result in a significant impact if it would:

1. Require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects;
2. Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years;
3. Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments;
4. Generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals; or

5. Comply with federal, state, and local management and reduction statutes and regulations related to solid waste.

c. Answers to Checklist Questions and Conclusions

1 and 3) The project would introduce new residential uses to the project site. As seen on Table 4.9-2, the proposed project would generate an estimated 22,530 gallons of wastewater per day. The increase in wastewater generation associated with the project would be approximately 0.1 percent ($22,530 \text{ gallons per day} / 17.24 \text{ MGD} * 100 = 0.1$) of the existing unused capacity of the RWQCP. Therefore, there would be sufficient wastewater capacity to serve the project site. The proposed project would not exceed wastewater treatment requirements or require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities. The proposed project would not result in a substantial physical deterioration of public wastewater facilities. Impacts would be less than significant.

Table 4.9-2 Estimated Wastewater Generation – 200 Portage Avenue Project

Type of Use	Quantity	Generation Factor (Per Day)	Amount (gallons per day)
Residential – 3 bedroom*	59 du	230 gallons/du/day	13,570
Residential – 4 bedroom*	32 du	280 gallons/du/day	8,960
Total			22,530

* Assumes project would include 59 three-bedroom, and 32 four-bedroom apartment units.

Notes: sf= square feet, du=dwelling unit

Source: City of Los Angeles CEQA Thresholds Guidelines (2006)

2) Development of the residential project would increase demand for potable water. Assuming that water use is approximately 120 percent of wastewater generation (22,530 gallons per day), the proposed project would demand approximately 27,036 gallons of water per day, or 0.08 acre-feet per year (AFY). As shown in Table 26 of the City of Palo Alto 2020 UWMP, available water supply is projected through 2045. Sufficient water supplies would be available to serve the project from existing entitlements and resources. No new or expanded entitlements would be needed to serve the proposed project. The project would not result in a substantial physical deterioration of public water facilities or result in adverse physical impacts from new or expanded utility facilities due to increased use as a result of the project. Impacts would be less than significant.

4 and 5) As shown in Table 4.9-3, the project would generate approximately 364 pounds, or 0.182 tons, of solid waste per day. The incremental increase in solid waste associated with the project would be within the permitted capacities of Kirby Canyon Landfill. Therefore, the project would be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs. The proposed project would not result in a substantial physical deterioration of public solid waste facilities. Impacts would be less than significant.

Table 4.9-3 Estimated Solid Waste Generation

Type of Use	Quantity	Generation Factor	Total (lbs/day)	Total (tons/day)
Residential	91 du	4 lbs/du/day	364	0.182
Total solid waste sent to landfill			364	0.182
Total solid waste sent to landfill assuming 50% diversion rate			182	0.091
Source: CalRecycle Waste Generation Rates 2018. https://www2.calrecycle.ca.gov/WasteCharacterization/General/Rates				
Notes: du=dwelling unit, lbs = pounds, sf = square feet				

4.9.11 Wildfire

a. Setting

The project site is not located within or near a Very High Fire Hazard Severity Zone or state responsibility area. The nearest Very High Fire Hazard Severity Zone is located approximately 10 miles south of the project site, west of Saratoga (CalFire 2007).

b. Checklist Questions

In accordance with Appendix G of the *CEQA Guidelines*, the proposed project would result in a significant impact if it would:

1. Be located in or near state responsibility areas or lands classified as very high fire hazard severity zones and substantially impair an adopted emergency response plan or emergency evacuation plan;
2. Be located in or near state responsibility areas or lands classified as very high fire hazard severity zones and due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to, pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire;
3. Be located in or near state responsibility areas or lands classified as very high fire hazard severity zones and require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment; or
4. Be located in or near state responsibility areas or lands classified as very high fire hazard severity zones and expose people or structures to significant risks, including downslopes or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes.

c. Answers to Checklist Questions and Conclusions

1-4) The project site is not located in or near a Fire Hazard Severity Zone or Very High Hazard Severity Zone for wildland fires (CalFire 2007). No impacts would occur.

This page left intentionally blank

5 Other CEQA Required Discussions

This section discusses growth-inducing impacts, irreversible environmental impacts, and energy impacts that would be caused by the proposed project.

5.1 Growth Inducement

CEQA Guidelines Section 15126(d) requires a discussion of a proposed project's potential to foster economic or population growth, including ways in which a project could remove an obstacle to growth. Growth does not necessarily create significant physical changes to the environment. However, depending upon the type, magnitude, and location of growth, it can result in significant adverse environmental effects. The proposed project's growth inducing potential is therefore considered significant if project-induced growth could result in significant physical effects in one or more environmental issue areas.

5.1.1 Population Growth

As discussed in Section 4.9, *Effects Found not to be Significant*, the proposed project would add 91 new residential units and therefore would directly generate population growth. Based on a per-person household rate of 2.45 for the City of Palo Alto (DOF 2021), these 91 units would add an estimated 223 new residents to the City population. The current population of Palo Alto is estimated at 67,657 (DOF 2019). The addition of new residents from the proposed project to the City would therefore increase the population of Palo Alto to 67,880. The Association of Bay Area Governments (ABAG) and Metropolitan Transportation Commission (MTC) estimates that the City's population will increase to 89,100 by 2025, an increase of 18,853 residents (ABAG and MTC 2018). The population increase associated with the proposed project would therefore be well within the population forecast for the City.

The City also currently has 29,406 housing units. The addition of 91 units would bring the total number of housing units to 29,497. ABAG projections estimate that the number of housing units in the City will be 32,940 by 2040. The proposed project would therefore not substantially induce population growth through the provision of new housing units and would result in less than significant impacts.

In addition, the proposed project involves the addition of housing on a Housing inventory site, as identified in the City's adopted Housing Element, to help meet the City's Regional Housing Need Assessment goal. Therefore, while the project would result in population growth, such growth would be consistent with local and regional housing goals and planning for such growth.

Overall, population growth associated with the project would not result in significant long-term physical environmental effects, other than those already disclosed in this EIR.

5.1.2 Economic Growth

The proposed project would generate temporary employment opportunities during construction. Because construction workers would be expected to be drawn from the existing regional work force, construction of the project would not be growth-inducing from a temporary employment standpoint. The proposed project would not involve new commercial uses that would add long-term

employment opportunities. Overall, the proposed project would not induce substantial economic expansion to the extent that direct physical environmental effects would result.

5.1.3 Removal of Obstacles to Growth

The project site is located in a fully urbanized area that is well served by existing infrastructure. As discussed in Section 4.9, *Effects Found not to be Significant*, and Section 4.8, *Transportation*, of this EIR, existing infrastructure in Palo Alto would be adequate to serve the project. Minor improvements to water, sewer, and drainage connection infrastructure could be needed, but would be sized to specifically serve the project. No new roads would be required. Because the proposed project constitutes redevelopment within an urbanized area and does not require the extension of new infrastructure through undeveloped areas, project implementation would not remove an obstacle to growth.

5.2 Irreversible Environmental Effects

The *CEQA Guidelines* require that EIRs contain a discussion of significant irreversible environmental changes. This section addresses non-renewable resources, the commitment of future generations to the proposed uses, and irreversible impacts associated with the proposed project.

The proposed project involves infill development on a currently developed lot in the City of Palo Alto. Construction and operation of the project would involve an irreversible commitment of construction materials and non-renewable energy resources. Construction would involve the use of building materials and energy, some of which are non-renewable resources. Consumption of these resources would occur with any development in the region and are not unique to the proposed project.

The proposed project would also irreversibly increase local demand for non-renewable energy resources such as petroleum products and natural gas. However, development would be subject to the energy conservation requirements of the California Energy Code (Title 24, Part 6, of the California Code of Regulations, *California's Energy Efficiency Standards for Residential and Nonresidential Buildings*) and the California Green Building Standards Code (Title 24, Part 11 of the California Code of Regulations). The California Energy Code provides energy conservation standards for all new and renovated commercial and residential buildings constructed in California, and the Green Building Standards Code requires solar access, natural ventilation, and stormwater capture. Consequently, development would not use unusual amounts of energy or construction materials and impacts related to consumption of non-renewable resources would be less than significant. Again, consumption of these resources would occur with any development in the region and is not unique to the proposed project.

Additional vehicle trips associated with the proposed project would incrementally increase local traffic and regional air pollutant and GHG emissions. As discussed in Section 4.1, *Air Quality*, and Section 4.4, *Greenhouse Gas Emissions*, of this EIR, development and operation of the proposed project would not generate air quality or GHG emissions that would result in a significant impact. Additionally, Section 4.8, *Transportation*, of this EIR conclude that long-term impacts associated with the proposed project would be less than significant based on City and regional thresholds.

The project would also require a commitment of law enforcement, fire protection, water supply, wastewater treatment, and solid waste disposal services. However, as discussed in Section 4.9, *Effects Found Not to be Significant*, impacts to these service systems would not be significant.

CEQA requires decision makers to balance the benefits of a proposed project against its unavoidable environmental risks in determining whether to approve a project. The analysis contained in this EIR concludes that the proposed project would result in a significant and unavoidable impact to cultural resources because it would include partial demolition of building that is over 45 years of age and that has been deemed eligible for listing on the California Register of Historic Resources. Although the proposed project would implement mitigation, as discussed in Section 4.2 *Cultural Resources and Tribal Cultural Resources*, impacts would remain significant and unavoidable due to this irreversible loss.

5.3 Energy Effects

Public Resources Code Section 21100(b)(2) and Appendix F of the *CEQA Guidelines* requires an EIR to discuss the potential for a project to result in impacts related to energy consumption and/or conservation. A project may have the potential to cause such impacts if it would result in inefficient, wasteful, or unnecessary consumption of energy, including electricity, natural gas, or transportation fuel supplies and/or resources. Impacts associated with energy use are discussed in Section 4.3, *Energy*, of this EIR and were found to be less than significant.

This page intentionally left blank.

6 Alternatives

As required by Section 15126.6 of the *CEQA Guidelines*, this EIR examines a range of reasonable alternatives to the proposed project that would attain most of the basic project objectives (stated in Section 2, *Project Description* of this EIR) but would avoid or substantially lessen the significant adverse impacts. A lead agency may also examine additional alternatives to provide options for consideration that may better fulfill the lead agency's planning or land use policies or priorities. Section 15126.6 also requires consideration of a "No Project" alternative, regardless of whether it would achieve the project objectives or lessen its environmental effects.

As discussed in Section 2, *Project Description*, the objectives for the proposed project are as follows:

1. Develop a well-designed ownership residential townhome project that adds diversity to the City of Palo Alto's ownership housing supply and will meet a variety of residents' needs by providing a mix of 3- and 4-bedroom units to meet the needs of families.
2. Develop residential uses (including on-site affordable units) on a site specifically designated for housing in the City of Palo Alto's Housing Element but that does not currently contain any housing, and that will help meet the City's Regional Housing Needs Assessment (RHNA) obligations.
3. Construct a single, cohesive development consisting of high-quality, contemporary urban design that respects and relates well to its surroundings and respects the historic uses at the site including the portion of the Cannery building that will remain.
4. Contribute to the concept of a "complete neighborhood" and overall balance and mix of uses in Palo Alto, consistent with the orderly development of the area and the ongoing North Ventura Coordinated Area Plan (NVCAP) process. Provide sufficient parking but do not overpark the site, consistent with regional transportation and climate policy goals.
5. Achieve the streamlined and efficient processing and approval of the project including benefits available to developments that include affordable housing consistent with State housing law, including the Housing Accountability Act, State Density Bonus Law, and Permit Streamlining Act.

Included in this analysis are two alternatives, including the CEQA-required "no project" alternative, that involve changes to the project that may reduce the project-related environmental impacts as identified in this EIR. Alternatives have been developed to provide a reasonable range of options to consider that would help decision makers and the public understand the general implications of revising or eliminating certain components of the proposed project.

The following alternatives are evaluated in this EIR:

- Alternative 1: No Project Alternative
- Alternative 2: Adaptive Reuse of Eligible Historic Resource for Housing Alternative
- Alternative 3: Development Agreement Alternative

Detailed descriptions of the alternatives are included in the impact analysis for each alternative and Table 6-1 shows a comparison of the alternatives and the proposed project. The potential environmental impacts of each alternative are analyzed in Sections 6.1 through 6.4.

Table 6-1 Comparison of Alternatives

	Proposed Project	Alternative 1: No Project	Alternative 2: Adaptive Reuse of Eligible Historic Resource for Housing	Alternative 3: Development Agreement
Residential Units	91 townhome units	None	281 residential units at the 200 Portage building to remain 12 townhome units - Total of 293 units	74 townhome units 75 affordable housing units - Total of 149 units
Other Uses	Rehabilitation of a portion of the existing building at 200 Portage Avenue for R&D use	Uses on site would remain the same	7,400 sf of commercial space - Parking - Open space	- Retain the existing 142,744 square feet of R&D uses - Existing 11,762 sf of Auto Care Center space redeveloped into R&D 2,600 sf of retail space - One level over grade parking structure - Open space
Demolition/ Removal of Uses	84,000 sf vacant retail space 1,750 sf building at 3040 Park Boulevard	None	- Removal of 142,744 sf of R&D space - Removal of 5,639 sf of warehouse space	5,639 sf of warehouse space 84,000 sf of vacant retail space 1,750 sf building at 3040 Park Boulevard
Sf = square feet, R&D = research and development				

6.1 Alternative 1: No Project Alternative

6.1.1 Description

The No Project Alternative assumes that the 91 townhome units proposed at the 200 Portage Avenue project site would not be constructed. The existing buildings and uses on the site would remain under this alternative and uses would be governed by the City’s non-conforming use regulations. This alternative would not fulfill the objectives of the proposed project because new residential units would not be developed in the near term to help the City meet its housing supply and affordability goals, and would not contribute towards the concept of a “complete neighborhood” consistent with the NVCAP.

6.1.2 Impact Analysis

a. Air Quality

Under Alternative 1, no demolition or construction activities would occur at the project site and the existing buildings and uses would remain unchanged. Overall, air quality impacts would be reduced compared to those of the proposed project because construction would not occur and operational uses on-site would remain the same. No impacts would occur.

b. Cultural Resources and Tribal Cultural Resources

As described in Section 4.2, *Cultural Resources and Tribal Cultural Resources*, the building at 200 Portage Avenue is eligible for listing in the CRHR under Criterion 1 (Events) at the local level. Under

the No Project Alternative, partial demolition of the building would not occur, mitigation measures would not be required, and the significant and unavoidable impacts to potential historic resources would be avoided.

Construction at the project site would not occur under this alternative, and potential impacts related to the unanticipated discovery of archaeological resources, human remains, and tribal cultural resources during construction activity would not occur. Mitigation measures CR-1 through CR-4 would not be required. Overall, cultural and tribal cultural resources impacts would be reduced compared to those of the proposed project; no impacts would occur.

c. Energy

Under the No Project Alternative, no demolition or construction activities would occur at the project site and the fuel used for vehicle trips to and from the project site would remain unchanged. Operational energy demand in the form of electricity and natural gas usage would also remain unchanged. Impacts related to energy would therefore be reduced under this alternative compared to the proposed project; there would be no impact.

d. Greenhouse Gas Emissions

No demolition or construction activities would occur under this alternative, and vehicle trips in the area as well as energy use in existing buildings would remain unchanged. Overall, GHG impacts would be reduced compared to those of the proposed project; no impact would occur.

e. Hazards and Hazardous Materials

Since no demolition or construction would occur under the No Project Alternative, potential hazardous materials such as asbestos and lead-based paint dust would not be released from buildings and the project would not involve ground disturbance or the construction of residences on a site with the potential presence of soil, soil vapor, and groundwater contamination. Therefore, mitigation measures HM-1 through HM-3 would not be required and impacts related to hazards and hazardous materials would be reduced under this alternative compared to the proposed project. The No Project Alternative would also not involve the use of hazardous materials (other than those already in use on the site) and would not impair an adopted emergency response or evacuation plan or expose people residing or working near the project site to safety hazards or excessive noise or wildland fires. Overall, hazards and hazardous materials impacts would be reduced compared to those of the proposed project. No impact would occur.

f. Land Use and Planning

No new buildings would be constructed under the No Project Alternative and existing buildings on site would remain. Although the majority of the site is within the Medium Density Multiple-Family Residence District (RM-30), and the parcel at 3040 Park Street is zoned General Manufacturing (GM), the cannery building on site is non-conforming and is subject to PAMC Chapter 18.70 and Section 18.70.030(b)(2)(E) which governs non-conforming uses. The No Project Alternative would not be consistent with the North Ventura Coordinated Area Plan (NVCAP) vision since it would not add to the City's supply of multifamily and affordable housing. Therefore, impacts to land use and planning would be increased compared to impacts under the proposed project. However, this alternative would not preclude future development of the site for housing. Therefore, impacts would be less than significant. Overall, land use and planning impacts would be less than significant but greater than those of the proposed project.

g. Noise

Under the No Project Alternative, the operation of the buildings on site would continue unchanged. Noise levels would not increase compared to existing levels. In addition, since no demolition or construction activities would occur, Mitigation Measure N-1 would not be required to reduce construction vibration. Therefore, noise impacts under the No Project Alternative would be reduced compared to impacts under the proposed project. No impacts would occur.

h. Transportation

Under the No Project Alternative, transportation and traffic conditions would not change. There would be no change in the number of vehicle trips to and from the project site, no change in vehicle miles traveled (VMT), and all intersections would continue to operate at their current level of service (LOS) (as described in Section 4.8, *Transportation*, a discussion of the alternative's effects on LOS for informational purposes is relevant to consistency with the City's Comprehensive Plan policies for the circulation system).

This alternative would not conflict with the City's Bicycle and Pedestrian Transportation Plan as the site would stay in its current condition and the No Project Alternative would not preclude future development of a bike lane through the site. Implementation of Mitigation Measure T-1 would not be required.

Overall transportation impacts under the No Project Alternative would be reduced compared to impacts under the proposed project. No impacts would occur.

i. Impact Areas Addressed in Section 4.9, Effects Found not to be Significant

Under the No Project Alternative, no impacts associated with demolition or construction activities would occur, and impacts related to such activities would therefore be reduced compared to those associated with the proposed project. There would be no impacts related to aesthetics, agricultural resources, biological resources, geology and soils, hydrology and water quality, mineral resources, and wildfire. Additionally, since no residential units would be constructed under the No Project Alternative, there would be no project-associated increase to the city's population, and impacts to population and housing, public services, recreation, and utilities and service systems would not occur.

6.2 Alternative 2: Adaptive Reuse of Eligible Historic Resource for Housing

6.2.1 Description

Consistent with the City Council's selected alternative for the NVCAP, Alternative 2 assumes that , the parcels across the project site would be merged and that development would occur across the entire project site, including parcels 132-38-071 and 132-32-036, -042, and -043, not just on the area of proposed development as identified in the description of the proposed project. The eligible historical resource at 200 Portage (also known as 340 Portage) would remain, would be increased in height to three stories, and the interior of the building would be developed with 281 residential units under this alternative. Although adaptive reuse would retain more of the historic integrity of the existing building by retaining it, it is unclear whether adaptive reuse of the building for housing could be completed in conformance with the Secretary of the Interior Standards for Treatment of

Historic Properties and in accordance with the California Historic Building Code, as discussed further in Section 6.2.2(b) below and further study may be required if this alternative is selected.

An additional residential townhome building up to 35 feet in height with 12 units would be constructed in the current parking area east of the 200 Portage building. Overall, this alternative assumes up to 293 residential units across the project site. The existing commercial space in the 200 Portage building would be reduced and only 7,400 square feet of commercial space would remain. The building at 3040 Park Boulevard and the auto uses east of Matadero Creek would not be demolished and would remain. Figure 6-1 shows the conceptual layout of this alternative.

Alternative 2 would meet most of the project objectives, though further study may be required into how this alternative could be achieved.

6.2.2 Impact Analysis

a. Air Quality

Under Alternative 2, demolition of the portion of the existing commercial building at 200 Portage Avenue and the commercial building at 3040 Park Boulevard within the area of proposed development would not occur. Although some demolition would be required in order to increase the height to accommodate 281 residential units at 200 Portage and remove the existing R&D and warehouse uses, emissions resulting from demolition and impacts to air quality under this alternative would be reduced. Since Alternative 2 would involve the construction of one building with up to 12 townhome style units, construction and construction equipment would occur and operate over a shorter duration compared to the proposed project, which would result in less construction-related emissions. Construction emissions associated with Alternative 2 are shown on Table 6-2. As shown, construction emissions would be below Bay Area Air Quality Management District (BAAQMD) thresholds.

Table 6-2 Alternative 2 Estimated Construction Emissions

Sources	Average Daily Emissions (lbs/day)					
	ROG	NO _x	CO	PM ₁₀ (exhaust)	PM _{2.5} (exhaust)	SO _x
Maximum Daily Construction Emissions	18	33	26	<1	<1	<1
BAAQMD Thresholds	54	54	N/A	82	54	N/A
Threshold Exceeded?	No	No	N/A	No	No	N/A

See Appendix I for AQ CalEEMod worksheets; emission data presented is the highest of winter or summer outputs
 N/A = not applicable; lbs/day = pounds per day; ROG = reactive organic gases; NO_x = oxides of nitrogen; CO = Carbon Monoxide; PM_{2.5} = fine particulate matter with an aerodynamic resistance diameter of 2.5 micrometers or less; PM₁₀ = respirable particulate matter with an aerodynamic resistance diameter of 10 micrometers or less; SO_x = oxides of sulfur.
 No BAAQMD threshold for CO or SO_x

Operational emissions associated with Alternative 2 are shown on Table 6-3. Net operational emissions from Alternative 2 would be reduced compared to the proposed project and would be below applicable BAAQMD thresholds. Like the proposed project, impacts would be less than significant and would be reduced.

Figure 6-1 Conceptual Plan for Alternative 2



Imagery provided by Microsoft Bing and its licensors © 2022.

Table 6-3 Alternative 2 Estimated Operational Emissions

Sources	Estimated Annual Emissions (tpy)					
	ROG	NO _x	CO	PM ₁₀	PM _{2.5}	SO _x
Alternative 2						
Area	1	<1	2	<1	<1	<1
Energy	<1	<1	<1	<1	<1	<1
Mobile	1	1	6	1	<1	<1
Total Annual Emissions (Alternative 2)	2	1	8	1	<1	<1
Existing Uses to be Removed						
Area	(1)	(<1)	(<1)	(0)	(0)	(0)
Energy	(<1)	(<1)	(<1)	(<1)	(<1)	(<1)
Mobile	(1)	(1)	(5)	(1)	(<1)	(<1)
Total Annual Emissions (Existing Uses to be Removed)	(1)	(1)	(5)	(1)	(<1)	(<1)
Total Net Annual Operational Emissions	1	0	3	0	<1	<1
BAAQMD Annual Thresholds	10	10	N/A	15	10	N/A
Threshold Exceeded?	No	No	No	No	No	No

See Appendix I for AQ CalEEMod worksheets; annual output

N/A = not applicable; tpy = tons per year; ROG = reactive organic gases; NO_x = oxides of nitrogen; CO = Carbon Monoxide; PM_{2.5} = fine particulate matter with an aerodynamic resistance diameter of 2.5 micrometers or less; PM₁₀ = respirable particulate matter with an aerodynamic resistance diameter of 10 micrometers or less; SO_x = oxides of sulfur.

() denotes subtraction

No BAAQMD threshold for CO or SO_x

Impacts associated with toxic air contaminants (TACs), carbon monoxide hotspots, and odors would be the same as those under the proposed project for the same reasons as described in Section 4.1, *Air Quality*. Alternative 2 would be consistent with the Santa Clara Valley Transportation Authority Congestion Management Program, would not increase traffic volumes at affected intersections to more than 44,000 vehicles per hour, and would not increase traffic volumes at the affected intersections to more than 24,000 vehicles per hour where vertical and/or horizontal mixing is substantially limited. Alternative 2 would also be required to implement current BAAQMD *Basic Construction Mitigation Measures* during all phases of construction and would not introduce a new stationary source of toxic air contaminants (TACs) that would expose sensitive receptors to substantial TAC concentrations. Overall, air quality impacts would be less than significant but more than that of the proposed project.

b. Cultural Resources and Tribal Cultural Resources

As described in Section 4.2, *Cultural Resources and Tribal Cultural Resources*, the building at 200 Portage Avenue (the “Fry’s Building”) is eligible for listing in the CRHR under Criterion 1 (Events) at the local level, while the building at 3040 Park Boulevard is not eligible for listing in the NRHP, CRHR, or as a City of Palo Alto Historic Structure. Alternative 2 would include adaptive reuse of the historic Fry’s building and would not require demolition of a portion of the historic building, however, it

would require some demolition activities in order to increase the height at 200 Portage to accommodate 281 new residential units and change the use from commercial to residential. It is assumed that rehabilitation would be completed in conformance with the Secretary of the Interior Standards for Treatment of Historic Properties and in accordance with the California Historic Building Code, which allows for more flexible application of building regulations when impacting a historic resource. Character-defining features of the building would be repaired and maintained in-situ to the highest degree feasible. However, without project plans and further evaluation of the modifications that would be necessary to meet current code requirements to accommodate a residential use, it is unclear whether this alternative could be realized in a manner that is consistent with the Secretary of the Interior Standards for Rehabilitation. Therefore, while this alternative may be less impactful on a historic resource in comparison to the proposed project because it would not require demolition of a large portion of the building footprint, impacts to a historic resource under this alternative are still considered to be significant and unavoidable. Mitigation Measures CR-1 and CR-2 would be required for this alternative, but, similar to the proposed project, would not reduce impacts to a less than significant level.

The site is not identified as sensitive for archaeological resources, and there are no known tribal cultural resources within the project site. However, mitigation measures CR-3 and CR-4 would continue to apply since earth-disturbing construction activities such as construction of the 12 townhome units could potentially uncover unidentified archaeological resources or tribal cultural resources. Impacts related to archaeological resources, human remains, and tribal cultural resources would be the same as under the proposed project and would be less than significant with mitigation incorporated.

Overall, cultural and tribal cultural resources impacts would be less than that of the proposed project but would not be reduced to a less than significant level and would still be significant and unavoidable.

c. Energy

As with air quality impacts, energy impacts related to demolition and construction activities under this alternative would be similar to impacts under the proposed project. Although this alternative involves 293 residential units compared to 91 units for the proposed project, it would also involve removal of R&D and warehouse space. Overall, impacts related to energy use would be similar to the proposed project and this alternative would not result in the wasteful or inefficient use of energy for the same reasons as described for the proposed project.

In addition, development under this alternative would be in an area served by transit and would be required to comply with the Palo Alto Green Building Ordinance to include energy efficient appliances and lighting, as well as water efficient fixtures and irrigation. Therefore, this alternative would be consistent with local goals and policies related to energy reduction. Overall, energy impacts would be less than significant, same as the proposed project, but greater than those of the proposed project.

d. Greenhouse Gas Emissions

As with air quality and energy impacts, this alternative would result in slightly reduced impacts related to GHG emissions during construction due to the reduced amount of demolition. As shown on Table 6-4, when taking into account the removal of operational emissions associated with the existing commercial uses on site, as well as construction of greener buildings, this Alternative would result in a net decrease of emissions by 33 MT CO₂e. Therefore, this alternative would not exceed

the interpolated BAAQMD threshold. Overall, GHG impacts would be less than significant, same as the proposed project, and reduced compared to the proposed project.

Table 6-4 Alternative 2 Combined Annual Emissions of Greenhouse Gases

Emission Source	Annual Emissions (MTCO ₂ e)
Alternative 2	
Operational	
Area	
Energy	4
Mobile	138
Solid Waste	1,052
Water	7110
Total Emissions from Alternative 2	1,275
Existing Uses to be Removed	
Existing Operational	
Area	(<1)
Energy	(202)
Mobile	(1,054)
Solid Waste	(8)
Water	(44)
Total Emissions from Existing Uses to be Removed	(1,308)
Total Emissions from Alternative 2 (Alternative 2 minus Existing Uses to be Removed)	(3)
Interpolated BAAQMD Threshold	660
Exceed Threshold?	No

Source: Table 2.2 in GHG CalEEMod annual worksheets, see Appendix I for calculations and for GHG emission factor assumptions.

() denotes subtraction

e. Hazards and Hazardous Materials

Like the proposed project, construction activities could expose the public and environment to contaminated groundwater and soils since several areas of the project site are listed on hazardous materials sites as shown in Figure 4.5-1 of Section 4.5, *Hazards and Hazardous Materials*. Furthermore, known VOCs below the site could contribute to vapor intrusion impacts during operation of the project. Therefore, mitigation measures HAZ-1 and HAZ-2 as well as the Vapor Intrusion Prevention Condition of Approval would be required in order to reduce impacts to the public and the environment from on-site contamination to a less than significant level.

For the same reasons as described for the proposed project, Alternative 2 would not create a significant hazard to the public or environment through the routine transport, use, or disposal of hazardous materials; would not 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; would not emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school; would not be located within an airport land use plan or within two miles of a public airport;

would not impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan; and would not expose people or structures to loss, injury, or death involving wildland fires. Overall, hazards and hazardous materials impacts would be less than significant, same as the proposed project, and similar to those of the proposed project.

f. Land Use and Planning

Under Alternative 2, only 12 townhome units would be constructed in the existing surface parking lot. The project would not involve partial demolition of the 200 Portage Avenue building but would include adaptive reuse of the existing commercial building on 200 Portage Avenue to include 281 units and retain 7,400 square feet of existing commercial space. Similar to the proposed project, this alternative would also require a subdivision map to facilitate development of the residential units. The existing commercial space that would be retained would be consistent with PAMC Section 18.70.030(b)(2)(E) which governs non-conforming uses on site. Similar to the proposed project, Alternative 2 would be consistent with zoning and development standards for the Medium Density Multiple-Family Residence District (RM-30). The 12-unit townhome building would be built to a height of 35 feet which would be consistent with the 35-foot maximum height under the RM-30 zone. The existing building on 3040 Park Boulevard would remain under this alternative. The proposed housing and retail uses would be consistent with the multi-family Comprehensive Plan Land Use Designation for the site; the current uses, which conflict with the Comprehensive Plan land use designation would be removed. The office use at 3201-3225 Ash Street and auto care use at 3205 Park Boulevard would remain and would continue to be subject to Chapter 18.70 of the municipal code as legal nonconforming uses. The new townhome development would be required to be constructed in conformance with the current code. Because the existing historic building would be retained, the building would not be consistent with the RM-30 zone district requirements, particularly with respect to setbacks. The site's density would also exceed the allowable density in the municipal code. Therefore, rezoning would likely be proposed in order to accommodate the building, as revised. It's possible that a proposed project could utilize the state density bonus allowances to allow for the project without the need for rezoning. With approval of a rezoning application or any necessary waivers or concessions in accordance with a state density bonus, the project would comply with the zoning code. Alternative 2 would be consistent with the City's Comprehensive Plan use and policies as well as the NVCAP vision and would add to the City's supply of multifamily housing in proximity to transit. Overall, land use and planning impacts would be less than significant and generally the same as under the proposed project.

g. Noise

Under Alternative 2, construction-related noise and vibration would be slightly less than construction-related impacts under the proposed project since Alternative 2 would require some demolition activities to increase height at 200 Portage to accommodate 281 new units and change the use from commercial to residential. Mitigation Measure N-1 would reduce vibration during construction to a less than significant level. Like the proposed project, operational noise would consist of general site activities, outdoor amenities, and HVAC systems.

Like the proposed project, impacts associated with operational noise would be less than significant for the same reasons as described in Section 4.5, *Noise*. As shown in Appendix I, HVAC noise levels from the increase of 202 units under Alternative 2 would generate approximately 46 dBA L_{eq} , approximately 5 dBA L_{eq} more than the proposed project. This would still be lower than the City's threshold of a 6 dBA increase for residential properties over ambient noise levels, and lower than

the 8 dBA increase for nearby commercial and industrial properties over ambient noise levels. Additionally, although the project involves an increase in residential units, it would also involve a reduction in R&D and warehouse space. As discussed below in section (h), Transportation, this alternative would reduce vehicle trips compared to the proposed project and therefore would reduce traffic noise compared to the proposed project.

Overall, noise impacts would be less than significant, same as the proposed project, and even though operational noise from residential HVAC would be slightly greater, Alternative 2 would remove existing R&D use on site and therefore overall operational noise would be slightly less than those of the proposed project.

h. Transportation

Alternative 2 would involve construction and operation of more housing units compared to the proposed project, includes a 7,400 sf retail component, and removes 142,744 sf of R&D uses. However, since construction would not involve demolition and would include adaptive reuse of the existing building on site, trips generated from construction would be reduced compared to the proposed project.

Operation of Alternative 2 would result in an increased number of residential trips generated due to the increase in new residents but would also involve removal of 148,383 square feet of R&D and warehouse space and associated trips. Overall, the project would result in an estimated 24 new PM peak hour trips and a net reduction in AM peak hour trips since the new housing and retail would replace existing R&D and warehouse uses. Because the proposed project would replace only the vacant retail space, the proposed project would result in a greater number of peak hour trips (47 PM peak hour and 40 AM peak hour) in comparison to Alternative 2. As described in Section 4.8, *Transportation*, a discussion of the alternative's effects on LOS for informational purposes is relevant to consistency with the City's Comprehensive Plan policies for the circulation system. Because it would result in fewer trips, this alternative would potentially result in less congestion at study intersections than those associated with the proposed project.

As described in Section 4.8, *Transportation*, the VMT per capita for the proposed project residential uses would be 4.89, which is substantially below the City's adopted threshold of 11.33 miles per resident. The 7,400 square foot retail component would be below the City's 10,000 square-foot threshold and therefore is also presumed to be less than significant. The project would also include removal of 142,744 square feet of R&D use as well as 5,639 square feet of warehouse uses and is located within one half-mile of a high-quality transit corridor, which would further reduce impacts related to VMT. Therefore, impacts would be less than significant and would be reduced in comparison to the proposed project.

Finally, like the proposed project, this alternative would not conflict with a program, plan, ordinance or policy addressing transit or pedestrian facilities for the same reasons described in Section 4.8, *Transportation*. However, as with the proposed project, Alternative 2 would conflict with the City's Bicycle and Pedestrian Transportation Plan since an enhanced bikeway traversing the site is not included as part of the project description or site plans. Implementation of Mitigation Measure T-1 would be required to reduce impacts to a less than significant level. Overall, CEQA-related transportation impacts would be less than significant and slightly reduced in comparison to the proposed project.

i. Impact Areas Addressed in Effects Found Not to be Significant

As with the proposed project, Alternative 2 would be consistent with SB 743 since it would be located approximately 0.4 miles southeast of the California Avenue Train Station located at 101 California Avenue, and therefore satisfies the definition of a transit priority area since the project site would be within 0.5 mile of a major transit stop. Because Alternative 2 would result in residential use on an infill site within a transit priority area, aesthetics impacts may not be considered significant impacts on the environment. Additionally, there would be no impacts related to agriculture and forestry resources or mineral resources.

Under this alternative, 293 new housing units would be developed, which could generate population growth. Using the estimated persons per household number of 2.45 (DOF 2021), the project would generate approximately 718 new residents, which would increase the City population to 68,375. As discussed in Section 4.9.7, *Effects Found Not to be Significant – Population and Housing*, ABAG estimates that the City's population will increase to 86,510 by 2040, an increase of 18,853 residents. The population increase associated with the project would therefore be within the population forecast for the city. ABAG projections also estimate that the number of housing units in the city will be 32,940 by 2040. Alternative 2 would increase the number of housing units in the city from 29,406 to 29,699, which would be within ABAG's projections. As discussed in Section 4.9.7, *Effects Found Not to be Significant – Utilities and Service Systems*, the demand for water and generation of wastewater, stormwater, and solid waste would constitute a small percentage of the existing capacity of water, wastewater, stormwater, and solid waste infrastructure. Although Alternative 2 would increase the number of residential units on site, existing utility infrastructure and the Kirby Canyon Landfill would still have sufficient capacity to serve this alternative. Impacts related to biological resources, geology and soils, hydrology and water quality, public services, recreation, and wildfire would also have similar but slightly greater impacts as the proposed project due to an increase in the number of residential units. However, impacts would remain less than significant.

6.3 Alternative 3: Development Agreement

6.3.1 Description

Alternative 3 would involve a Development Agreement between the City and the applicant. The project under the Development Agreement would include the following key components:

- Demolishing an 89,639 square foot portion of the existing 232,383 square foot building at 200/340 Park Boulevard
- Demolishing the building at 3040 Park Boulevard
- Changing the use of the existing 11,762 square foot building at 3250 Park Boulevard from an Auto Care Center use to Research & Development (R&D)
- Constructing 74 new market rate townhomes
- Dedicating a 3.25-acre parcel to the City of Palo Alto to for the purposes of public open space and development of 75 units of affordable below market rate (BMR) housing

The remaining building at 200/340 Portage Avenue would retain the existing 142,744 square feet of R&D uses and add 2,600 square feet of new retail in a 145,344 square foot building. The existing 5,639 square feet of warehouse use and 84,000 square feet of vacant retail space within this building would be removed under this alternative. This alternative includes all of Assessor Parcels

132-38-071 and 132-32-036, -042, and -043 (consistent with the project site, as defined in Chapter 2, Project Description) as well as parcels 132-02-07 and 132-38-043. These additional two parcels included in the total area under Alternative 3 add 0.38 acres to the total site area. No development exists or would be proposed on either of these two parcels (consistent with the proposed project and other alternatives). The applicant would file a subdivision map to realign the site into five resulting parcels. These parcels would be divided as shown in Table 6-5.

Table 6-5 Alternative 3 Parcels

Existing	Proposed	Proposed Use	Proposed Acreage
200 Portage/3200 Park	Parcel 1	Townhouses	3.91
	Parcel 2	Dedicated to City (Open Space/BMR)	3.25
	Parcel 3	Remaining Cannery Building retaining R&D Uses and 2600 sf of new retail use	6.30
	Parcel 4	Ash office building (3201 Ash Street	0.42
	Parcel 5	3250 Park Boulevard	0.77
Total			14.65

Alternative 3 would require a Comprehensive Plan Amendment in order to allow for R&D uses within the cannery building (200/340 Portage; 3200 Park Avenue) and office use at 3201-3225 Ash Street to remain as a conforming use. It would also be required to allow R&D in the Audi building (3205 Park Boulevard) to remain as a conforming use. Each parcel would be rezoned with a planned community zoning designation to allow for either the existing buildings to remain or new development to occur in accordance with the development agreement.

Figure 6-2 shows the conceptual layout of the development Agreement Alternative.

Figure 6-2 Conceptual Plan for Alternative 3



6.3.2 Impact Analysis

a. Air Quality

Under Alternative 3, similar to the proposed project, demolition of the portion of the existing cannery building (87,039 square feet) and the commercial building at 3040 Park Boulevard within the area of proposed development (1,750 square feet) would occur, resulting in similar emissions from demolition. The remainder of the cannery building would remain as R&D, and the Auto Care Center would remain but would be converted into R&D space. The existing Ash Street building would remain as office space. Construction emissions for Alternative 3 are shown on Table 6-6. As shown, construction emissions would be below applicable BAAQMD thresholds.

Table 6-6 Alternative 3 Estimated Construction Emissions

Sources	Average Daily Emissions (lbs/day)					
	ROG	NO _x	CO	PM ₁₀ (exhaust)	PM _{2.5} (exhaust)	SO _x
Maximum Daily Construction Emissions	15	27	26	<1	<1	<1
BAAQMD Thresholds	54	54	N/A	82	54	N/A
Threshold Exceeded?	No	No	N/A	No	No	N/A

See Appendix I for AQ CalEEMod worksheets; emission data presented is the highest of winter or summer outputs
 N/A = not applicable; lbs/day = pounds per day; ROG = reactive organic gases; NO_x = oxides of nitrogen; CO = Carbon Monoxide; PM_{2.5} = fine particulate matter with an aerodynamic resistance diameter of 2.5 micrometers or less; PM₁₀ = respirable particulate matter with an aerodynamic resistance diameter of 10 micrometers or less; SO_x = oxides of sulfur.
 No BAAQMD threshold for CO or SO_x

Alternative 3 would include up to 74 new market rate townhomes and 75 affordable housing units for a total of 149 new units, compared to 91 units under the proposed project, as well as 2,600 square feet of retail space. Overall emissions would be slightly greater than those associated with the proposed project since Alternative 3 would include construction of 58 more units compared to the proposed project. Nonetheless, construction and total net operational emissions from Alternative 3 would still be below applicable BAAQMD thresholds, as shown in Table 6-7. Like the proposed project, impacts would be less than significant.

Table 6-7 Alternative 3 Estimated Operational Emissions

Sources	Estimated Annual Emissions (tpy)					
	ROG	NO _x	CO	PM ₁₀	PM _{2.5}	SO _x
Alternative 3						
Area	1	<1	1	<1	<1	<1
Energy	<1	<1	<1	<1	<1	<1
Mobile	<1	<1	3	1	<1	<1
Total Annual Emissions (Alternative 3)	1	<1	4	1	<1	<1
Existing Uses to be Removed						
Area	(<1)	(0)	(<1)	(0)	(0)	(0)
Energy	(<1)	(<1)	(<1)	(<1)	(<1)	(<1)
Mobile	(<1)	(<1)	(1)	(<1)	(<1)	(<1)

Sources	Estimated Annual Emissions (tpy)					
	ROG	NO _x	CO	PM ₁₀	PM _{2.5}	SO _x
Total Annual Emissions (Existing Uses to be Removed)	(<1)	(<1)	(1)	(<1)	(<1)	(<1)
Total Net Annual Operational Emissions	1	(<1)	3	1	<1	<1
BAAQMD Annual Thresholds	10	10	N/A	15	10	N/A
Threshold Exceeded?	No	No	No	No	No	No

See Appendix I for AQ CalEEMod worksheets; annual output

N/A = not applicable; tpy = tons per year; ROG = reactive organic gases; NO_x = oxides of nitrogen; CO = Carbon Monoxide; PM_{2.5} = fine particulate matter with an aerodynamic resistance diameter of 2.5 micrometers or less; PM₁₀ = respirable particulate matter with an aerodynamic resistance diameter of 10 micrometers or less; SO_x = oxides of sulfur.

() denotes subtraction

No BAAQMD threshold for CO or SO_x

Impacts associated with toxic air contaminants (TACs), carbon monoxide hotspots, and odors would be the same as those under the proposed project for the same reasons as described in Section 4.1, *Air Quality*. Alternative 3 would be consistent with the Santa Clara Valley Transportation Authority Congestion Management Program, would not increase traffic volumes at affected intersections to more than 44,000 vehicles per hour, and would not increase traffic volumes at the affected intersections to more than 24,000 vehicles per hour where vertical and/or horizontal mixing is substantially limited. Alternative 3 would also be required to implement current BAAQMD *Basic Construction Mitigation Measures* during all phases of construction and would not introduce a new stationary source of toxic air contaminants (TACs) that would expose sensitive receptors to substantial TAC concentrations. These impacts would be less than significant under this alternative. Overall, air quality impacts would be less than significant but, due to the additional units, slightly more than that of the proposed project.

b. Cultural Resources and Tribal Cultural Resources

As described in Section 4.2, *Cultural Resources and Tribal Cultural Resources*, the building at 200 Portage Avenue is eligible for listing in the CRHR under Criterion 1 (Events) at the local level, while the building at 3040 Park Boulevard is not eligible for listing in the NRHP, CRHR, or as a City of Palo Alto Historic Structure. Similar to the proposed project, Alternative 3 would involve demolition of a portion of the building at 200 Portage Avenue and the building at 3040 Park Boulevard. The demolition and treatment of part of the building at 200 Portage Avenue would not be consistent with the Secretary's Standards since it would result in a loss of several of the property's character-defining features, and proposed alterations to the building would not be compatible with the building's historic character and would obscure historic materials that characterize the property. As with the proposed project, Alternative 3 would require implementation of mitigation measures CR-1 and CR-2. However, impacts would remain significant and unavoidable.

Like the proposed project, this alternative would involve ground-disturbance and could result in the discovery of archaeological resources, tribal cultural resources, or human remains. Mitigation measures CR-3 and CR-4 would therefore be required to reduce impacts to a less than significant level. Because Alternative 3 would require a Comprehensive Plan amendment, letters were sent to tribes, as identified by the Native American Heritage Commission, that may be traditionally or culturally affiliated with the geographic location of the project to comply with Senate Bill 18 requirements. These letters were sent on July 19, 2022. The City has not received a response from

any of the tribes. The letters sent in accordance with SB 18, in addition to the letters previously sent to the tribes in accordance with AB 52, are included in Appendix C. Overall, impacts to archeological resources, human remains, and tribal cultural resources impacts would be the same that of the proposed project and would be less than significant with mitigation incorporated.

c. Energy

As with air quality impacts, energy impacts related to demolition and construction activities under this alternative would be similar but slightly greater than impacts under the proposed project, since Alternative 3 would include renovation of the cannery building and would include construction of a new one level over grade garage for the R&D and retail uses. As discussed in *Transportation* below, Alternative 3 would result in an increase of three and four trips during the a.m. and p.m. peak hours, respectively when compared to the proposed project. This would represent a minimal increase in the usage of vehicle fuel. Therefore, impacts related to energy use under this alternative would be similar to impacts under the proposed project. This alternative would not result in the wasteful or inefficient use of energy for the same reasons as described for the proposed project. In addition, this alternative would be consistent with local goals and policies related to energy reduction. Overall, energy impacts would be less than significant and similar to those of the proposed project.

d. Greenhouse Gas Emissions

Alternative 3 would result in increased impacts related to GHG emissions during construction activities since it would include construction of 58 more units compared to the proposed project, a 2,600 square foot retail space, and a one level over grade garage for the R&D and retail space. Although Alternative 3 would include 58 more units compared to the project, it would only result in an increase of three and four trips during the a.m. and p.m. peak hours, respectively when compared to the proposed project. Therefore, impacts related to GHG emissions would be similar to but greater than those of the proposed project due to an overall incremental increase in vehicle trips. As shown in Table 6-8, Alternative 3 would result in total net annual emissions of 510 MT CO₂e, which would be below the interpolated BAAQMD threshold of 660. Overall, GHG impacts would be less than significant, same as the proposed project, but greater than those of the proposed project.

Table 6-8 Alternative 3 Combined Annual Emissions of Greenhouse Gases

Emission Source	Annual Emissions (MTCO ₂ e)
Alternative 3	
Alternative 3 Operational	
Area	2
Energy	17
Mobile	634
Solid Waste	36
Water	8
Total Emissions from Alternative 3	697
Existing Uses to be Removed	
Existing Operational	
Area	(<1)
Energy	(20)

Emission Source	Annual Emissions (MTCO ₂ e)
Mobile	(135)
Solid Waste	(30)
Water	(2)
Total Emissions from Existing Uses to be Removed	(187)
Total Emissions from Alternative 3 (Alternative 3 minus Existing Uses to be Removed)	510
Interpolated BAAQMD Threshold	660
Exceed Threshold?	No

Source: Table 2.2 in GHG CalEEMod annual worksheets, see Appendix I for calculations and for GHG emission factor assumptions.

() denotes subtraction

e. Hazards and Hazardous Materials

Similar to the proposed project, Alternative 3 would include demolition activities which could release LBP and ACM dust into the air and expose workers and nearby residents to health hazards. Alternative 3 would be required to comply with regulations within the PAMC, BAAQMD Regulation 11, Rule 2, and CCR Title 8 in order to reduce demolition impacts related to hazards to a less than significant level. Construction activities could also expose the public and environment to contaminated groundwater and soils since several areas of the project site are listed on hazardous materials sites as shown in Figure 4.5-1 of Section 4.5, *Hazards and Hazardous Materials*. Furthermore, known VOCs below the site could also contribute to vapor intrusion impacts during operation of the project. Therefore, mitigation measures HAZ-1 and HAZ-2 as well as the Vapor Intrusion Prevention Condition of Approval would be required in order to reduce impacts to the public and the environment from on-site contamination to a less than significant level.

For the same reasons as described for the proposed project, Alternative 3 would not create a significant hazard to the public or environment through the routine transport, use, or disposal of hazardous materials; would not 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; would not emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school; would not be located within an airport land use plan or within two miles of a public airport; would not impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan; and would not expose people or structures to loss, injury, or death involving wildland fires. Impacts would be less than significant. Overall, hazards and hazardous materials impacts would be less than significant but similar to that of the proposed project.

f. Land Use and Planning

Similar to the proposed project, Alternative 3 would include demolition of a portion of the building at 200 Portage Avenue as well as the building at 3040 Park Boulevard. A Comprehensive Plan amendment and rezoning would be required to allow for the existing non-conforming uses on the site to remain. Each of the resulting parcels would be rezoned to planned community or would otherwise remain as RM-30 zoning. With approval of the Comprehensive Plan Amendment and Rezoning applications, the remaining uses and buildings would conform to the Comprehensive Plan and Zoning Ordinance. Alternative 3 would also be consistent with the City's Comprehensive Plan

policies as well as the NVCAP vision and would add to the City's supply of multifamily housing in proximity to transit. Overall, land use and planning impacts would be less than significant and similar to those of the proposed project.

g. Noise

Under Alternative 3, construction-related noise and vibration would be roughly the same as construction-related impacts under the proposed project. Mitigation Measure N-1 would reduce vibration during construction to a less than significant level. Like the proposed project, operational noise would be consistent of general site activities, outdoor amenities, and HVAC systems. Like the proposed project, impacts associated with operational noise would be less than significant for the same reasons as described in Section 4.5, *Noise*. Since Alternative 3 would only result in an increase of three and four trips during the a.m. and p.m. peak hours, respectively, when compared to the proposed project, noise associated with vehicles traveling to and from the project site would not substantially increase. Overall, noise impacts would be less than significant and similar to those of the proposed project.

h. Transportation

Alternative 3 would involve construction and operation of more housing units compared to the proposed project as well as a 2,600 square foot retail space. According to the Local Transportation Analysis prepared for the project by W-Trans (W-Trans 2022), Alternative 3 would be expected to generate 43 net-new a.m. peak hour vehicle trips and 51 trips during the p.m. peak hour. This represents an increase of three and four trips during the a.m. and p.m. peak hours, respectively when compared to the proposed project. As described in Section 4.8, *Transportation*, a discussion of the alternative's effects on LOS for informational purposes is relevant to consistency with the City's Comprehensive Plan policies for the circulation system. Because it would result in a similar number of trips, this alternative would result in similar congestion at study intersections as the proposed project. Therefore, it is anticipated that LOS levels would be essentially the same as under the proposed project.

Each of the proposed uses within this alternative would meet the respective VMT screening criteria adopted by Council and the parking would meet the City's requirements. Therefore, this Alternative would meet the City's screening criteria for having a less than significant impact related to VMT. Nevertheless, for comparison purposes, a VMT analysis was completed. According to the Local Transportation Analysis prepared by W-Trans, Alternative 3 would have a projected VMT rate of 4.89 miles per capita for the proposed housing, well below the countywide household VMT significance threshold of 11.33 miles. Additionally, Alternative 3, along with inclusion of a required Transportation Demand Management (TDM) program pursuant to the Development Agreement between the City and the project applicant, would result in a projected VMT rate of 13.23 for the commercial uses, which would be below the countywide employment VMT significance threshold of 14.14. Therefore, the residential portion of this alternative would have a less than significant impact on VMT; the retail portion would have a less than significant impact on VMT since it would be less than 10,000 square feet and would be considered as a local-serving land use; and the employment aspect would be less than significant with implementation of appropriate TDM measures.

Similar to the proposed project, this alternative would not conflict with a program, plan, ordinance or policy addressing transit or pedestrian facilities for the same reasons described in Section 4.8, *Transportation*. However, where the proposed project resulted in a potentially significant impact on bicycle facilities due to conflicts with the City's Bicycle & Pedestrian Transportation Plan, Alternative

3 would include a provision dedicating land to the City and a public easement for ingress/egress across the identified area for an enhanced bikeway, which would be consistent with the City and County's adopted plans. Therefore, Mitigation Measure T-1 would not be required and the project alternative would have a less than significant impact with respect to a conflict with an adopted transportation plan. Overall, transportation impacts would be less than significant but less than that of the proposed project.

i. Impact Areas Addressed in Section 4.9, Effects Found Not to be Significant

As with the proposed project, Alternative 3 would be consistent with SB 743 since it would be located approximately 0.4 miles southeast of the California Avenue Train Station located at 101 California Avenue, and therefore satisfies the definition of a transit priority area since the project site would be within 0.5 mile of a major transit stop. Because Alternative 3 would result in residential use on an infill site within a transit priority area, aesthetics impacts may not be considered significant impacts on the environment. Additionally, there would be no impacts related to agriculture and forestry resources or mineral resources. Under this alternative, 149 new housing units would be developed, which could generate population growth. In addition, the new R&D converted space and 2,600 retail space would provide new employment opportunities, which could also indirectly generate population growth. Using the estimated persons per household number of 2.45 (DOF 2021), the project would generate approximately 365 new residents, which would increase the city population to 68,022. As discussed in Section 4.9.7, *Effects Found Not to be Significant – Population and Housing*, ABAG estimates that the city's population will increase to 86,510 by 2040, an increase of 18,853 residents. The population increase associated with the project would therefore be within the population forecast for the city. ABAG projections also estimate that the number of housing units in the city will be 32,940 by 2040. Alternative 3 would increase the number of housing units in the city from 29,406 to 29,555, which would be within ABAG's projections. As discussed in Section 4.9.7, *Effects Found Not to be Significant – Utilities and Service Systems*, the demand for water and generation of wastewater, stormwater, and solid waste would constitute a small percentage of the existing capacity of water, wastewater, stormwater, and solid waste infrastructure. Although Alternative 3 would increase the number of residential units on site, existing utility infrastructure and the Kirby Canyon Landfill would still have sufficient capacity to serve this alternative. Impacts related to biological resources, geology and soils, hydrology and water quality, public services, recreation, and wildfire would also have similar but slightly greater impacts as the proposed project due to an increase in the number of residential units. However, impacts would remain less than significant.

6.4 Environmentally Superior Alternative

Table 6-9 indicates whether each alternative's environmental impact is greater than, less than, or equivalent to that of the proposed project for each of the issue areas studied. Based on the alternatives analysis provided above, Alternative 1 (No Project) would be the environmentally superior alternative. However, Alternative 1 would not achieve the basic project objectives as stated in at the beginning of this section. This alternative does not involve housing development in the near term to help the City meet its housing supply and affordability goals and would not contribute towards the concept of a "complete neighborhood" consistent with the NVCAP.

Under Alternative 2 (Adaptive Reuse of Eligible Historic Resource for Housing), the CRHR-eligible building at 200 Portage would not be demolished. However, because no development plans are

available and it's unclear whether proposed development would comply with the secretary of the interior's standards for rehabilitation, this analysis conservatively assumes that impacts related to cultural resources would remain significant and unavoidable. But it is assumed to be less impactful than the proposed project because demolition of a portion of the building would not occur. Because this alternative would result in fewer vehicle trips than the proposed project, associated impacts including air quality, energy, GHG emissions, and traffic noise would be reduced compared to the proposed project and would remain less than significant, the same as the proposed project. Alternative 2 would meet most of the objectives for the 200 Portage Avenue project. However, as with the proposed project, Alternative 2 may conflict with the City's Bicycle and Pedestrian Transportation Plan since an enhanced bikeway traversing the site is not included as part of the project description or site plans. Implementation of Mitigation Measure T-1 would still be required to reduce impacts to a less than significant level.

Under Alternative 3 (Development Agreement), a portion of the CRHR-eligible building at 200 Portage would still be demolished and the unavoidably significant impact related to cultural resources would occur. Alternative 3 would meet all the objectives of the 200 Portage Avenue project. Although it would increase the number of housing units from 91 to 149, and accordingly would result in increased air quality, energy, noise and GHG emissions, the net new total emissions for air quality and GHG would still be below BAAQMD thresholds, and impacts related to air quality, energy, GHG emissions, and noise would be less than significant. Additionally, Alternative 3 would include a provision dedicating land to the City and a public easement for ingress/egress across the identified area for an enhanced bikeway. Because this would be documented in the Development Agreement and is therefore part of the proposed project, Mitigation Measure T-1 would no longer be required and impacts on transportation would be less than significant without mitigation.

Although none of the Alternatives (other than the No Project Alternative) would reduce the significant and unavoidable impact on a historic resource to a less than significant level, because Alternative 2 would slightly reduce impacts related to air quality, energy, GHG emissions, and traffic noise, and transportation in comparison to proposed project and Alternative 3, Alternative 2 would be considered the Environmentally Superior Alternative.

Table 6-9 Impact Comparison of Alternatives

Issue	Proposed Project Impact Classification	Alternative 1 No Project	Alternative 2 Adaptive Reuse	Alternative 3 Development Agreement
Air Quality	Less than Significant with Mitigation Incorporated	+	=/+	=
Cultural Resources/ Tribal Cultural Resources	Significant and Unavoidable	+	=	=
Energy	Less than Significant	+	=/+	=
Greenhouse Gas Emissions	Less than Significant	+	=/+	=
Hazards and Hazardous Materials	Less than Significant with Mitigation Incorporated	+	=	=
Land Use and Planning	Less than Significant	-	=	=
Noise	Less than Significant with Mitigation Incorporated	+	=/+	=
Transportation	Less than Significant with Mitigation Incorporated	+	=/+	+
+ Superior to the proposed project (reduced level of impact)				
- Inferior to the proposed project (increased level of impact)				
= Similar level of impact to the proposed project				

7 References

7.1 Bibliography

Section 1, Introduction

No references for this section.

Section 2, Project Description

Palo Alto, City of. 2017. City of Palo Alto 2030 Comprehensive Plan.
https://www.cityofpaloalto.org/files/assets/public/planning-amp-development-services/3.-comprehensive-plan/comprehensive-plan/full-comp-plan-2030_with-june21-amendments.pdf

Section 3, Environmental Setting

Palo Alto, City of. 2022. City of Palo Alto Building Eye. <https://paloalto.buildingeye.com/planning>.

Section 4.1, Air Quality

Association of Bay Area Governments (ABAG) and Metropolitan Transportation Commission (MTC). 2021. Plan Bay Area 2050.
https://www.planbayarea.org/sites/default/files/documents/Plan_Bay_Area_2050_October_2021_rev.pdf (Accessed February 2022)

BAAQMD. 2017a. Air Quality Standards and Attainment Status. <https://www.baaqmd.gov/about-air-quality/research-and-data/air-quality-standards-and-attainment-status> (Accessed February 2022)

_____. 2017b. Final 2017 Clean Air Plan. Spare the Air Cool the Climate: A Blueprint for Clean Air and Climate Protection. Available at: http://www.baaqmd.gov/~media/files/planning-and-research/plans/2017-clean-air-plan/attachment-a_-proposed-final-cap-vol-1-pdf.pdf?la=en (Accessed February 2022)

_____. 2017c. BAAQMD CEQA Guidelines. https://www.baaqmd.gov/~media/files/planning-and-research/ceqa/ceqa_guidelines_may2017-pdf.pdf?la=en (Accessed February 2022)

California Air Resources Board (CARB). 2021. Overview: Diesel Exhaust & Health.
<https://ww2.arb.ca.gov/resources/overview-diesel-exhaust-and-health> (Accessed February 2022)

_____. 2022. Top 4 Summary. <https://arb.ca.gov/adam/topfour/topfour1.php> (Accessed January 2022)

Palo Alto, City of. 2017. City of Palo Alto Comprehensive Plan 2030.
https://www.cityofpaloalto.org/files/assets/public/planning-amp-development-services/3.-comprehensive-plan/comprehensive-plan/full-comp-plan-2030_with-june21-amendments.pdf (Accessed July 2021)

Western Regional Climate Center. 2020. Palo Alto, California (046646), Period of Record Monthly Climate Summary. Available at: <https://wrcc.dri.edu/cgi-bin/cliMAIN.pl?capalo+sfo> (Accessed February 2022)

Section 4.2, Cultural Resources

California Office of Historic Preservation. 1995. Instructions for Recording Historical Resources.

Cartier, Robert. 1987. Cultural Resource Evaluation of the Matadero Creek Flood Control Project in the City of Palo Alto, County of Santa Clara, prepared for Santa Clara Valley Water District.

Corbett, Michael, and Denise Bradley. 2001. Final Survey Report, Palo Alto Historical Survey Update, August 1997 - August 2000, prepared for City of Palo Alto.

Jurich, Denise, and Amber Grady. 2011. California High-Speed Train Project, Environmental Impact Report/Environmental Impact Statement, San Francisco to San Jose Section, Archaeological Survey Report, Technical Report [Draft], prepared for California High Speed Rail Authority and U.S. Department of Transportation Federal Railroad Administration.

KTGY Architecture and Planning. 2021. 200 Portage Avenue Townhomes.

Nationwide Environmental Title Research, LLC. 2022. Various Historic Aerials and Topographic Maps. Accessed February 17, 2022, through <https://www.historicaerials.com/>.

National Park Service (NPS). Archaeology and Historic Preservation: Secretary of the Interior's Standards and Guidelines. Accessed February 2022, through http://www.nps.gov/history/local-law/Arch_Standards.htm.

Page & Turnbull. 2019a. Historic Resource Evaluation for 340 Portage Avenue. Prepared for the City of Palo Alto.

_____. 2019. Memo: NVCAP Windshield Survey and Preliminary Historic Resource Eligibility Analysis. Prepared for the City of Palo Alto.

City of Palo Alto. 2016. Comprehensive Plan Update Environmental Impact Report for the City of Palo Alto Volume 1: Draft EIR. SCH # 2014052101

Santa Clara County. 2022. "Historic Preservation," Santa Clara County website. Electronic document accessed February 17, 2022. <https://plandev.sccgov.org/policies-programs/historic-preservation>.

The Sobrato Organization. 2021. 200 Portage Avenue, Palo Alto, CA 94306. Design Presentation.

Sikes, Nancy, Cindy Arrington, Bryon Bass, Chris Corey, Kevin Hunt, Steve O'Neil, Catherine Pruett, Tony Sawyer, Michael Tuma, Leslie Wagner, and Alex Wesson. 2006. Cultural Resources Final Report of Monitoring and Findings for the Qwest Network Construction Project, State of California, prepared for Qwest Communications.

United States Geological Survey. 2022. Various Historical Topographic Maps. Accessed February 18, 2022, through <https://ngmdb.usgs.gov/topoview/viewer/#14/37.4141/-122.1420>.

WRA Environmental Consultants. 2020. Matadero Creek Renaturalization: Conceptual Alternative Analysis. Prepared for the City of Palo Alto.

Section 4.3, Energy

Bureau of Transportation Statistics. 2021. Light Duty Vehicle, Short Wheel Base and Motorcycle Fuel Consumption and Travel. <https://www.bts.gov/content/light-duty-vehicle-short-wheel-base-and-motorcycle-fuel-consumption-and-travel> (Accessed February 2022)

California Energy Commission (CEC). 2018a. News Release: Energy Commission Adopts Standards Requiring Solar System for New Homes, First in Nation. May 2018. <https://www.energy.ca.gov/news/2018-05/energy-commission-adopts-standards-requiring-solar-systems-new-homes-first> (accessed September 2021).

. 2018b. 2019 Building Energy Efficiency Standards. March 2018. https://www.energy.ca.gov/sites/default/files/2020-03/Title_24_2019_Building_Standards_FAQ_ada.pdf

_____. 2021a. Total System Electric Generation. <https://www.energy.ca.gov/data-reports/energy-almanac/california-electricity-data/2020-total-system-electric-generation> (accessed December 2021).

_____. 2021b. "Supply and Demand of Natural Gas in California." <https://www.energy.ca.gov/data-reports/energy-almanac/californias-natural-gas-market/supply-and-demand-natural-gas-california> (accessed December 2021).

_____. 2021c. Integrated Energy Policy Report. <https://www.energy.ca.gov/data-reports/reports/integrated-energy-policy-report/2021-integrated-energy-policy-report> (accessed December 2021).

_____. 2021d. Electricity Consumption by Entity. <https://ecdms.energy.ca.gov/elecbyutil.aspx> (Accessed January 2022)

_____. 2021e. Natural Gas Consumption by Entity. <https://ecdms.energy.ca.gov/gasbycounty.aspx> (Accessed January 2022)

_____. 2021f. Diesel Fuel Data, Facts, and Statistics. <https://www.energy.ca.gov/data-reports/energy-almanac/transportation-energy/diesel-fuel-data-facts-and-statistics> (Accessed January 2022)

_____. 2021g. California Retail Fuel Outlet Annual Reporting (CEC-A15_ Results. <https://www.energy.ca.gov/data-reports/energy-almanac/transportation-energy/california-retail-fuel-outlet-annual-reporting> (Accessed January 2022)

_____. 2022a. Hydrogen Refueling Stations in California. <https://www.energy.ca.gov/data-reports/energy-insights/zero-emission-vehicle-and-infrastructure-statistics/hydrogen-refueling> (Accessed January 2022)

_____. 2022b. 2022 Building Energy Efficiency Standards. N.d. <https://www.energy.ca.gov/programs-and-topics/programs/building-energy-efficiency-standards/2022-building-energy-efficiency> (accessed February 2022)

California Gas and Electric Utilities (CGEU). 2020. 2020 California Gas Report. https://www.socalgas.com/sites/default/files/2020-10/2020_California_Gas_Report_Joint_Utility_Biennial_Comprehensive_Filing.pdf

- City of Palo Alto Utilities (CPAU). 2021a. Carbon Neutral Electricity and Natural Gas.
<https://www.cityofpaloalto.org/Departments/Utilities/Sustainability/Carbon-Neutral-Electricity-and-Natural-Gas> (Accessed July 2021)
- _____. 2021b. Utilities at a Glance.
<https://www.cityofpaloalto.org/Departments/Utilities/Customer-Service/Utilities-at-a-Glance> (Accessed January 2022)
- Palo Alto, City of. 2019. City of Palo Alto Green Building Program.
https://www.transformgov.org/sites/transformgov.org/files/Palo%20Alto%20CPA%20Green%20Building%20Flyer%20%28front%20%20back%29%20for%20TLG_v3.pdf (Accessed July 2021)
- _____. 2020. 2019 Energy Reach Code.
https://www.cityofpaloalto.org/files/assets/public/development-services/green-building-files/2020-external-residential-all-electric-mandate-faq_final03.31.2020.pdf?t=58481.15
- _____. 2021. 2021 Sustainability and Climate Action Plan Draft Goals and Key Actions.
<https://www.cityofpaloalto.org/files/assets/public/sustainability/policies-and-plans/2021-scap-goals-and-key-actions-draft.pdf>
- Plugshare. 2021. EV Charging Stations in Palo Alto.
<https://www.plugshare.com/directory/us/california/palo-alto> (Accessed February 2022)
- U.S. Department of Energy (DOE). 2021. Biodiesel Fueling Station Locations. Available at:
https://afdc.energy.gov/fuels/biodiesel_locations.html#/find/nearest?fuel=BD&location=palo%20alto (Accessed February 2022)
- U.S. Energy Information Administration (USEIA). 2021a. California State Profile and Energy Estimates. <https://www.eia.gov/state/?sid=CA#tabs-1> (Accessed February 2022)
- _____. 2021b. California Profile Analysis. <https://www.eia.gov/state/analysis.php?sid=CA> (Accessed February 2022)
- _____. 2021c. 2021 Integrated Energy Policy Report.
<https://www.energy.ca.gov/publications/2021/2021-integrated-energy-policy-report>. (Accessed February 2022)
- U.S. Environmental Protection Agency (U.S. EPA). 2018. *Exhaust and Crankcase Emission Factors for Nonroad Compression-Ignition Engines in MOVES2014b*. July 2018. Available at:
<https://nepis.epa.gov/Exe/ZyPDF.cgi?Dockkey=P100UXEN.pdf> (Accessed February 2022)

Section 4.5, Greenhouse Gases

- Association of Bay Area Governments (ABAG)/Metropolitan Transportation Commission (MTC). 2021. Plan Bay Area 2050. October.
https://www.planbayarea.org/sites/default/files/documents/Plan_Bay_Area_2050_October_2021.pdf
- California Air Resources Board (CARB). 2008. Climate Change Scoping Plan. December.
https://ww2.arb.ca.gov/sites/default/files/classic/cc/scopingplan/document/adopted_scoping_plan.pdf

- _____. 2011. Staff Report: Initial Statement of Reasons for Proposed Rulemaking, Public Hearing to Consider the “LEV III” Amendments to the California Greenhouse Gas and Criteria Pollutant Exhaust and Evaporative Emission Standards and Test Procedures and to the On-Board Diagnostic System Requirements for Passenger Cars, Light-Duty Trucks, and Medium-Duty Vehicles, and to the Evaporative Emission Requirements for Heavy-Duty Vehicles. December 7, 2011. <http://www.arb.ca.gov/regact/2012/leviiighg2012/levisor.pdf>
- _____. 2014. AB 32 Scoping Plan Website. Updated June 2014. <http://www.arb.ca.gov/cc/scopingplan/scopingplan.htm>
- _____. 2017. California’s 2017 Climate Change Scoping Plan. December 14, 2017. https://www.arb.ca.gov/cc/scopingplan/scoping_plan_2017.pdf
- _____. 2020. EMFAC Off-Model Adjustment Factors for Carbon Dioxide (CO₂) Emissions to Account for the SAFE Vehicles Rule Part One and the Final SAFE Rule. June 26, 2020. https://ww3.arb.ca.gov/msei/emfac_off_model_co2_adjustment_factors_06262020-final.pdf?utm_medium=email&utm_source=govdelivery
- _____. 2021. California Greenhouse Gas Emissions for 2000 to 2019 Trends of Emissions and Other Indicators. July. https://ww3.arb.ca.gov/cc/inventory/pubs/reports/2000_2019/ghg_inventory_trends_00-19.pdf
- California Climate Action Registry (CCAR) General Reporting Protocol. 2009. Reporting Entity-Wide Greenhouse Gas Emissions, Version 3.1.
- California Climate Change Center (CCCC). 2006. Climate Scenarios for California.
- California Department of Food and Agriculture. 2020. “California Agricultural Production Statistics.” <https://www.cdffa.ca.gov/statistics/>
- California Department of Water Resources. 2018. Indicators of Climate Change in California. May 2018. <https://oehha.ca.gov/media/downloads/climate-change/report/2018caindicatorsreportmay2018.pdf>
- California Natural Resources Agency. 2009. 2009 California Climate Adaptation Strategy. March 2009. http://resources.ca.gov/docs/climate/Statewide_Adaptation_Strategy.pdf
- California Air Resources Board (CARB). 2017. California’s 2017 Climate Change Scoping Plan. December 14, 2017. https://www.arb.ca.gov/cc/scopingplan/scoping_plan_2017.pdf (Accessed February 2022)
- City of Palo Alto Utilities. 2021. Carbon Neutral Electricity. <https://www.cityofpaloalto.org/Departments/Utilities/Sustainability/Carbon-Neutral-Electricity-and-Natural-Gas/FAQs>
- IPCC. 2021. Climate Change 2021: The Physical Science Basis. Contribution of Working Group I to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change [Masson-Delmotte, V., P. Zhai, A. Pirani, S. L. Connors, C. Péan, S. Berger, N. Caud, Y. Chen, L. Goldfarb, M. I. Gomis, M. Huang, K. Leitzell, E. Lonnoy, J.B.R. Matthews, T. K. Maycock, T. Waterfield, O. Yelekçi, R. Yu and B. Zhou (eds.)] Cambridge University Press. https://www.ipcc.ch/report/ar6/wg1/downloads/report/IPCC_AR6_WGI_Full_Report.pdf
- National Aeronautics and Space Administration. 2020. “Global Climate Change – Vital Signs of the Planet – Sea Level.” <https://climate.nasa.gov/vital-signs/sea-level/>

- National Oceanic and Atmospheric Administration. 2020. "Global Climate Report for Annual 2019." State of the Climate. January 2020. <https://www.ncdc.noaa.gov/sotc/global/201813>
- Palo Alto, City of. 2017. City of Palo Alto 2030 Comprehensive Plan. https://www.cityofpaloalto.org/files/assets/public/planning-amp-development-services/3.-comprehensive-plan/comprehensive-plan/full-comp-plan-2030_with-june21-amendments.pdf
- _____. 2021a. Climate/Sustainability and Climate Action Plan Staff Report. <https://www.cityofpaloalto.org/files/assets/public/agendas-minutes-reports/reports/city-manager-reports-cmrs/2021/id-12009.pdf>
- _____. 2021b. Sustainability and Climate Action Plan (S/CAP). <https://www.cityofpaloalto.org/City-Hall/Sustainability/SCAP>
- _____. 2021c. 2021 Sustainability and Climate Action Plan. <https://www.cityofpaloalto.org/files/assets/public/sustainability/policies-and-plans/2021-scap-goals-and-key-actions-draft.pdf>
- Parmesan, C. August 2006. Ecological and Evolutionary Responses to Recent Climate Change
- State of California. 2018. California's Fourth Climate Change Assessment Statewide Summary Report. August 27, 2018. <http://www.climateassessment.ca.gov/state/>
- U.S. EPA. 2021a. Climate Change Indicators: Atmospheric Concentrations of Greenhouse Gases. Last updated April 2021. <https://www.epa.gov/climate-indicators/climate-change-indicators-atmospheric-concentrations-greenhouse-gases> (Accessed February 2022)
- _____. 2021b. Climate Change Indicators: Global Greenhouse Gas Emissions. Last updated April 2021. <https://www.epa.gov/climate-indicators/climate-change-indicators-global-greenhouse-gas-emissions> (Accessed February 2022)
- _____. 2021c. Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990-2019. April 2021. <https://www.epa.gov/ghgemissions/inventory-us-greenhouse-gas-emissions-and-sinks-1990-2019> (Accessed February 2022)

Section 4.5, Hazards and Hazardous Materials

- California Department of Conservation (DOC). 2022. WellFinder online mapping tool. <https://www.conservation.ca.gov/calgem/Pages/Wellfinder.aspx>. Accessed February 2022.
- California Department of Resources Recycling and Recovery (CalRecycle). 2022. Solid Waste Inventory System Facility Search online web tool. Available at <https://www2.calrecycle.ca.gov/SolidWaste/Site/Search>. Accessed February 2022.
- California State Water Resources Control Board (SWRCB). 2022. PFAS Map online mapping tool. Available online at https://geotracker.waterboards.ca.gov/map/pfas_map. Accessed February 2021.
- Palo Alto, City of. 2017. City of Palo Alto Annex to the Countywide Local Hazards Mitigation Plan. https://www.cityofpaloalto.org/files/assets/public/oes/lhmap/paloalto_separateannex_march2017.pdf. Accessed February 2022.
- _____. 2016. Emergency Operations Plan, Basic Plan. Available at https://www.cityofpaloalto.org/files/assets/public/oes/plans/city_of_palo_alto_eop.pdf. Accessed February 2022.

- Palo Alto Fire Department (PAFD) 2022a. Online web portal.
http://www.unidocs.org/members/Palo_Alto_Fire.html. Accessed February 2022.
- _____. 2022b. Ready, set, GO! Online tool.
<https://www.cityofpaloalto.org/Departments/Fire/Prepare-For-Wildfire-READY-SET-GO>.
 Accessed February 2022.
- PES Environmental, Inc. 2020. Phase I Environmental Site Assessment. November 17, 2020.
- _____. 2021. Soil Vapor Investigation Report. February 8, 2021.
- United States Department of Transportation, Pipeline and Hazardous Materials Safety Administration (PHMSA) 2022. National Pipeline Mapping System (NPMS) online mapping tool. Available at <https://portal.phmsa.dot.gov/analytics/>. Accessed February 2022.

Section 4.6, Land Use and Planning

- Palo Alto, City of. 2017. City of Palo Alto 2030 Comprehensive Plan.
https://www.cityofpaloalto.org/files/assets/public/planning-amp-development-services/3.-comprehensive-plan/comprehensive-plan/full-comp-plan-2030_with-june21-amendments.pdf
- _____. 2021. North Ventura Coordinated Area Plan. <https://www.paloaltonvcap.org/about>

Section 4.7, Noise

- California Department of Transportation (Caltrans). 2013. Technical Noise Supplement to the Traffic Noise Analysis Protocol. (CT-HWANP-RT-13-069.25.2) September.
http://www.dot.ca.gov/hq/env/noise/pub/TeNS_Sept_2013B.pdf (accessed March 2022).
- _____. 2020. Transportation and Construction Vibration Guidance Manual (CT-HWANP-RT-20-365.01.01). April. <https://dot.ca.gov/-/media/dot-media/programs/environmental-analysis/documents/env/tcvgm-apr2020-a11y.pdf> (accessed March 2022).
- Federal Highway Administration (FHWA). 2006. *FHWA Highway Construction Noise Handbook*. (FHWAHEP-06-015; DOT-VNTSC-FHWA-06-02). Available at:
https://www.fhwa.dot.gov/environment/noise/construction_noise/handbook/.
- _____. 2011. Highway Traffic Noise Analysis and Abatement Policy and Guidance. (FHWA-HEP-10-025). December
- Federal Transit Administration (FTA). 2018. Transit Noise and Vibration Impact Assessment Manual. https://www.transit.dot.gov/sites/fta.dot.gov/files/docs/research-innovation/118131/transit-noise-and-vibration-impact-assessment-manual-fta-report-no-0123_0.pdf (accessed March 2022).
- Palo Alto, City of. 2017. City of Palo Alto Comprehensive Plan 2030.
<https://www.cityofpaloalto.org/civicax/filebank/documents/62915>
- _____. 2020. Municipal Code.
[http://library.amlegal.com/nxt/gateway.dll/California/paloalto_ca/paloaltomunicipalcode?f=templates\\$fn=default.htm\\$3.0\\$vid=amlegal:paloalto_ca](http://library.amlegal.com/nxt/gateway.dll/California/paloalto_ca/paloaltomunicipalcode?f=templates$fn=default.htm$3.0$vid=amlegal:paloalto_ca)
- Santa County Airport Land Use Commission. 2008. Comprehensive Land Use Plan - Palo Alto Airport.
https://stgenpln.blob.core.windows.net/document/ALUC_PAO_CLUP.pdf (accessed March 2022).

W-Trans. 2022. Draft Local Transportation Analysis for the 200 Portage Avenue Project. February 2022.

Section 4.8, Transportation

Palo Alto, City of. 2016. Comprehensive Plan Update Draft Environmental Impact Report SCH#2014052101. https://www.cityofpaloalto.org/files/assets/public/planning-and-development-services/3.-comprehensive-plan/comprehensive-plan/paloaltocompplandeir_vol1_web-1.pdf

_____. 2017. 2018-2020 Sustainability Implementation Plan. <https://www.cityofpaloalto.org/files/assets/public/sustainability/policies-and-plans/2018-2020-sustainability-implementation-plan-with-council-amendments.pdf>

_____. 2020. Adoption of a Resolution Updating the City's Transportation Analysis Methodology Under CEQA to Comply with California Senate Bill 743 and Adoption of a Local Transportation Impact Analysis Policy to Evaluate Level of Service and Other Local Roadway Impacts. <https://www.cityofpaloalto.org/files/assets/public/agendas-minutes-reports/reports/city-manager-reports-cmrs/year-archive/2020/id-11256-senate-bill-743-implementation.pdf>

_____. 2021. Sustainability and Climate Action Plan. <https://www.cityofpaloalto.org/City-Hall/Sustainability/SCAP>

Santa Clara County Parks. 1995. Santa Clara County Countywide Trails Master Plan Update. Adopted November 14, 1995. https://parks.sccgov.org/sites/g/files/exjcpb961/files/documents/Countywide_Trails_Master_Plan%20SEARCHABLEOCR.pdf

_____. 2022. Countywide Trails. <https://parks.sccgov.org/about-parks/plans-projects/countywide-trails>

Section 4.9, Effects Found Not to be Significant

Association of Bay Area Governments (ABAG) and Metropolitan Transportation Commission (MTC). 2019. MTC/ABAG Hazard Viewer Map. <https://mtc.maps.arcgis.com/apps/webappviewer/index.html?id=4a6f3f1259df42eab29b35dfcd086fc8> (Accessed July 2021)

California Department of Conservation (DOC). N.d. California Important Farmland Finder. <https://maps.conservation.ca.gov/DLRP/CIFF/> (Accessed July 2021)

_____. 2002. California Geomorphic Provinces. <https://www.conservation.ca.gov/cgs/Documents/Publications/CGS-Notes/CGS-Note-36.pdf> (Accessed July 2021)

_____. 2009. California Tsunami Maps and Data. <https://www.conservation.ca.gov/cgs/tsunami/maps> (Accessed July 2021)

_____. 2021a. Earthquake Zones of Required Investigation Map. <https://maps.conservation.ca.gov/cgs/EQZApp/app/>

_____. 2021b. Santa Clara County Tsunami Hazard Areas. <https://www.conservation.ca.gov/cgs/tsunami/maps/santa-clara>

- CalFire. 2007. Santa Clara County Fire Hazard Severity Zones In SRA.
https://osfm.fire.ca.gov/media/6766/fhszs_map43.pdf (Accessed July 2021)
- California Office of Environmental Health Hazard Assessment. 2019. OEHHA Acute, 8-hour and Chronic Reference Exposure Level (REL) Summary. Available at:
<https://oehha.ca.gov/air/general-info/oehha-acute-8-hour-and-chronic-reference-exposure-level-rel-summary>
- CalRecycle. 2019. SWIS Facility/Site Activity Details Kirby Canyon Recycling & Disposal Facility.
<https://www2.calrecycle.ca.gov/SolidWaste/SiteActivity/Details/1370?siteID=3393>
 (Accessed July 2021)
- Caltrans. 2018. California Scenic Highway System Map.
<https://caltrans.maps.arcgis.com/apps/webappviewer/index.html?id=465dfd3d807c46cc8e8057116f1aaca> (Accessed July 2021)
- California Water Boards San Francisco Bay. 2017. Chapter 3: Water Quality Objectives.
https://www.waterboards.ca.gov/sanfranciscobay/water_issues/programs/planningtmdls/basinplan/web/bp_ch3.html (Accessed July 2021)
- City of Palo Alto Office of Emergency Services. 2021. Local Hazard Mitigation Plan.
<https://www.cityofpaloalto.org/Departments/Emergency-Services/Plans-and-Information/Local-Hazard-Mitigation-Plan> (Accessed July 2021)
- Department of Finance. 2021. E-5 Population and Housing Estimates for Cities, Counties, and the State, 2011-2021 with 2010 Census Benchmark.
<https://www.dof.ca.gov/Forecasting/Demographics/Estimates/e-5/> (Accessed July 2021)
- Los Angeles, City of. 2006. L.A. CEQA Thresholds Guide.
<https://planning.lacity.org/eir/CrossroadsHwd/deir/files/references/A07.pdf>
- Office of Emergency Services. 2017. Santa Clara County Operational Area Hazard Mitigation Plan.
<https://emergencymanagement.sccgov.org/sites/g/files/exjcpb261/files/For%20Partners/Local-Hazard-Mitigation-Plan-LHMP-Vol-1.pdf> (Accessed July 2021)
- Palo Alto, City of. 2014. 2015-2023 Housing Element City of Palo Alto.
https://www.cityofpaloalto.org/files/assets/public/planning-amp-development-services/housing-element/housingelement_2015_2023/complete-public-hearing-draft-09-17-14.pdf (Accessed July 2021)
- _____. 2016. Comprehensive Plan Update Draft Environmental Impact Report SCH #2014052101.
https://www.cityofpaloalto.org/files/assets/public/planning-amp-development-services/3.-comprehensive-plan/comprehensive-plan/paloaltocomplandeir_vol1_web-1.pdf
- _____. 2017a. 2030 Comprehensive Plan.
https://www.cityofpaloalto.org/files/assets/public/planning-amp-development-services/3.-comprehensive-plan/comprehensive-plan/full-comp-plan-2030_with-june21-amendments.pdf
- _____. 2017b. Comprehensive Plan Update Supplement to the Draft EIR SCH #2014052101.
https://www.cityofpaloalto.org/files/assets/public/planning-amp-development-services/3.-comprehensive-plan/comprehensive-plan/paloalto_compplanupdate_suppeir_feb2017.pdf

- _____. 2017c. City of Palo Alto Parks, Trails, Natural Open Space & Recreation Master Plan. <https://www.cityofpaloalto.org/files/assets/public/community-services/parks-and-open-space/palo-alto-parks-master-plan.pdf> (Accessed July 2021)
- _____. 2018. Palo Alto Zero Waste Plan. <https://www.cityofpaloalto.org/files/assets/public/zero-waste/zero-waste-website-files/2018-zero-waste-plan.pdf> (Accessed July 2021)
- _____. 2020a. Matadero Creek Renaturalization. <https://www.cityofpaloalto.org/files/assets/public/planning-amp-development-services/north-ventura-cap/matadero-creek-study-report.pdf?t=68527.88> (Accessed March 2022)
- _____. 2020b. Regulations for Groundwater Dewatering during Construction of Below Ground Structures. <https://www.cityofpaloalto.org/files/assets/public/public-works/engineering-services/webpages/forms-and-permits/regulations-for-groundwater-dewatering-during-construction-of-below-ground-structures-2021.pdf> (Accessed July 2021)
- _____. 2021a. Peers Park. <https://www.cityofpaloalto.org/Departments/Community-Services/Open-Space-and-Parks-Home/Neighborhood-Parks/Peers-Park> (Accessed July 2021)
- _____. 2021b. Urban Water Management Plan and Water Shortage Contingency Plan 2020. https://www.cityofpaloalto.org/files/assets/public/utilities/uwmp/2020-uwmp_final-submission-to-dwr.pdf (Accessed July 2021)
- Palo Alto City Library. 2017. City of Palo Alto Performance Report. <https://www.cityofpaloalto.org/files/assets/public/city-auditor/performance-reports-and-national-citizen-surveys/fy-2017-performance-report.pdf> (Accessed July 2021)
- Palo Alto Municipal Code. 2021. Chapter 18.13 Multiple Family Residential Districts. https://codelibrary.amlegal.com/codes/paloalto/latest/paloalto_ca/0-0-0-33721#JD_Chapter18.13 (Accessed July 2021)
- Pampeyan, E.H. 1993. Geologic map of the Palo Alto and part of the Redwood Point 7.5-minute quadrangles, San Mateo and Santa Clara Counties, California. United States Geological Survey, Miscellaneous Investigations Series Map I-2371, scale 1:24,000.
- Santa Clara, County of. 2016. Santa Clara Valley Urban Runoff Pollution Prevention Program C.3 Stormwater Handbook. https://cleanwater.sccgov.org/sites/g/files/exjcpb461/files/SCVURPPP_C.pdf
- Society of Vertebrate Paleontology. 2010. Standard Procedures for the Assessment and Mitigation of Adverse Impacts to Paleontological Resources. Society of Vertebrate Paleontology Impact Mitigation Guidelines Revision Committee.
- Topographic Map. N.d. Palo Alto. <https://en-us.topographic-map.com/maps/0e4/Palo-Alto/> (Accessed July 2021)
- U.S. Environmental Protection Agency (U.S. EPA). 2013. Policy Assessment for the Review of the Lead National Ambient Air Quality Standards, External Review Draft. https://www3.epa.gov/ttn/naaqs/stan2000dards/pb/data/010913_pb-draft-pa.pdf (accessed August 2021)
- U.S. Fish and Wildlife Service. 2022a. National Wetlands Inventory. <http://www.fws.gov/wetlands/Data/Mapper.html>.

- _____. 2022b. Critical Habitat Portal. <https://ecos.fws.gov/ecp/report/table/critical-habitat.html>
- USGS. N.d. Earthquake Glossary. <https://earthquake.usgs.gov/learn/glossary/?term=active%20fault>
(Accessed July 2021)
- Waste Management. 2022. Kirby Canyon Landfill. <https://kirbycanyon.wm.com/about-us/index.jsp#:~:text=Capacity%3A,operation%20until%202059%20and%20beyond>
(Accessed July 2021)

7.2 List of Preparers

This EIR was prepared by the City of Palo Alto, with the assistance of Rincon Consultants, Inc. Consultant staff involved in the preparation of the EIR are listed below.

RINCON CONSULTANTS, INC.

Abe Leider, AICP CEP, Principal
 Karly Kaufman, MESM, Project Manager
 Steven Treffers, Architectural Historian
 JulieAnn Murphy, Architectural Historian
 Nichole Yee, Associate Planner
 Bill Vosti, Air Quality, GHG Emissions, and Noise Program Manager
 Torin R. Snyder, PG, CHG, QSD/P ToR, Principal
 Julie Lynne Welch, Director of Due Diligence
 Savanna Vrevich, Environmental Scientist
 Jake Nyiri, B.S., CESCL, Environmental Scientist
 Andrew McGrath, Paleontologist
 Allysen Valencia, GIS Analyst
 Dario Campos, Publishing Specialist
 Yaritza Ramirez, Publishing Specialist

W-TRANS TRANSPORTATION CONSULTANTS

Kenny Jeong, PE, Senior Engineer

This page intentionally left blank.