

# Adeline Corridor Specific Plan

Draft Environmental Impact Report

SCH#2018072009

*prepared by*

**City of Berkeley**

Department of Planning & Development

1947 Center Street, 2<sup>nd</sup> Floor Berkeley,

California 94704

Contact: Alisa Shen, Principal Planner

*prepared with the assistance of*

**Rincon Consultants, Inc.**

449 15<sup>th</sup> Street, Suite 303

Oakland, California 94612

**May 2019**



**RINCON CONSULTANTS, INC.**

Environmental Scientists | Planners | Engineers

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# Executive Summary

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This document is an Environmental Impact Report (EIR) analyzing the environmental effects of the proposed Adeline Corridor Specific Plan (proposed Specific Plan). 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

### Lead Agency/Project Applicant

City of Berkeley  
Planning and Development Department  
1947 Center Street, 2nd Floor  
Berkeley, California 94704  
Contact: Alisa Shen, (510) 981-7409

### Project Description

The proposed project involves the adoption of the Adeline Corridor Specific Plan (“Specific Plan” or “Plan”). The proposed Specific Plan provides a vision and planning framework for future growth and development in the Adeline Corridor Plan Area (“Plan Area”). The Plan provides a comprehensive vision for the Plan Area along with goals, policies, strategies and development regulations to guide the Plan Area’s future growth in an equitable manner that benefits the existing community.

The Adeline Corridor Specific Plan includes a buildout projection which represents the *foreseeable maximum* development that the City has projected can reasonably be expected to occur in the Plan Area through the plan horizon year (2040), and is thus the level of development analyzed in this EIR. For the purposes of environmental analysis, a reasonably foreseeable estimate of buildout associated with the proposed Specific Plan through the horizon year of 2040 would include the development of 1,450 housing units and 65,000 square feet of commercial space.

The proposed Specific Plan provides a vision and planning framework for future growth and development in the approximately 86-acre area in South Berkeley. The Specific Plan includes the following chapters:

- The **Introduction** chapter (Chapter 1) describes the Plan Area conditions and context, the purpose of the document and the community engagement and plan development process.
- The **Vision and Planning Framework** chapter (Chapter 2) provides the long-term vision and guiding principles for the Plan Area.
- The **Land Use** chapter (Chapter 3) provides policy direction and development standards for the land uses and building forms envisioned in the Plan Area. These policies and standards provide the basis for proposed changes to zoning regulations that would apply to future private and public development projects and public improvements.

- The **Housing Affordability** chapter (Chapter 4) provides policies and strategies to create new housing, including housing that is affordable to people at the lowest income levels and to preserve existing affordable housing and protect tenants at high risk of displacement.
- The **Economic Opportunity** chapter (Chapter 5) includes strategies to foster the economic opportunities of residents and businesses through capacity-building of existing and new business organizations and an environment for commerce to thrive and grow.
- The **Transportation** chapter (Chapter 6) includes policies and proposed improvements intended to improve safety, mobility, and accessibility for pedestrians, cyclists, transit and cars. The proposed improvements can be implemented separately or in conjunction with a long-term conceptual re-design of the right-of-way.
- The **Public Space** chapter (Chapter 7) presents long-term design concepts and near-term strategies intended to improve connections along and across the corridor and to provide attractive and inclusive public space for community members to gather and interact.
- The **Implementation** chapter (Chapter 8) outlines implementation measures or “next steps” to achieve the long-term vision of the Adeline Corridor Specific Plan.

The Specific Plan seeks to articulate and implement a long-range vision for the Plan Area by establishing a broad set of goals, principles, and strategies. The Plan’s Vision Statement expresses the desired outcome from implementation of the Specific Plan.

Over the next 20 years, the Adeline Corridor will become a national model for equitable development. Existing affordable housing will be conserved, while new affordable and market rate housing for a range of income levels will be added. The Corridor will provide local economic opportunity through independent businesses, community non-profits, arts organizations, community markets, and an array of merchants and service providers. It will feature public spaces that are walkable, bikeable, green, and accessible to persons of all ages and abilities. It will be the center of a healthy community that cares for its most vulnerable residents, cherishes its elders, nurtures its youth, and welcomes households of all types. It will be a place where the people, places and institutions that have made South Berkeley what it is today are not only recognized---but celebrated. It will be a place where all people can thrive.

Five broad, interrelated goals serve as the framework for the policies, strategies and actions that are presented in the five corresponding topical chapters of the Plan and summarized below:

- Preserve the unique character and cultural legacy of the Adeline corridor, sustaining the community as a place where all people can live, work, play, learn, worship, dine, and thrive.
- Foster economic opportunity for South Berkeley residents and businesses by facilitating job training and workforce development, active community spaces, and a thriving environment for commerce along the Adeline Street /South Shattuck Corridor.
- Promote equitable access to housing by producing new affordable housing, preserving existing affordable housing, and preventing displacement.
- Provide safe, equitable transportation options that meet the mobility needs of all residents, regardless of age, means and abilities, and that further the attainment of the City’s greenhouse gas reduction goals.

- Provide safe, sustainable, healthy and inclusive public spaces that encourage social interaction, provide opportunities for recreation and environmental health, and support active community life in South Berkeley.

Additional detail about the proposed Specific Plan is included in Section 2, *Project Description*.

## Project Objectives

The Adeline Corridor Specific Plan is intended to achieve the following project objectives and desired outcomes as it is implemented over time (items are grouped topically and the order in which they are presented is not intended to indicate priority):

1. **“Complete Neighborhoods”**. Encourage “complete neighborhoods” that foster a diverse mix of uses to provide safe and convenient access for all people of all ages, abilities and income levels to meet daily needs: to live, work, play, learn, worship, dine, shop, and socialize with one another. An important feature of an urban, complete neighborhood is that it is transit-oriented and built at a walkable and bikeable human scale.
2. **Leverage Publicly Owned Land to Achieve Community Goals**. Leverage publicly owned land, such as the Ashby BART Station Area surface parking lots, and the right-of-way to maximize affordable housing and other uses, community facilities and public improvements desired by the community;
3. **Equitable Development**. Develop regulations, incentives and guidelines that are aligned with the community’s vision and result in greater opportunities for low income and historically disenfranchised or displaced residents.
4. **Compatibility with Adjacent Neighborhoods**. Ensure compatibility with residential neighborhoods adjacent to parcels that abut the main commercial streets and encourage sensitive design transitions, public amenities and uses that benefit the surrounding neighborhood.
5. **Diverse and Affordable Housing**. Encourage development of a variety of types of housing at a range of income levels, especially for those at very low income levels and who are at high risk of involuntary displacement.
6. **Protections for Existing Affordable Housing and Tenants**. Continue and strengthen existing programs and funding for anti-eviction and technical assistance for tenants and property owners to preserve existing affordable housing.
7. **New and Expanded Funding Sources**. Explore new, locally controlled funding source and expand financing mechanisms to fund affordable housing, public space and other high-priority “community benefits”.
8. **Strong Local Businesses and Non-profit Service Providers and Business Organizations**. Support long-term viability of existing businesses and non-profit service providers and business district and merchant organizations.
9. **Neighborhood Identity Marketing and Support**. Support broader awareness and strengthen the area’s identity as a cultural center for African-Americans and Japanese-Americans; as an arts and cultural district; as home to the Berkeley Juneteenth Festival and the Berkeley Flea and Farmers Markets, and a wealth of community-based non-profit service organizations.
10. **Attractive and Welcoming Environment for Businesses and Workers to Thrive**. Support programs that enhance the attractiveness, cleanliness and safety of Adeline

Street and its storefronts/building facades; as well as opportunities for high quality jobs that allow people to live and work in the area,

11. **Better Mobility and Connectivity.** Improve safety, connectivity, accessibility and access along and across Shattuck and Adeline streets for all people of all ages, abilities and income levels to meet daily needs: to live, work, play, learn, worship, dine, shop, and socialize with one another other.
12. **Inclusive Public Space.** Increase the amount of parks, plazas and other public space that encourages pedestrian activity, recreation and access to nature for persons of all abilities, age and incomes.
13. **Efficient and Shared Parking.** Support Transportation Demand Management and carefully managed parking that addresses businesses' and residents' needs without undermining public transit, walking and bicycling as preferred modes of transportation.
14. **On-going Transparent and Inclusive Plan Implementation Process.** Continue to engage the community, including those who are typically under-represented in city planning processes in meaningful ways to ensure implementation of Plan goals over the long-term.
15. **Environmental Sustainability.** Create a sustainable urban environment that incorporates green building features, green infrastructure and ecology, sustainable energy systems, water efficiency and conservation, and sustainable transportation systems.

## Alternatives

As required by Section 15126.6 of the *CEQA Guidelines*, this section of the EIR examines a range of reasonable alternatives to the proposed Specific Plan. The following alternatives are evaluated in this EIR:

- Alternative 1: No Project Alternative
- Alternative 2: No Street Redesign Alternative
- Alternative 3: Office Focus Alternative

Based on the alternatives analysis, Alternative 2 was determined to be the environmentally superior alternative.

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

## Areas of Known Controversy

The EIR scoping process identified several areas of known controversy for the proposed project including traffic congestion, greenhouse gas (GHG) emissions, and issues associated with displacement and gentrification. Responses to the Notice of Preparation of a Draft EIR and input received at the EIR scoping meeting held by the City are summarized in Section 1, *Introduction*.

## Issues to be Resolved

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

## Issues Not Studied in Detail in the EIR

Section 4.14, *Effects found not to be Significant*, includes a discussion of issues not studied in detail in the EIR. These issues include aesthetics, agricultural and forestry resources, and mineral resources. No impacts associated with these issue areas were identified.

## Summary of Impacts and Mitigation Measures

Table ES-1 summarizes the environmental impacts of the proposed project, proposed mitigation measures, and residual impacts (the impact after application of mitigation, if required). Although distinct from mitigation measures, project design features (PDFs) are also listed because they will be included as conditions of approval by the City to avoid potential biological and geological impacts. 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.
- **Significant but Mitigable to Less than Significant.** 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-1 Summary of Environmental Impacts, Mitigation Measures, and Residual Impacts

Impact	Mitigation Measure (s)	Residual Impact
<b>Air Quality</b>		
Impact AQ-1. The proposed Specific Plan would be consistent with BAAQMD's 2017 Clean Air Plan. Impacts would be less than significant.	None required	Less than significant without mitigation.
Impact AQ-2. Buildout of the proposed Specific Plan would result in the temporary generation of air pollutants during construction, which would affect local air quality. Compliance with the BAAQMD Basic Construction Mitigation Measures would require future projects within the Plan Area to implement measures to reduce construction emissions. Impacts would be significant but mitigable to less than significant.	<b>AQ-1 Construction Emissions Measures.</b> As part of the City's development approval process, the City shall require applicants for future development projects in the Plan Area to comply with the current Bay Area Air Quality Management District's basic control measures for reducing construction emissions of PM10 (Table 8-2, Basic Construction Mitigation Measures Recommended for All Proposed Projects, of the May 2017 BAAQMD CEQA Guidelines).	Less than significant.
Impact AQ-3. Buildout of the proposed Specific Plan may expose sensitive receptors to additional sources of toxic air contaminants. Impacts would be significant but mitigable to less than significant.	<b>AQ-2 Health Risk Assessments.</b> As part of the City's development approval process, the City shall require applicants for future development projects in the Plan Area to implement the Bay Area Air Quality Management District Guidelines and State Office of Environmental Health Hazard Assessment policies and procedures requiring health risk assessments (HRA) for residential development and other sensitive receptors near sources of toxic air contaminants, including freeways and roadways with over 10,000 vehicles per day. Based on the results of the HRA, identify and implement measures (such as air filtration systems, waterproofed caulking on windows and doors, and/or requirements for closed windows) to reduce potential exposure to particulate matter, carbon monoxide, diesel fumes, and other potential health hazards. Measures identified in HRAs shall be included into the site development plan as a component of a proposed project.	Less than significant.
Impact AQ-4. The proposed Specific Plan would not create objectionable odors that would affect neighboring properties. Impacts related to odors would be less than significant.	None required	Less than significant without mitigation.
<b>Biological Resources</b>		
Impact BIO-1. The Plan Area is highly urbanized and no special-status species have been recorded in the Plan Area. Implementation of the proposed Specific Plan may result in impacts to Special Status nesting birds or nesting birds protected under California Fish and Game Code; this impact would be significant but mitigable to less than significant.	<b>BIO-1 Special-status Bat Species Avoidance and Minimization.</b> For projects in the Plan Area, focused surveys to determine the presence/absence of roosting bats shall be conducted prior to the initiation of demolition of buildings and removal of mature trees large enough to contain crevices and hollows that could support bat roosting. If active maternity roosts are identified, a qualified biologist shall establish avoidance buffers applicable to the species, the roost location and exposure, and the proposed	Less than significant.

Impact	Mitigation Measure (s)	Residual Impact
	<p>construction activity in the area. If active non-maternity day or night roosts are found on the project site, measures shall be implemented to passively relocate bats from the roosts prior to the onset of construction activities. Such measures may include removal of roosting site during the time of day the roost is unoccupied or the installation of one-way doors, allowing the bats to leave the roost but not to re-enter. These measures shall be presented in a Bat Passive Relocation Plan that shall be submitted to, and approved by, CDFW.</p>	
<p>Impact BIO-2. Implementation of the proposed Specific Plan would not result in impacts to riparian habitat or other sensitive habitats. This impact would be less than significant.</p>	<p>None required</p>	<p>Less than significant without mitigation.</p>
<p>Impact BIO-3. Implementation of the proposed Specific Plan would not result in impacts to federally protected wetlands. No impact would occur.</p>	<p>None required</p>	<p>Less than significant without mitigation.</p>
<p>Impact BIO-4. Implementation of the proposed Specific Plan would not impact the movement of native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors. This impact would be less than significant.</p>	<p>None required</p>	<p>Less than significant without mitigation.</p>
<p>Impact BIO-5. Implementation of the proposed Specific Plan would not conflict with local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance. This impact would be less than significant.</p>	<p>None required</p>	<p>Less than significant without mitigation.</p>
<p>Impact BIO-6. Implementation of the proposed Specific Plan would not conflict with the provisions of an adopted habitat conservation plan, natural community conservation plan, or other approved local, regional, or state habitat conservation plan. No impact would occur.</p>	<p>None required</p>	<p>Less than significant without mitigation.</p>
<p><b>Cultural Resources</b></p>		
<p>Impact CR-1. The Plan Area contains 25 known historical resources and three potential historic districts. Development in the Plan Area could impact the identified historical resources and historic districts and has the potential to impact unknown historical resources. However, adherence to the City's General Plan policies, existing City requirements, and to the strategies and vision of the proposed Specific Plan would reduce impacts to less than significant.</p>	<p>None required</p>	<p>Less than significant</p>

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Impact	Mitigation Measure (s)	Residual Impact
<p>Impact CR-2. The Plan Area does not contain known archaeological resources. Nonetheless, development facilitated by the proposed Specific Plan has the potential to impact unrecorded archaeological resources. However, with compliance with City of Berkeley standard conditions of approval, impacts would be less than significant.</p>	<p>None required</p>	<p>Less than significant without mitigation.</p>
<p>Impact CR-3. Ground-disturbing activities associated with development facilitated by the proposed Specific Plan could result in damage to or destruction of paleontological resources. However, with compliance with City of Berkeley standard conditions of approval, impacts would be less than significant.</p>	<p>None required</p>	<p>Less than significant without mitigation.</p>
<p>Impact CR-4. Ground-disturbing activities associated with development under the proposed Specific Plan could result in damage to or destruction of human burials. However, adherence to existing regulations regarding the discovery of human remains and to City of Berkeley standard conditions of approval would reduce potential impacts to a less than significant level.</p>	<p>None required</p>	<p>Less than significant without mitigation.</p>
<p>Impact CR-5. Site preparation and construction associated with development and right-of-way improvements under the proposed Specific Plan could adversely impact tribal cultural resources (TRC). However, with compliance with City of Berkeley standard conditions of approval, impacts would be less than significant.</p>	<p>None required</p>	<p>Less than significant without mitigation.</p>
<p><b>Geology and Soils</b></p>		
<p>Impact GEO-1. The Plan Area is near the Hayward Fault Zone and other faults. Therefore, the Plan Area is subject to seismically-induced ground shaking and other seismic hazards, including liquefaction, which could damage structures in the Plan Area and result in loss of property and risk to human health and safety. However, incorporation of State-mandated building standards and compliance with General Plan policies would ensure impacts would be less than significant.</p>	<p>None required</p>	<p>Less than significant without mitigation.</p>

Impact	Mitigation Measure (s)	Residual Impact
Impact GEO-2. With adherence to applicable laws and regulations, the proposed Specific Plan would not result in substantial soil erosion or the loss of topsoil. Therefore, impacts would be less than significant.	None required	Less than significant without mitigation.
Impact GEO-3. The Plan Area is located on expansive soils. Proper soil engineering practices would be required to ensure that soil conditions would not result in significant adverse impacts. With required implementation of standard engineering practices, impacts associated with unstable or expansive soils would be less than significant.	None required	Less than significant without mitigation.
Impact GEO-4. The proposed Specific Plan would not include septic tanks or alternative wastewater disposal systems. No impact would occur.	None required	Less than significant without mitigation.
<b>Greenhouse Gas Emissions</b>		
Impact GHG-1. A project that is consistent with a Qualified GHG Reduction Plan as described in the CEQA Guidelines Section 15183.5 is considered to have a less than significant impact. The proposed Specific Plan would be consistent with the 2017 Scoping Plan with mitigation. Therefore, this impact would be significant but mitigable to a less than significant level.	<p><b>GHG-1 All-Electric New Construction.</b> All new buildings constructed in the Plan Area shall be built as all-electric with no natural gas connection to the building. This includes all appliances such as electric cooking, clothes drying, water heating, and air conditioning.</p> <p>Projects which cannot be built as all-electric due to demonstrable technological constraints for specific components shall demonstrate an equivalent GHG reduction through other means. Project proponents shall model the annual GHG emissions from natural gas from the proposed project and then reduce GHG emissions by an equivalent amount through one of the following:</p> <ul style="list-style-type: none"> <li>▪ Purchase of verified, California based, carbon credits for 20 years</li> <li>▪ Payment for the replacement of natural gas equipment with electric in existing building(s) as identified and administered by City of Berkeley staff</li> </ul> <p>For projects involving low-income housing participating in the Low-Income Housing Tax Credit Program, project proponents may utilize the Low-income Housing Tax Credit Program ZNE Calculation in California Tax Credit Allocation Committee’s (CTCAC) Sustainable Building Methods Workbook to show 100% Zero Net Energy Offset for the project.</p> <p>For projects that involve natural gas components, the City of Berkeley shall review and approve plans for reducing equivalent GHG emissions prior to issuance of building permit.</p> <p><b>GHG-2 Electric Vehicle (EV) Readiness and EV Chargers.</b> All new development projects in the Plan Area shall conform to the following EV infrastructure</p>	Less than significant.

Impact	Mitigation Measure (s)	Residual Impact
	<p>requirements or an equivalent City of Berkeley adopted ordinance which meets or exceeds those standards:</p> <ul style="list-style-type: none"> <li>▪ Single Family Homes and Duplexes               <ul style="list-style-type: none"> <li>▫ One Level 2<sup>1</sup> EV ready<sup>2</sup> circuit per parking space or dwelling unit (whichever is less)</li> </ul> </li> <li>▪ Multi-Family Buildings               <ul style="list-style-type: none"> <li>▫ Small/medium buildings (3-40 units):                   <ul style="list-style-type: none"> <li>– One Level 2 circuit per dwelling unit</li> </ul> </li> <li>▫ Large buildings (Over 40 units):                   <ul style="list-style-type: none"> <li>– One circuit per dwelling unit                       <ul style="list-style-type: none"> <li>▫ 25 percent Level 2 circuits</li> <li>▫ 75 percent Level 1<sup>3</sup> circuits or Level 2 circuits with load management</li> </ul> </li> </ul> </li> </ul> </li> <li>▪ Non-Residential Buildings               <ul style="list-style-type: none"> <li>▫ Mixture of EVSE<sup>4</sup> and EV Capable<sup>5</sup>:                   <ul style="list-style-type: none"> <li>– 10 percent of spaces with Level 2 EVSE installed</li> <li>– 10 percent of spaces with Level 1 outlets and with Level 2 conduits</li> </ul> </li> <li>▫ Conduits through inaccessible areas to support future Level 1 or Level 2 with power sharing. Percentage depends on parking structure type:                   <ul style="list-style-type: none"> <li>– On-grade parking: 50 percent Level 2 EV Capable; Panel Capacity, average 2kW per EV space</li> <li>– Underground or deck parking: 100 percent Level 2 EV Capable; Panel Capacity, average 1kW per EV space</li> </ul> </li> </ul> </li> </ul> <p><b>GHG-3 Solar Photovoltaic Power.</b> All new buildings, with the exception of accessory buildings and structures, proposed in the Plan Area shall install solar photovoltaic energy systems or purchase 100% carbon neutral or renewable energy through East</p>	

<sup>1</sup> Level 2 circuit: 40+ Amp, 208/240v AC (standard household washer/dryer outlet), charges approximately 25-30 miles driving distance per hour

<sup>2</sup> EV ready: Raceway (conduit), overcurrent protection devices, wire and outlet (i.e. full circuit) have been installed, electrical service capacity (breaker space) has been provided, Electric outlet is fully ready to charge a vehicle.

<sup>3</sup> Level 1 circuit: 15-20 Amp, 120v AC (standard household outlet), charges approximately 3-4 mile driving distance per hour

<sup>4</sup> EVSE: Electric vehicle supply equipment, equipment used to charge an EV. Includes Level 1 household wall charging equipment, Level 2 charging stations and equipment, and Level 3 direct current fast charge stations and equipment (usually found at public and commercial installations).

<sup>5</sup> EV capable: Raceway (conduit) has been installed and electrical capacity (breaker space) provided. Electric outlet has been partially prepared for future EVSE.

Impact	Mitigation Measure (s)	Residual Impact
	<p>Bay Community Energy. Solar photovoltaic equipment shall be shown on all plans submitted for individual projects in the Plan Area.</p> <p><b>GHG-4 Cool Roof Technologies.</b> All new buildings, with the exception of accessory buildings and structures, proposed in the Plan Area shall incorporate cool roof materials or the functional equivalent (such as vegetated roofs) which meet or exceed the requirements in the most recent CALGreen Tier 1 code as applied to the specific proposed building type. Cool roof materials shall be shown on all plans submitted for individual projects in the Plan Area.</p>	
<b>Hazards and Hazardous Materials</b>		
<p>Impact HAZ-1. Implementation of the proposed Specific Plan would include development of residential or commercial land uses that could involve the use, storage, disposal, or transportation of hazardous materials. Upset or accident conditions in the Plan Area could involve the release of hazardous materials into the environment. Required adherence to existing regulations, programs, and Berkeley General Plan policies would ensure that impacts would be less than significant.</p>	<p>None required</p>	<p>Less than significant without mitigation.</p>
<p>Impact HAZ-2. Implementation of the proposed Specific Plan would not involve facilities that would produce or emit hazardous materials near schools. This impact would be less than significant.</p>	<p>None required</p>	<p>Less than significant without mitigation.</p>
<p>Impact HAZ-3. There is one property in the Plan Area with potentially localized contamination or concentrations of hazardous substances in the Plan Area. However, projects in the Plan Area would be required to comply with existing regulations related to hazardous materials and wastes. Therefore, workers or residents in the Plan Area would not be exposed to hazards resulting from development of a hazardous materials site and this impact would be less than significant.</p>	<p>None required</p>	<p>Less than significant without mitigation.</p>
<p>Impact HAZ-4. The Plan Area is not located in an airport land use plan or in the vicinity of a private airstrip. Impacts related to airports would not occur.</p>	<p>None required</p>	<p>Less than significant without mitigation.</p>
<p>Impact HAZ-5. Implementation of the proposed Specific Plan would not impair implementation of or physically interfere</p>	<p>None required</p>	<p>Less than significant without mitigation.</p>

Impact	Mitigation Measure (s)	Residual Impact
with an adopted emergency response plan or emergency evacuation plan. This impact would be less than significant.		
Impact HAZ-6. Implementation of the proposed Specific Plan would not expose people or structures to a significant risk from wildland fires because the Plan Area is located in an urbanized setting. No impact would occur.	None required	Less than significant without mitigation.
<b>Hydrology and Water Quality</b>		
Impact HYD-1. Future development under the Specific Plan would involve ground-disturbing activities and the use of heavy machinery that could release materials, including sediments and fuels, which could adversely affect water quality. In addition, operation of potential future development could also result in discharges to storm drains that could be contaminated and affect downstream waters. However, compliance with required permits and existing regulations, and implementation of Best Management Practices contained therein, would ensure that potential water quality impacts would be less than significant.	None required	Less than significant without mitigation.
Impact HYD-2. Construction of future development under the Specific Plan would not substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table. Further, implementation of low impact development measures and on-site infiltration required under the C.3 provisions of the MRP, compliance with the General Plan goals and policies, the Berkeley Municipal Code, and the Specific Plan strategies, policies, guidelines, and standards would increase the potential for groundwater recharge. Impacts would be less than significant.	None required	Less than significant without mitigation.

Impact	Mitigation Measure (s)	Residual Impact
Impact HYD-3. Future development under the Specific Plan would not substantially alter the existing drainage pattern of the Plan area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site or substantially increase the rate or amount of surface runoff in a manner which would result in flooding or exceed the capacity of stormwater drainage systems. Impacts related to drainage patterns would be less than significant.	None required	Less than significant without mitigation.
Impact HYD-4. Development under the proposed Specific Plan would not expose people or structures to other flood hazards such as tsunamis, seiches, or flooding including flooding as the result of dam or levee failure. Impacts would be less than significant.	None required	Less than significant without mitigation.
<b>Land Use and Planning</b>		
Impact LU-1. Implementation of the proposed Specific Plan would not result in the physical division of an established community. This impact would be less than significant.	None required	Less than significant without mitigation.
Impact LU-2. The proposed Specific Plan would implement and be consistent with the goals and policies of applicable land use plans and policies adopted for the purpose of avoiding or mitigating an environmental effect. This impact would be less than significant.	None required	Less than significant without mitigation.
Impact LU-3. The proposed Specific Plan would not conflict with an applicable habitat conservation plan or natural community conservation plan. This impact would be less than significant.	None required	Less than significant without mitigation.
<b>Noise</b>		
Impact N-1. New development facilitated by the proposed Specific Plan would be required to comply with the City's exterior noise standards and with the State standard for the exposure of habitable rooms to noise. The impact related to exposing people or generating noise levels in excess of standards would be less than significant.	None required	Less than significant without mitigation.

Impact	Mitigation Measure (s)	Residual Impact
<p>Impact N-2. Construction activities associated with implementation of the proposed Specific Plan would intermittently generate high noise levels within and adjacent to the Plan Area. Mitigation to restrict the hours of construction activity and minimize noise from equipment would reduce construction noise to the extent feasible. However, construction noise could still exceed the City’s standards at sensitive receptors. Therefore, the impact from construction noise would be significant and unavoidable.</p>	<p><b>N-2 Construction-Related Noise Reduction Measures.</b> Development projects in the Plan Area that involve construction activities shall apply the following measures during construction for the purpose of reducing construction-related noise:</p> <ul style="list-style-type: none"> <li>▪ <b>Construction Timing.</b> Construction activities shall be restricted to the daytime hours of between 7:00 AM and 7:00 PM on weekdays, or between 9:00 AM and 8:00 PM on weekends and legal holidays.</li> <li>▪ <b>Mufflers.</b> Construction equipment shall be properly maintained and all internal combustion engine driven machinery with intake and exhaust mufflers and engine shrouds, as applicable, shall be in good condition and appropriate for the equipment. During construction, all equipment, fixed or mobile, shall be operated with closed engine doors and shall be equipped with properly operating and maintained mufflers, consistent with manufacturers’ standards.</li> <li>▪ <b>Electrical Power.</b> Electrical power, rather than diesel equipment, shall be used to run compressors and similar power tools and to power any temporary structures, such as construction trailers or caretaker facilities.</li> <li>▪ <b>Equipment Staging.</b> All stationary equipment shall be staged as far away as feasible from adjacent noise-sensitive receptors.</li> <li>▪ <b>Equipment Idling.</b> Construction vehicles and equipment shall not be left idling for longer than five minutes when not in use.</li> <li>▪ <b>Workers’ Radios.</b> All noise from workers’ radios shall be controlled to a point that they are not audible at sensitive receptors near construction activity.</li> <li>▪ <b>Smart Back-up Alarms.</b> Mobile construction equipment shall have smart back-up alarms that automatically adjust the sound level of the alarm in response to ambient noise levels. Alternatively, back-up alarms shall be disabled and replaced with human spotters to ensure safety when mobile construction equipment is moving in the reverse direction.</li> <li>▪ <b>Disturbance Coordinator.</b> The applicant shall designate a disturbance coordinator who shall be responsible for responding to any local complaints about construction noise. The noise disturbance coordinator shall determine the cause of the noise complaint (e.g., starting too early, bad muffler, etc.) and shall require that reasonable measures warranted to correct the problem be implemented. A telephone number for the disturbance coordinator shall be conspicuously posted at the construction site.</li> <li>▪ <b>Additional Noise Attenuation Techniques.</b> During construction activity that is immediately adjacent to noise-sensitive receptors, temporary sound barriers may be installed and maintained, at the discretion of the City’s Department of Planning and Development. Temporary sound barriers, if installed, shall block line</li> </ul>	<p>Significant and unavoidable.</p>

Impact	Mitigation Measure (s)	Residual Impact
	<p>of sight between noise-generating construction equipment and adjacent residential windows and shall be placed as close to the source equipment as feasible. Mobile sound barriers may be used as appropriate to attenuate construction noise near the source equipment. During the building construction phase, temporary sound barriers may be applied to generators and cranes used on-site.</p>	
<p>Impact N-3. Construction activities associated with implementation of the proposed Specific Plan would intermittently generate groundborne vibration within and adjacent to the Plan Area. Institutional land uses with sensitive daytime activities could be exposed to vibration levels exceeding FTA guidelines. This impact would be significant but mitigable to less than significant.</p>	<p><b>N-3 Vibration Reduction Measures.</b> Applicants for new development that would involve construction activity in the Plan Area shall implement the following measures to reduce exposure to vibration from construction activities:</p> <ul style="list-style-type: none"> <li>▪ <b>Best Available Technology.</b> The applicant shall use the best available technology to reduce construction-related vibration on construction sites within 100 feet of institutional land uses that are sensitive to vibration, and within 50 feet of historic buildings, so that vibration levels do not exceed guidelines in the Federal Transit Administration’s <i>Transit Noise and Vibration Impact Assessment Manual</i> for annoyance and damage to fragile structures. Appropriate technology may include, but is not limited to: <ul style="list-style-type: none"> <li>▫ Drilling of piles instead of pile driving for foundation work</li> <li>▫ Static rollers instead of vibratory rollers for paving activity</li> <li>▫ Smaller and well-maintained equipment</li> </ul> </li> <li>▪ <b>Construction Scheduling.</b> The applicant shall coordinate with adjacent institutional land uses that are sensitive to vibration and schedule vibration-generating construction activities during less sensitive times of day.</li> </ul>	<p>Less than significant.</p>
<p>Impact N-4. Buildout of the proposed Specific Plan would generate new vehicle trips in the Plan Area. Although new vehicle trips would increase traffic volumes and associated traffic noise on arterial roadways in the Plan Area, the increase in traffic noise would not exceed applicable FTA criteria. Therefore, the Specific Plan would have a less than significant impact related to traffic noise.</p>	<p>None required</p>	<p>Less than significant without mitigation.</p>

Impact	Mitigation Measure (s)	Residual Impact
<p>Impact N-5. Operational activities associated with buildout of the Specific Plan would generate noise that may periodically be audible to noise-sensitive receptors near the Plan Area. Noise sources would include stationary equipment, such as rooftop ventilation and heating systems, and delivery and trash hauling trucks. However, operational noise would not exceed ambient noise levels at nearby noise-sensitive receptors. Therefore, operational noise impacts would be less than significant.</p>	<p>None required</p>	<p>Less than significant without mitigation.</p>
<p>Impact N-6. The Plan Area is located outside of noise contours associated with airports. Therefore, new development under buildout of the Specific Plan would not be exposed to excessive noise levels from aircraft operations, and no impact would occur.</p>	<p>None required</p>	<p>Less than significant without mitigation.</p>
<p><b>Population and Housing</b></p>		
<p>Impact PH-1. Implementation of the proposed Specific Plan could produce an additional 1,450 residential units and 65,000 square feet of commercial uses, which would result in an additional approximately 3,466 residents and 195 jobs. The proposed Specific Plan would not cause substantial unanticipated population growth in Berkeley. Impacts would be less than significant.</p>	<p>None required</p>	<p>Less than significant without mitigation.</p>
<p>Impact PH-2. Implementation of the proposed Specific Plan could displace existing housing units or people; however, implementation of the Specific Plan would increase the Plan Area’s housing stock overall, including its stock of below market rate housing. Impacts resulting from potential displacement would be further reduced with adherence to the proposed Specific Plan policies and existing City programs. Impacts would be less than significant.</p>	<p>None required</p>	<p>Less than significant without mitigation.</p>

Impact	Mitigation Measure (s)	Residual Impact
<b>Public Services and Recreation</b>		
<p>Impact PS-1. Projected buildout under implementation of the proposed Specific Plan would increase development intensity and population growth in the Plan Area, contributing to the potential future need for a new fire station in South Berkeley. If the Fire Department proposes a new station and identifies an appropriate site, the City will conduct a separate evaluation of the station’s environmental impacts under CEQA. While no location has been identified for a new fire station in the Adeline Corridor as part of the proposed Specific Plan, the Plan Area is entirely developed and urbanized. A potential future facility would likely be developed as infill development and is unlikely to cause additional significant environmental impacts beyond those identified in this EIR. Therefore, the Specific Plan would have a less than significant impact related to fire protection facilities.</p>	<p>None required</p>	<p>Less than significant without mitigation.</p>
<p>Impact PS-2. Implementation of the proposed Specific Plan would add new residential and non-residential uses to the Plan Area, generating additional need for the City of Berkeley Police Department’s protection services. While no new police station location has been identified as part of the proposed Specific Plan, the Plan Area is entirely developed and urbanized. A potential future facility would likely be developed as infill development and is unlikely to cause additional significant environmental impacts beyond those identified in this EIR. If the Police Department proposes a new station serving the Plan Area and identifies an appropriate site, the City will conduct a separate evaluation of the station’s environmental impacts under CEQA. Therefore, the Specific Plan would have a less than significant impact related to police protection services.</p>	<p>None required</p>	<p>Less than significant without mitigation.</p>
<p>Impact PS-3. Implementation of the proposed Specific Plan would add an estimated 277 students to the Plan Area. However, with payment of State-mandated school impact fees, impacts related to public school operating capacity would be less than significant.</p>	<p>None required</p>	<p>Less than significant without mitigation.</p>

Impact	Mitigation Measure (s)	Residual Impact
<p>Impact PS-4. Implementation of the proposed Specific Plan would add an estimated 1,450 residential units and an estimated 3,466 residents to the Plan Area, which would increase use of parks. However, the Specific Plan would result in the development of new parkland to meet demand for recreational spaces in the Plan Area. Further, development under the Specific Plan would not cause Berkeley to fall below the City's goal of 2 acres of parkland per 1,000 residents. Therefore, impacts would be less than significant.</p>	<p>None required</p>	<p>Less than significant without mitigation.</p>
<p>Impact PS-5. Implementation of the proposed Specific Plan would add an estimated 1,450 residential units and an estimated 3,466 residents to the Plan Area, including senior citizens who might rely on services offered by the City's senior centers. However, existing senior facilities would have adequate capacity to accommodate an incremental increase in demand in the Plan Area. This impact would be less than significant.</p>	<p>None required</p>	<p>Less than significant without mitigation.</p>
<p><b>Transportation and Traffic</b></p>		
<p>Impact T-1. The addition of traffic generated by the development projects facilitated by the Specific Plan and the roadway modifications proposed by the Specific Plan would cause the signalized Adeline Street/Alcatraz Avenue intersection to deteriorate from LOS D during the AM peak hour and LOS E during the PM peak hour under Existing Conditions to LOS F during both AM and PM peak hours under Existing Plus Project conditions. This impact would be significant and unavoidable.</p>	<p>None feasible</p>	<p>Significant and unavoidable.</p>
<p>Impact T-2. The addition of traffic generated by the development projects facilitated by the Specific Plan may add 10 or more peak hour trips to the critical movement of an unsignalized intersection that operates at LOS F and result in the peak hour signal warrant (MUTCD, Warrant 3) being met under Existing Plus Project conditions. This impact would be significant but mitigatable to less than significant.</p>	<p><b>T-2 Signal Warrant Study and Signalization.</b> Development projects tiering from the Adeline Street Specific Plan EIR with primary automobile access on one of the following local streets that is currently controlled by a stop-sign at the intersection with a major street shall evaluate traffic operations and the MUTCD signal warrants at the intersection:</p> <ul style="list-style-type: none"> <li>▪ Shattuck Avenue at Blake, Parker, and Derby Streets</li> <li>▪ Adeline Street at Stuart, Russell, Essex, Woolsey, Fairview, and Harmon Streets</li> </ul> <p>The signal warrant study shall be completed as part of the environmental review process for the development project. If the intersection meets the signal warrants</p>	<p>Less than significant.</p>

Impact	Mitigation Measure (s)	Residual Impact
	<p>and the development project would add ten or more trips to the critical movement that operates at LOS F during the AM and/or PM peak hour, the study shall identify improvements to mitigate the impact. The improvements may consist of signaling the intersection, and/or restricting one or more movements at the intersection. The study shall also evaluate the secondary effects of the identified improvement, such as traffic diverted to other streets due to turn restrictions. The development project shall install the identified improvement.</p>	
<p>Impact T-3. The addition of traffic generated by the development projects facilitated by the Specific Plan and the roadway modifications proposed by the Specific Plan would increase the V/C ratio by more than 0.01 at the signalized Adeline Street/Alcatraz Avenue intersection, which would operate at LOS F during both AM and PM peak hours in 2040 regardless of the proposed Specific Plan. This impact would be significant and unavoidable.</p>	<p>None feasible</p>	<p>Significant and unavoidable.</p>
<p>Impact T-4. The addition of traffic generated by the development projects facilitated by the Specific Plan may add 10 or more peak hour trips to the critical movement of an unsignalized intersection that operates at LOS F and result in the peak hour signal warrant (MUTCD, Warrant 3) being met under 2040 Plus Project conditions. This impact would be significant but mitigatable to less than significant.</p>	<p>Mitigation Measure T-2 described under impact T-2.</p>	<p>Less than significant.</p>
<p>Impact T-5. The roadway modifications proposed by the Specific Plan would not cause Streetscore+ of 3 or higher for pedestrians and bicyclists on the street segments along the Adeline Corridor. This impact would be less than significant.</p>	<p>None required</p>	<p>Less than significant.</p>
<p>Impact T-6. The addition of traffic generated by the development projects facilitated by the Specific Plan and the roadway modifications proposed by the Specific Plan would result in the Study CMP roadway segments to Deteriorate from LOS E or better to LOS F, or increase V/C ratio by 0.03 or more for a facility operating at LOS F without the Specific Plan. This impact would be significant and unavoidable.</p>	<p>None feasible.</p>	<p>Significant and unavoidable.</p>
<p>Impact T-7. The proposed Specific Plan would not Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks. This impact would be less than significant.</p>	<p>None required</p>	<p>Less than significant.</p>

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Impact	Mitigation Measure (s)	Residual Impact
Impact T-8. The proposed Specific Plan would not substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment). This impact would be less than significant.	None required	Less than significant.
Impact T-9. The proposed Specific Plan would not result in inadequate emergency access. This impact would be less than significant.	None required	Less than significant.
Impact T-10. The proposed Specific Plan would not conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities. This impact would be less than significant.	None required	Less than significant.
<b>Utilities and Service Systems</b>		
Impact UTL-1. New development under the proposed Specific Plan would generate new sources of wastewater, which would flow through the existing pipe network and to EBMUD’s Main Wastewater Treatment Plant (MWWTP). The wastewater treatment plant has adequate capacity to serve development associated with the Specific Plan. Local conveyance infrastructure would be upgraded as necessary during implementation of the proposed Specific Plan, in already developed utility corridors. Impacts related to wastewater infrastructure would be less than significant.	None required	Less than significant without mitigation.
Impact UTL-2. Development under the proposed Specific Plan would increase water demand. Existing and projected water supply would be adequate to serve the Plan Area demands through 2040 (the horizon year of the proposed Specific Plan), with demand management measures required by EBMUD. Impacts related to water supplies would be less than significant.	None required	Less than significant without mitigation.

Impact	Mitigation Measure (s)	Residual Impact
<p>Impact UTL-3. Implementation of the proposed Specific Plan would generate an increase of approximately 1.1 tons of solid waste per day, or 2.2 cubic yards per day. Because landfills that serve the City of Berkeley have adequate capacity to serve development under the proposed Specific Plan, impacts related to solid waste facilities would be less than significant.</p>	<p>None required</p>	<p>Less than significant without mitigation.</p>

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# 1 Introduction

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This document is an Environmental Impact Report (EIR) that evaluates the potential environmental effects associated with implementation of the Adeline Corridor Specific Plan (“proposed Specific Plan”).

This section discusses (1) an overview of the proposed Specific Plan; (2) the legal basis for preparing a Program EIR pursuant to the California Environmental Quality Act (CEQA) Guidelines; (3) the scope and content of the EIR; (4) the lead, responsible, and trustee agencies; (5) the intended uses of the EIR; and (6) the environmental review process required under CEQA. The proposed Specific Plan is described in detail in Section 2, *Project Description*.

## 1.1 Specific Plan Background

The Adeline Corridor Specific Plan Area (“Plan Area”) is located in the southern portion of the City of Berkeley and extends approximately 1.3 miles north from the Berkeley/Oakland border along Adeline Street and Shattuck Avenue. It serves as an important transition between the City of Oakland (to the south) and Downtown Berkeley (to the north). The Plan Area encompasses approximately 86 acres of land. It contains a wide range of commercial, civic, cultural and residential land uses as well as the Ashby BART Station, a regional transit facility, located in the central/southern portion of the Plan Area. In addition to BART, there is also frequent AC Transit bus service throughout the Plan Area via multiple fixed routes. The northern Plan Area boundary is also within one-half mile of the Downtown Berkeley BART station.

## 1.2 Purpose and Legal Authority

The proposed Specific Plan requires the discretionary approval of the City of Berkeley City Council; therefore, the project is subject to the environmental review requirements of CEQA. In accordance with Section 15121 of the *CEQA Guidelines* (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 fulfills the requirements for a Program EIR. Although the legally required contents of a Program EIR are the same as those of a Project EIR, Program EIRs are typically more conceptual and may contain a more general discussion of impacts, alternatives, and mitigation measures than a Project EIR. As provided in CEQA Guidelines Section 15168, a Program EIR may be prepared on a series of actions that may be characterized as one large project. Use of a Program EIR provides the City (as Lead Agency) with the opportunity to consider broad policy alternatives and program-wide mitigation measures and provides the City with greater flexibility to address environmental issues and/or cumulative impacts on a comprehensive basis. Agencies generally prepare Program EIRs for programs or a series of related actions that are linked geographically; are logical parts of a chain of

contemplated events, rules, regulations, or plans that govern the conduct of a continuing program; or are individual activities carried out under the same authority and having generally similar environmental effects that can be mitigated in similar ways. By its nature, a Program EIR considers the “macro” effects associated with implementing a program (such as a specific plan) and does not, and is not intended to, examine the specific environmental effects associated with individual actions that may be undertaken under the guise of the larger program.

Once a Program EIR has been prepared, subsequent activities within the program must be evaluated to determine what, if any, additional CEQA documentation needs to be prepared. If the Program EIR addresses the program’s effects as specifically and comprehensively as possible, many subsequent activities could be found to be within the Program EIR scope and additional environmental documents may not be required (CEQA Guidelines Section 15168(c)). When a Program EIR is relied on for a subsequent activity, the Lead Agency must incorporate feasible mitigation measures and alternatives developed in the Program EIR into the subsequent activities (CEQA Guidelines Section 15168(c)(3)). If a subsequent activity would have significant effects not addressed in the Program EIR, the Lead Agency must prepare a new Initial Study leading to a Negative Declaration (ND), Mitigated Negative Declaration (MND), or project level EIR. In this case, the Program EIR still serves a valuable purpose as the first-tier environmental analysis. The CEQA Guidelines (Section 15168(h)) encourage the use of Program EIRs, citing five advantages:

1. Provision of a more exhaustive consideration of impacts and alternatives than would be practical in an individual EIR
2. Focus on cumulative impacts that might be slighted in a case-by-case analysis
3. Avoidance of continual reconsideration of recurring policy issues
4. Consideration of broad policy alternatives and programmatic mitigation measures at an early stage when the agency has greater flexibility to deal with them
5. Reduction of paperwork by encouraging the reuse of data (through tiering)

As a “macro” level environmental document, for some impacts, this EIR uses macro level thresholds as compared to the project-level thresholds that might be used for an EIR on a specific development project.

### 1.3 EIR Scope

In accordance with the *CEQA Guidelines*, a Notice of Preparation (NOP) of a Draft EIR was circulated to potentially interested parties and agencies on July 5, 2018. The NOP, included in Appendix A, indicated that the following issue areas would be discussed in the EIR:

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

The EIR evaluates potential impacts in each of these areas. Other issue areas are discussed in Section 4.15, *Effects Found Not to be Significant*.

The City received 22 written responses to the NOP regarding the scope and content of the EIR. These responses are included in Appendix A. The City also held an EIR scoping meeting as part of the regularly scheduled Planning Commission meeting on July 18, 2018. Approximately 40 people attended the hearing. At the hearing, 12 people provided verbal comments and six provided written comments on the scope and content of the EIR. Verbal comments from the scoping meeting attendees and written comments received by the City are summarized in Table 1-1. The written comments are also included in Appendix A. In addition, a discussion related to issues around the potential for gentrification and displacement in South Berkeley, which were concerns raised by a number of commenters, is included in Subsection 1.3.1 following the table. Verbal and written comments are addressed, as appropriate, in the analysis contained in the various subsections of Section 4, *Environmental Impact Analysis*.

Table 1-1 NOP Comments and EIR Response

Commenter	Comment/Request	Response/How and Where it was Addressed
<b>Public Agencies</b>		
East Bay Municipal Utilities District (EBMUD)	<p>Water Supply Assessment is required for the Specific Plan.</p> <p>EBMUD will not install pipes or conduct service in contaminated soils.</p> <p>EBMUD's Main Wastewater Treatment Plan and interceptor system have adequate capacity to accommodate the proposed wastewater flow in dry conditions however; additional wastewater infrastructure may be required to accommodate proposed wastewater flow in wet conditions.</p> <p>Requests City include compliance with AB 325 "Model Water Efficient Landscape Ordinance" as condition of approval on individual projects in the Plan Area.</p>	<p>A WSA was prepared by EBMUD and the results are summarized in Section 4.14, <i>Utilities and Service Systems</i>. This section also includes an analysis of wastewater capacity and water efficiency requirements.</p>
California Department of Transportation (Caltrans)	<p>Requests calculation of project-generated travel demand and estimate cost of transit and active transportation improvements necessitated by proposed Specific Plan and incorporate these fees into conditions of approval.</p> <p>Include cost of needed improvements, funding sources, and a schedule plan into CIP as part of environmental review.</p> <p>Suggests redesign of Adeline Street/ Ashby Avenue intersection to reduce crosswalk lengths and improve pedestrian safety. Also suggests measures to promote smart mobility and reduce Vehicle Miles Traveled (VMT) in corridor.</p> <p>Transportation Demand Management programs should be documented with annual reports by an onsite coordinator.</p> <p>Recommends cultural resource technical studies prepared for individual projects under Specific Plan include records search, Native American consultation, field survey by a qualified archaeologist and</p>	<p>The EIR analysis is consistent with the Caltrans requirements for environmental analysis as described in their comment letter. Further, the Specific Plan includes a comprehensive set of improvements along the Adeline Corridor to improve access and safety for all travel modes.</p>

Committer	Comment/Request	Response/How and Where it was Addressed
	<p>architectural historian.            Encroachment permits may be required for work within Caltrans right of way.</p>	
<p>Alameda County Transportation Commission</p>	<p>City required to prepare Transportation Impact Analysis for the project and utilize Alameda Countywide Travel Demand Model for CMP Land Use Analysis.            Identifies Metropolitan Transportation System facilities, service operators in Plan Area and requests all potential impacts to these facilities and operators be addressed in the DEIR.</p>	<p>Comments are addressed in Section 4.12, <i>Transportation and Traffic</i>.</p>
<p>Native American Heritage Commission (NAHC)</p>	<p>Recommends consultation with all California Native American tribes traditionally and culturally affiliated with Plan Area according to AB 52 and SB 18.</p>	<p>Consultation required by AB 52 and SB 18 was carried out by the City of Berkeley. A summary of the process and an analysis of impacts to tribal cultural resources are discussed in Section 4.3, <i>Cultural Resources</i>, of this EIR. A Cultural Resources Assessment is provided as Appendix C.</p>
<p>Department of Toxic Substances Control (DTSC)</p>	<p>Recommends that the EIR identify hazardous waste sites and that the plan incorporate requirements to ensure redeveloped properties are safe for their intended uses.</p>	<p>Comments are addressed in Section 4.6, <i>Hazards and Hazardous Materials</i>.</p>
<p><b>Interested Organizations</b></p>		
<p>Ecology Center</p>	<p>The proposed plans do not provide adequate parking for farmers and vendors of the farmers market.            Requests consideration of displacement of low income residents as a result of development in Plan Area.</p>	<p>The potential redesign of the corridor that is part of the Specific Plan provides potential opportunities to improve the spatial design of the Farmer's Market site for better market operation, vendor arrangement, and customer circulation. Further, the proposed Specific Plan describes the potential long-term option for the Farmer's Market to be located on or near the Ashby BART Station if mutually agreed on by the Farmer's Market and the landowner.            Potential effects related to displacement and removal of housing are addressed in Section 4.10, <i>Population and Housing</i>.            See also subsection 1.3.1 after this table.</p>
<p>Friends of Adeline</p>	<p>Expresses concern for increased rent and displacement as a result of development under the specific plan.            Requests that additional questions concerning displacement and ethnic diversity be included in the EIR.</p>	<p>Potential effects related to displacement and removal of housing are addressed in Section 4.10, <i>Population and Housing</i>.            See subsection 1.3.1 after this table.</p>

Commenter	Comment/Request	Response/How and Where it was Addressed
<b>Public Written Comments</b>		
Aesthetics	Expresses concern for shadows potentially cast by new development.	Aesthetic impacts are discussed in Section 4.14, <i>Effects Found not to be Significant</i> , of this EIR.
Land Use	Consistency with zoning code. Concerns about development of the Ashby BART parking lot.	See Section 4.8, <i>Land Use and Planning</i> .
Population and Housing	Concerns about displacement. Concerns about population increases.	See Section 4.10, <i>Population and Housing</i> , and subsection 1.3.1 after this table.
Transportation	Concern for emergency access during natural disasters with increased population in corridor area. Concerned about reduction in vehicle traffic speed on Ashby and asks if alternate route to freeway will be provided Rejects proposed location of bike lanes in center median of Adeline and supports maintenance of bike lanes along side of road where bicyclists can easily stop to visit stores. Impacts related to vehicle miles traveled. Concerns about pedestrian safety. Requests discussion of impacts of development on pedestrian and bicycle crossings at Ward St. / 62d St/ Stanford/ Adeline/ MLK. Also impacts on bicycle traffic through corridor from Berkeley to Oakland	Comments are addressed in Section 4.6, <i>Hazards and Hazardous Materials</i> , and in Section 4.12, <i>Transportation and Traffic</i> .
Utilities and Service Systems	Concerns about adequacy of infrastructure to support development. Concerns about management of human waste.	Impacts related to wastewater systems and waste are addressed in Section 4.13, <i>Utilities and Service Systems</i> .
Economics	Concerns about effects to local retail. Concerns about effects to the farmer's market and flea market.	Supporting and reinforcing local retail and services is an important priority of the proposed Specific Plan. The strategy defined in the Plan is to support existing retail areas and historic districts, to encourage additional residents and visitors to patronize businesses, and to actively pursue programs and collaborations with the City and other stakeholders to support local businesses. The Land Use Chapter of the Plan allows and supports provision of ground-floor retail space, and the Economic Opportunity Chapter of the Plan provides policies to support retail activity and coordination with entities and stakeholders such as the Lorin Business Association.  The Specific Plan states that any future development of the Ashby BART Station "must incorporate plans for a permanent viable home for the

Commenter	Comment/Request	Response/How and Where it was Addressed
		flea market, consistent with facility needs as negotiated with the Flea Market board and vendors." The Specific Plan also includes other guidance and requirements for accommodation and coordination with the Flea Market in any future development at the Ashby BART station. The intent of the Plan is to support continued operation and viability of the Flea Market.
<b>Verbal Comments at Scoping Meeting</b>		
Population and Housing	Concerns about displacement and gentrification in Plan Area. Concerns about the provision of affordable housing.	Potential effects related to displacement and removal of housing are addressed in Section 4.10, <i>Population and Housing</i> . See subsection 1.3.1 after table.
Human Health	Concerns about physiological and psychological effects of changing demographics in Plan Area.	See subsection 1.3.1 after table.
Greenhouse Gases	Concerns that VMT will increase for current residents who are displaced.	See section 4.12, <i>Transportation and Traffic</i> .
Project Scope	Concerns that a proposed project has not been fully defined.	See Section 2, <i>Project Description</i> , for a description of Specific Plan components.
Community Space	Concerns about the provision of open space and spaces for community gathering.	See subsection 1.3.1 after table.
Note: Complete copies of the NOP comments received are included in Appendix F of this report.		

### 1.3.1 Impacts Resulting from Gentrification and Displacement

As shown in Table 1-1, several commenters raised concerns about gentrification and displacement. The focus of CEQA is on physical environmental impacts, such as impacts of a project on air quality, water quality, or wildlife habitat. In general, socioeconomic effects are beyond the scope of the CEQA environmental review process unless a link can be established between anticipated socioeconomic effects of a proposed action and adverse physical environmental impacts (CEQA Guidelines Section 15131(a), CEQA Section 21082.2). A specific discussion of impacts to population and housing, including the physical effects associated with displacement, is provided in Section 4.10, *Population and Housing*, of the EIR.

Several commenters suggested that gentrification and displacement already occur within the Plan Area, which has historically housed a diverse population, and raised concerns that the Plan would not adequately address this ongoing issue. Commenters also discussed the psychological effects that displacement, demographic changes and lack of affordability may have on residents in the Plan Area. While these discussions are beyond the scope of CEQA, the Specific Plan acknowledges that affordability and displacement are challenges the City of Berkeley is currently facing and proposes new policies and strategies that, along with existing City Plans and Programs, are intended to protect existing affordable housing, discourage displacement, and create new supplies of affordable housing. Key objectives of

the proposed Specific Plan aim to foster equitable development, including a variety of housing types, serving a range of income levels including those at very low income levels and who are at risk of displacement. The Specific Plan proposes policies and strategies to prioritize and maximize affordable housing in the Adeline Corridor. These policies and strategies include a goal that 50 percent of all new housing units be affordable at range of income levels; prioritizing publicly owned land for affordable housing; adopting new zoning regulations that create incentives for on-site affordable housing units; continuing to find new funding sources to fund affordable housing; and supporting and strengthening tenant protections (see Chapter 4 of the Plan). Overall, the proposed Specific Plan is intended to provide stronger and more effective measures to support diverse and affordable neighborhoods in the Plan Area.

Several commenters also discussed their desire to preserve the Plan Area's existing cultural character and the need to provide open space and public spaces where the community can gather, and many mentioned the flea market as an important part of the community that supports these goals. (A specific discussion of impacts to cultural resources may be found in Section 4.3, *Cultural Resources*). While these comments also do not pertain to the scope of the Draft EIR as set forth in the CEQA Guidelines, they will be considered by City decision makers in their deliberations on the proposed Plan. The Plan also includes goals that address these concerns, including context-specific designs for new development and provision of community benefits for higher density projects. Moreover, the Plan includes a policy with several objectives to guide future new development at the Ashby BART subarea. One of these objectives calls for any new development at the west parking lot to include a large civic plaza that could accommodate the Berkeley Flea Market, or a potential relocated Farmers Market, other special events, as well as other public spaces.

## 1.4 EIR Content

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*. In-text citations include the last name of the author or agency abbreviation and the year with no comma in between [e.g.: (City of Berkeley 2012)]. If there are multiple citations with the same author and year, then a number is added after the year [e.g.: (City of Berkeley 2012a; City of Berkeley 2012b)]. In-text citations correlate to the list in Section 7.

The alternatives section of the EIR (Section 6) was prepared in accordance with Section 15126.6 of the *CEQA Guidelines* 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 Plan Area.

The level of detail contained throughout this EIR is consistent with the requirements of CEQA and applicable court decisions. Section 15151 of the *CEQA Guidelines* 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.”

## 1.5 Lead, Responsible, and Trustee Agencies

The *CEQA Guidelines* define lead, responsible and trustee agencies. The City of Berkeley is the lead agency for this EIR because it holds principal responsibility for approving the proposed Specific Plan.

“Responsible Agencies,” are other agencies that are responsible for carrying out/implementing a specific component of the proposed Specific Plan or for approving a project (such as an annexation) that implements the goals and policies of the proposed Specific Plan. Section 15381 of the *State CEQA Guidelines* defines a “responsible agency” as:

A public agency which proposes to carry out or approve a project, for which a lead agency is preparing or has prepared an EIR or Negative Declaration. For purposes of CEQA, responsible agencies include all public agencies other than the lead agency that have discretionary approval authority over the project.

There are no responsible agencies for the proposed Specific Plan. However, State, regional and/or local government permits may be required for development under the proposed Specific Plan, whether or not they are explicitly listed below. State and regional agencies that may have jurisdiction over some aspects include (but are not limited to):

- California Department of Fish and Wildlife
- San Francisco Bay Regional Water Quality Control Board
- California Department of Transportation (Caltrans)
- Department of Toxic Substances Control
- Bay Area Rapid Transit (BART)

Trustee agencies have jurisdiction over certain resources held in trust for the people of California but do not have a legal authority over approving or carrying out the project. *CEQA Guidelines* Section 15386 designates four agencies as trustee agencies: the California Department of Fish and Wildlife with regards to fish and wildlife, native plants designated as rare or endangered, game refuges, and ecological reserves; the State Lands Commission, with regard to State-owned “sovereign” lands, such as the beds of navigable waters and State school lands; the California Department of Parks and Recreation, with regard to units of the State park system; and, the University of California, with regard to sites within the Natural Land and Water Reserves System.

There are no trustee agencies for the proposed Specific Plan.

## 1.6 Intended Uses of the EIR

This EIR is an informational document for use in the City’s review and consideration of the Adeline Corridor Specific Plan. It is to be used to evaluate the impacts of implementing the proposed Specific Plan and to ensure that the Plan includes policies that mitigate significant

impacts to the greatest extent possible. The proposed Specific Plan will guide subsequent actions taken by the City in its review of new development projects within the Plan Area and its establishment of new and/or revised programs for the Plan Area. This EIR discloses the possible environmental consequences associated with the proposed Specific Plan. The information and analysis in this EIR will be used by the Berkeley Planning Commission, City Council and the general public.

## 1.7 Environmental Review Process

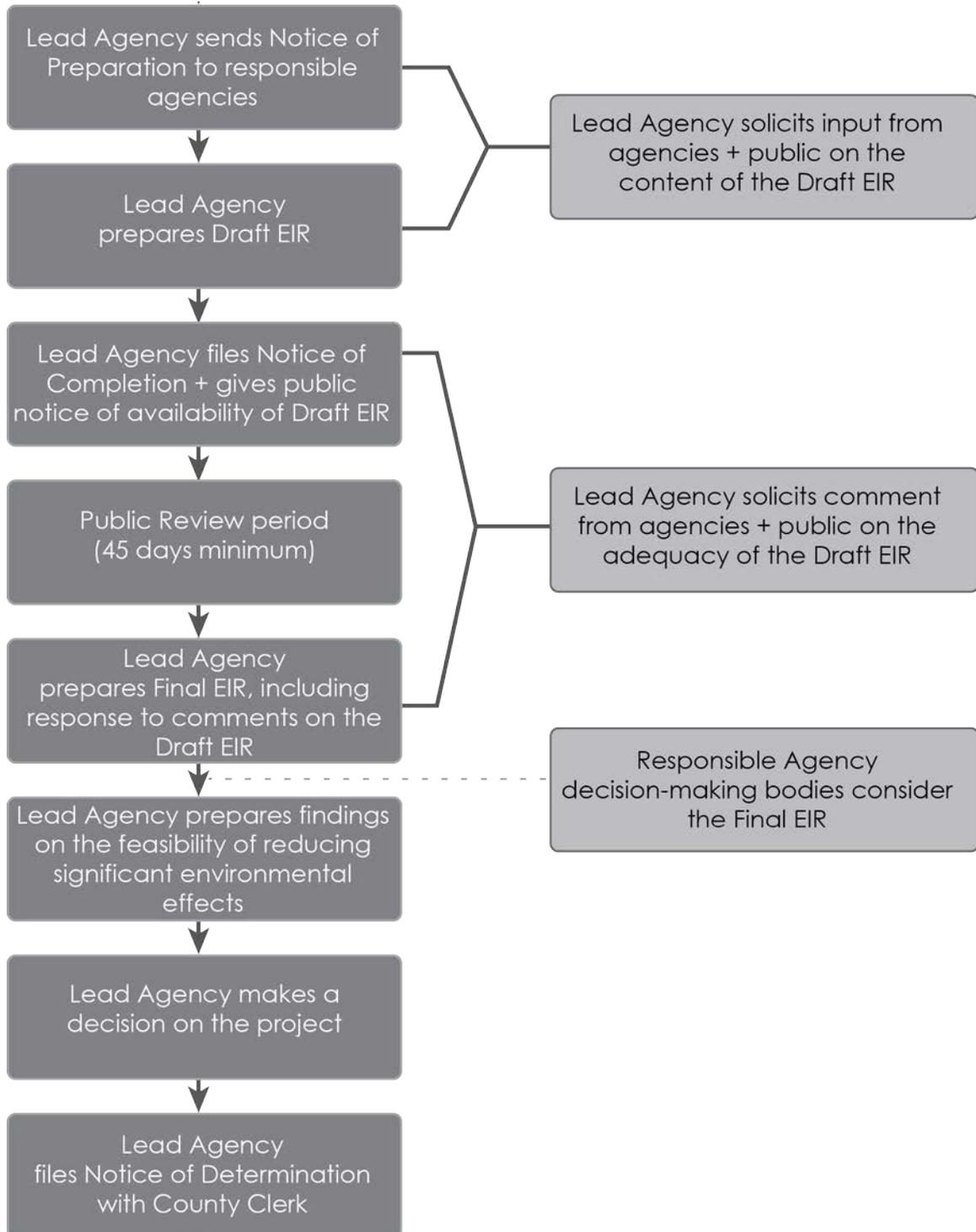
This Draft EIR will be circulated for public review and comment for a minimum of 45 days. A copy of the Draft EIR can be reviewed at the Berkeley City Clerk's office during regular business hours, located at 2180 Milvia Street, 1<sup>st</sup> floor, Berkeley, CA 94707 and on the City's website at: <https://www.cityofberkeley.info/AdelineCorridor/>. Comments may be provided in writing to Alisa Shen, Principal Planner, Planning and Development Department, 1947 Center Street, 2<sup>nd</sup> Floor Berkeley, CA 94704, or send via email to [ashen@cityofberkeley.info](mailto:ashen@cityofberkeley.info) with "Adeline Corridor Specific Plan Draft EIR" as the subject.

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 Berkeley) 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).** 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



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## 2 Project Description

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The proposed project involves the adoption of the Adeline Corridor Specific Plan (“Specific Plan” or “Plan”). The proposed Specific Plan provides a vision and planning framework for future growth and development in the Adeline Corridor Plan Area (“Plan Area”). The Plan provides a comprehensive vision for the Plan Area along with goals, policies, strategies and development regulations to guide the Plan Area’s future growth in an equitable manner that benefits the existing community.

This section describes the proposed Specific Plan, including the Lead Agency/Project Applicant, characteristics of the Plan Area, the key components of the Specific Plan, potential buildout in the Plan Area over the time horizon of the Plan (e.g. through 2040), and the approvals needed to adopt the proposed Specific Plan. Actual development under the provisions of the Plan would require subsequent approvals and permits including consideration of whether the environmental impacts of the project are addressed in this EIR or whether further environmental review is required.

### 2.1 Lead Agency/Project Applicant

City of Berkeley  
Planning and Development Department  
1947 Center Street, 2nd Floor  
Berkeley, California 94704  
Contact: Alisa Shen, (510) 981-7409

### 2.2 Location and Setting

#### Local Setting

The Adeline Corridor Specific Plan Area (“Plan Area”) is located in the southern portion of Berkeley and extends approximately 1.3 miles north from the Berkeley/Oakland border along Adeline Street and a portion of Shattuck Avenue. It serves as an important transition between the city of Oakland (to the south) and Downtown Berkeley (to the north). The Plan Area encompasses approximately 86 acres of land. It contains a wide range of commercial, civic, cultural and residential land uses as well as the Ashby BART Station, a regional transit facility, located in the central/southern portion of the Plan Area. In addition to BART, there is also frequent AC Transit bus service throughout the Plan Area via multiple routes. The northern Plan Area boundary is also within 0.5 mile of the Downtown Berkeley BART station. Figure 2-1 shows the Plan Area’s regional location and Figure 2-2 shows the boundaries of the Plan Area.

The Plan Area is characterized by a varied street environment and approximately 38 acres (44 percent) of right-of-way (e.g. streets and sidewalks) used for multiple modes of transportation. Of the remaining area, approximately 19 acres are developed with commercial uses, 11 acres are developed with public, civic, or institutional uses, 9 acres are developed with residential uses, and the remaining area is developed with parking, warehouse or mixed uses, or is vacant.

Figure 2-1 Regional Location

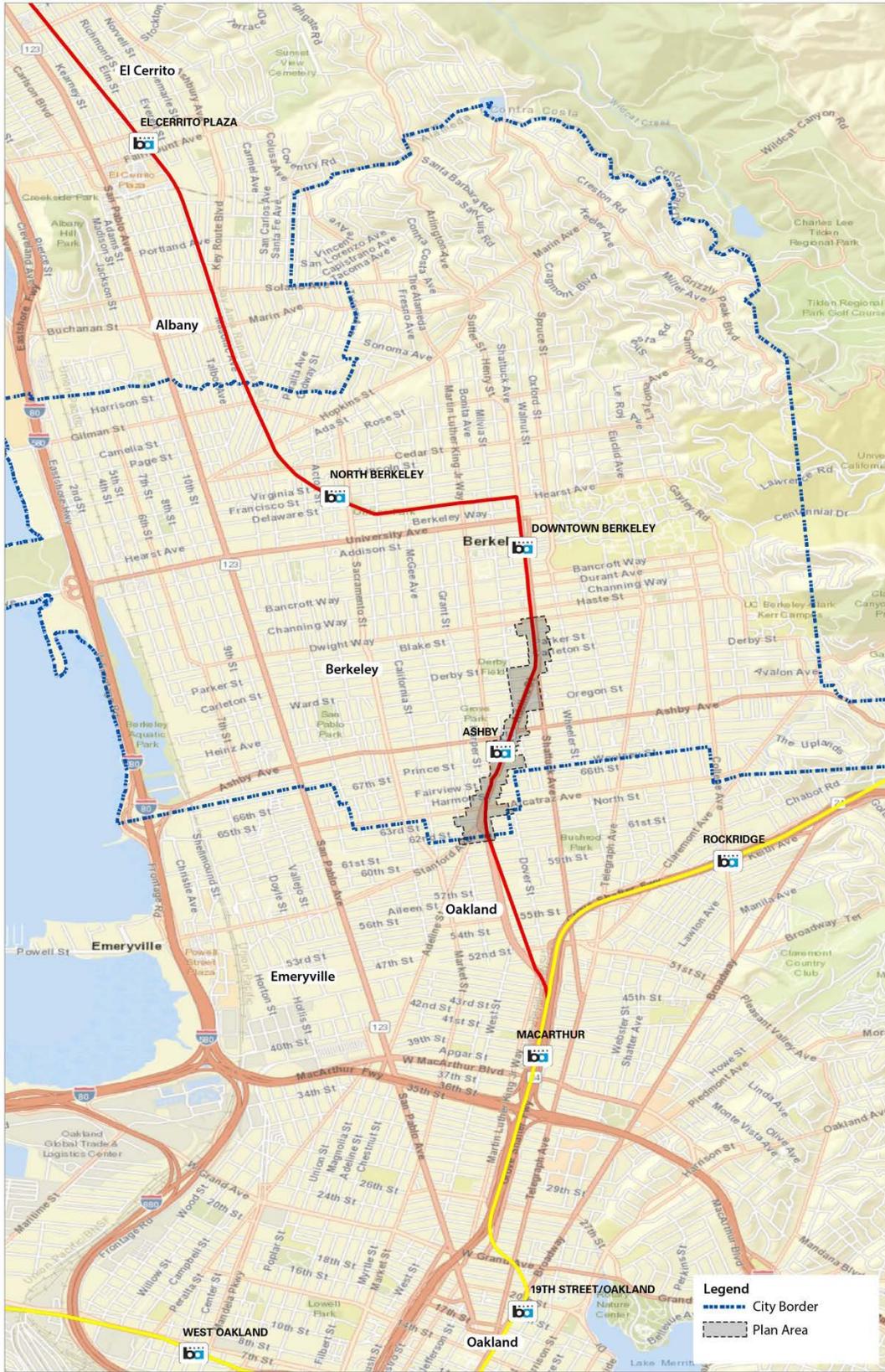
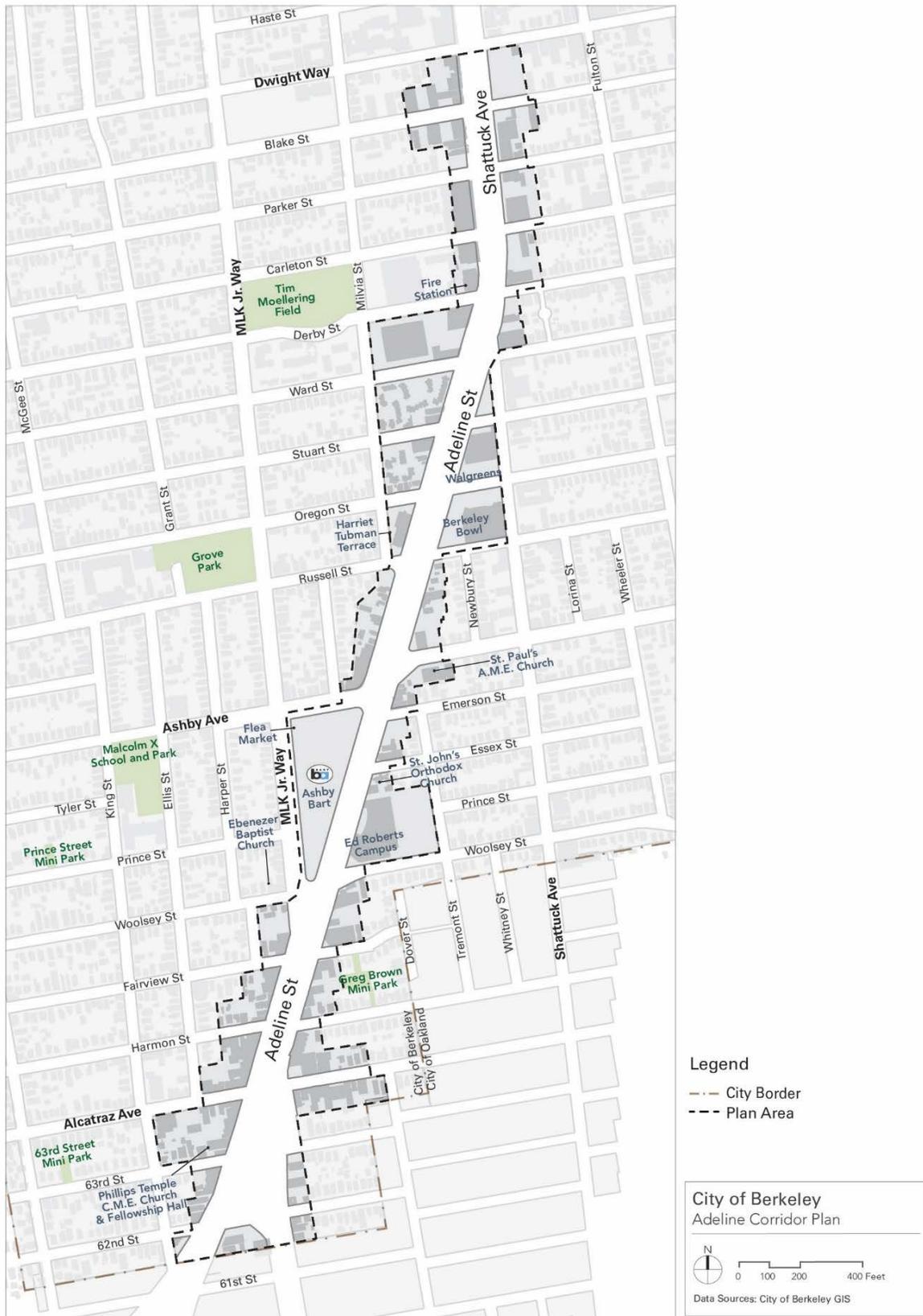


Figure 2-2 Plan Area Location



The Plan Area slopes in a southwesterly direction from an elevation of approximately 167 feet above sea level at the intersection of Shattuck Avenue and Dwight Way to approximately 85 feet above sea level near the Berkeley/Oakland City Limit. With an average slope of approximately 1.2 percent, the Plan Area is conducive to walking and bicycling.

## Surrounding Land Uses

The majority of land surrounding the Plan Area is dedicated to residential uses and is characterized by well-established neighborhoods with a mix of single-family and small multi-family developments. These residential areas are occasionally traversed by streets that are roughly parallel with or intersect Shattuck Avenue and Adeline Street (e.g. Martin Luther King Jr. Way, Sacramento Street, Telegraph Avenue, Ashby Avenue and Alcatraz Avenue) and that have concentrations of commercial/mixed-use development. To the north and northeast of the Plan Area, where the Downtown and UC Berkeley Campus are located, land uses are characterized by more intensely developed residential, office, and institutional uses.

### 2.2.1 Regulatory Setting

#### City of Berkeley General Plan

Berkeley's General Plan, adopted in 2001, is a comprehensive, and long-range statement of community priorities and values developed to guide public decision-making in future years. The Plan's goals are implemented through decisions and actions consistent with the objectives, policies, and actions of each of the nine Elements: Land Use, Transportation, Housing, Disaster Preparedness & Safety, Open Space & Recreation, Environmental Management, Economic Development and Employment, Urban Design & Preservation and Citizen Participation. These elements contain goals, policies, and actions that apply to all land within City limits.

The Land Use Element categorizes areas in Berkeley into different land use classifications and includes a Land Use Diagram that maps these classifications. As noted specifically in the Land Use Element, the Diagram "depicts the general distribution, location, and density of land uses in Berkeley based upon the policies of the General Plan and existing land uses" but is not intended to portray the specific use or other development regulations of each parcel of land, which is determined by the City's Zoning Ordinance. The General Plan land use designations for the Plan Area are described in Subsection 2.2.2.

Under Government Code Section 65450 et seq., a specific plan implements and must be consistent with the governing general plan. However, a specific plan is a separate document from the general plan and contains a greater degree of detail, including functions of zoning, land use regulations, design standards, and capital improvement plans.

#### City of Berkeley Zoning Ordinance

The City's Zoning Ordinance and associated Zoning map identifies specific zoning districts in Berkeley and development standards that apply to each district. The zoning districts in the Plan Area are described in Subsection 2.2.2.

## South Berkeley Area Plan

The South Berkeley Area Plan (SBAP), adopted in 1990, covers a geographic area that includes the Plan Area. The SBAP includes the area bounded by Dwight Way to the north, Shattuck Avenue to the east, San Pablo to the west, and the Berkeley-Oakland border to the south. The SBAP expresses two overarching goals: “the retention and encouragement of the existing and vital Black community, and the revitalization of the community’s economic base.”

## South Shattuck Avenue Strategic Plan

The South Shattuck Avenue Strategic Plan (SSSP), adopted in 1998, also covers a geographic area that includes part of the Plan Area. It includes properties along Shattuck Avenue between Dwight Way to the north and Ashby Avenue to the south, and between Milvia Street to the west and Ellsworth Street to the East. The SSSP was intended to build upon the goals of the SBAP. The SSASP includes four subject areas: economic development, urban design, residential blight abatement, and transportation.

## Relationship to Existing Plans and Ordinances

The proposed Specific Plan is intended to be adopted concurrently with amendments to the City’s General Plan and Zoning Ordinance, which would provide the implementing regulatory framework for future land use and development decisions. The Specific Plan would serve as an extension of the City of Berkeley General Plan, providing both policy and regulatory direction specific to the Plan Area. It replaces and supersedes previous plans for the area within the Adeline Corridor Plan Area Boundary, including the 1990 South Berkeley Area Plan, the 1998 South Shattuck Plan, and other previous studies and plans.

The amendments to the General Plan and to the City of Berkeley Municipal Code (“Municipal Code”) will be adopted independently of the Specific Plan to allow for future amendments of the General Plan and Municipal Code without requiring an amendment of the Specific Plan. Upon adoption, the goals and policies in this Plan will supersede goals and policies in the General Plan with respect to the Plan Area. In situations where policies or standards relating to a particular subject are not provided in the Specific Plan, the existing policies of the City’s General Plan and Municipal Code will continue to apply. When future development proposals are brought before the City, staff and decision-makers will use the Specific Plan to guide project review. Projects will be evaluated for consistency with the intent of the Plan policies for conformance with development regulations and design guidelines.

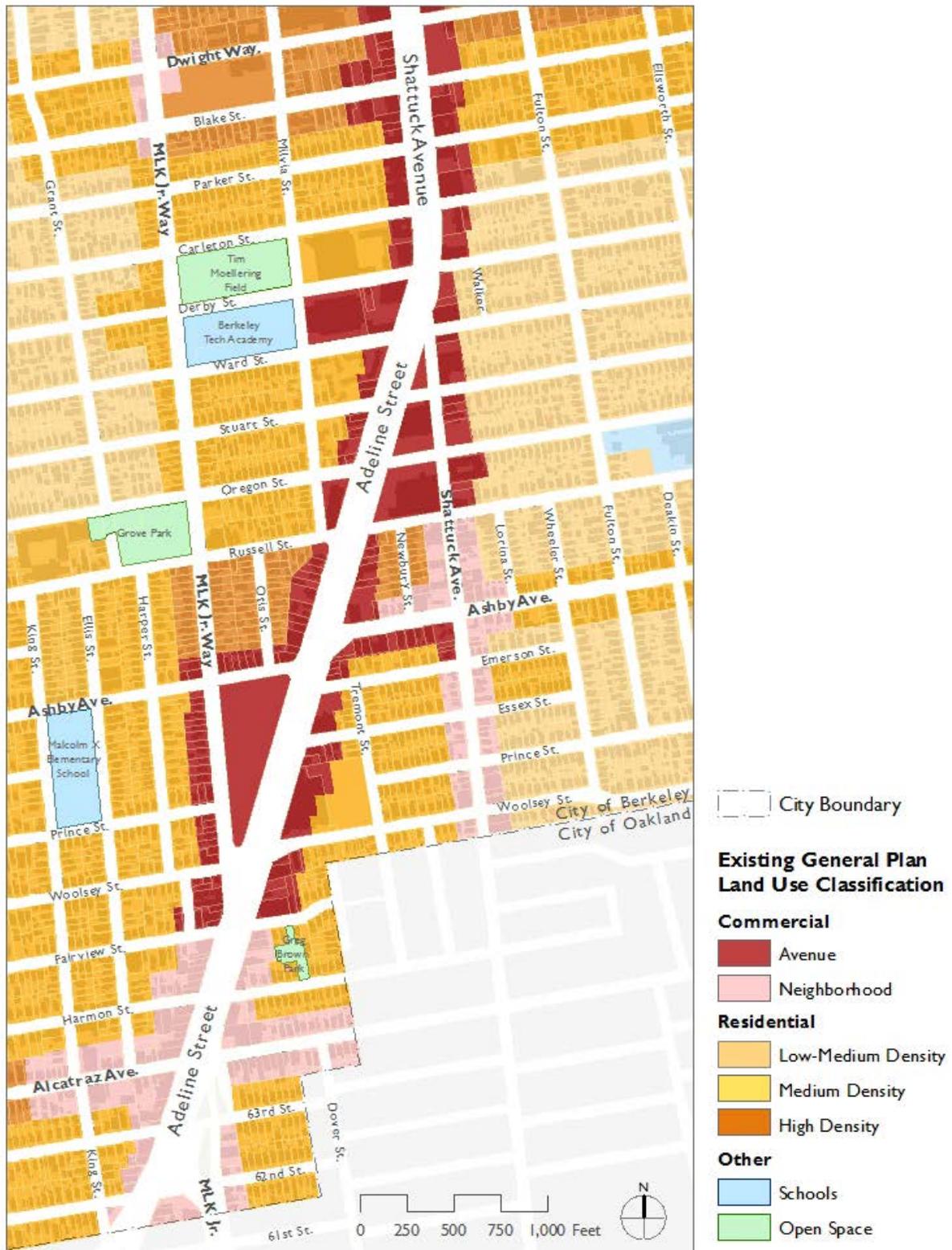
### 2.2.2 Existing Plan Area Characteristics

This section summarizes the land use and development conditions in the Plan Area to establish a general setting against which to describe the proposed Specific Plan. More detailed description and illustrations of existing conditions are provided in the relevant environmental analysis sections in Section 4, *Environmental Impact Analysis*, of this EIR.

## Current Land Use Designation and Zoning

As shown on Figure 2-3, most of the Plan Area (approximately 63 percent) falls within in the *Avenue Commercial* General Plan land use designation. As described in the Land Use Element of the City’s General Plan, the *Avenue Commercial* land use designation is typically located on wide streets that are served by transit, including BART, have commercial uses

Figure 2-3 Existing Plan Area General Plan Land Use Designation



that are regional or local-serving, and densities that are intended to create a pedestrian-oriented environment. A smaller portion at the southern end of the Plan area (approximately 25 percent) falls within the *Neighborhood Commercial* General Plan land use designation. The General Plan describes the *Neighborhood Commercial* land use designation as intended for areas characterized by pedestrian-oriented, neighborhood-serving commercial development and mixed use (e.g. multi-family residential, office, and community service) and institutional uses. Approximately 13 percent of the Plan Area located at the eastern and western edges of the Plan Area that do not abut Shattuck Avenue or Adeline Street has a Medium Density Residential land use designation.<sup>1</sup>

Areas immediately surrounding the Plan Area to the east and west are predominantly designated as Medium Density Residential, with the exception of the area immediately to the east of the South Shattuck Avenue commercial area which falls within the Low Density Residential land use designation and areas surrounding the northern Plan Area and a section to the east and west, between Ashby Avenue and Russell Streets which are designated as High Density Residential.

As shown on Figure 2-4, four zoning districts are within the Plan Area. Most of the Plan Area is zoned as South Area Commercial (C-SA). The remaining Plan Area (less than 13 percent) is residentially zoned as Restricted Multi-Family Residential (R-2A); Multiple-Family Residential (R-3) and Restricted Two-Family Residential (R-2).

## Existing Land Uses

Much of the Plan Area is used for multiple modes of transportation with 38 acres (44 percent of the total land area) devoted to public right-of-way (e.g. streets and sidewalks). The remaining 47 acres (56 percent of the total land area) is used for a variety of commercial, residential and public/civic land uses.

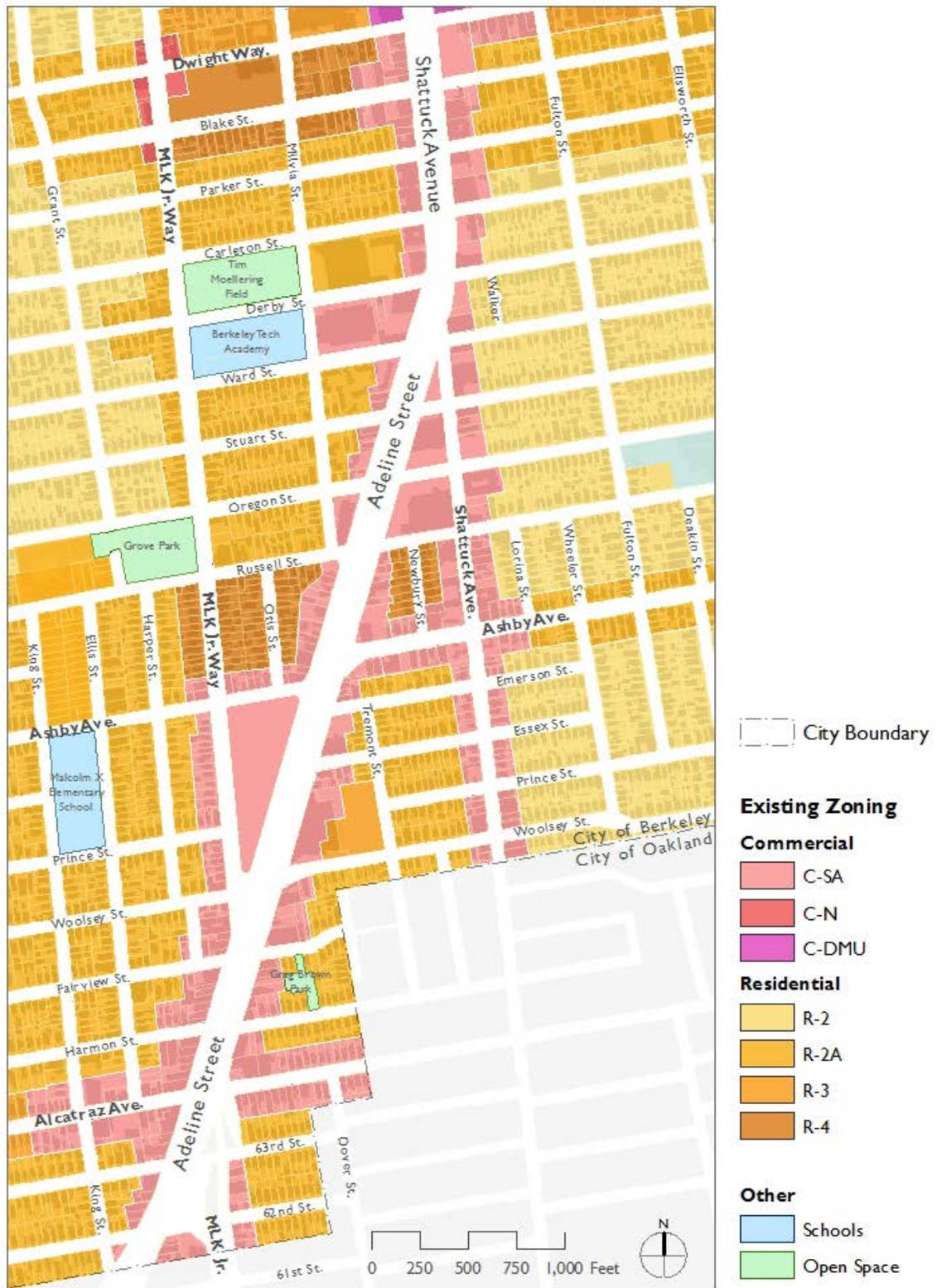
Commercial uses such as shops, restaurants, services, and offices are dominant in the Plan Area, occupying over one-third of the total area, but residential, public and civic uses are also prevalent. The commercial uses range in scale from a large floor plate uses such as a supermarket (e.g. Berkeley Bowl), large pharmacy/retail stores (e.g. Sports Basement, Walgreens) and car dealerships, in addition to small scale retail and restaurant/cafes. There is a cluster of antiques/furniture stores around the intersection of Ashby Avenue and Adeline Street. In addition to locally-owned food and beverage outlets, personal services such as yoga studios, hair salons and laundromats are scattered throughout the Plan Area.

A wide variety of housing types are present in the Plan Area including single-family residences and second-story apartments over retail, as well as larger multi-family buildings such as the 155-unit Parker Place development on Shattuck Avenue, the 91-unit Harriet Tubman Terrace, and the Savo Island Cooperative development on Adeline Street. However, the vast majority of residential development consists of smaller-scale multi-family buildings, which make up 17 percent of the total built square footage, compared with single-family residences, which comprise only 2.7 percent of the land uses. Land uses, particularly residential and commercial, are often mixed vertically (in the same structure).

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<sup>1</sup> 0.2% of the Plan Area (or 0.10 acre) falls within the Low Density General Plan land use designation.

Figure 2-4 Existing Plan Area Zoning



There is a high concentration of public, non-profit and other community-serving facilities located in and around the Plan Area. Public and civic uses in the Plan Area include the Ashby BART station, a U.S. Post Office, a City of Berkeley Fire Station and other City mental health and housing services offices. Other public and civic uses in the Plan Area include a large range of places of worship, social, health and community services. The largest of these is the Ed Roberts Campus (ERC), a nonprofit that has been formed by disability organizations active in the Independent Living Movement. This facility is an approximately 93,000 square-foot, universally-designed, transit-oriented center that includes fully accessible exhibition space, community meeting rooms, a child development center, fitness center, offices for non-profit organizations and vocational training facilities, as well as a 119-space structured parking garage. It was built on land that was formerly used as a surface parking lot for the Ashby BART station.

Additionally, the Plan Area is home to cultural, arts and long-standing outdoor markets and festival uses. Small, independent visual and performing arts, and cultural establishments, such as the Black Repertory Group Theater, are located throughout the Plan Area. There are also nearby music and performing arts uses such as Shotgun Players theater, La Pena Cultural Center, and the Starry Plough located on Shattuck Avenue (between Prince and Woolsey Streets) that contribute to the larger area's identity as an arts and theater district. The Plan Area is also home to two outdoor markets: Berkeley Flea Market, which has operated on the weekends on the western parking lot of the Ashby BART station since 1975, and the Ecology Center's Tuesday Farmer's Market, which operates in the parking/street area on Adeline and 63rd Streets on Tuesdays from 2pm – 6pm.<sup>2</sup> Since 1987, a five-block stretch of Adeline Street (from Ashby to Alcatraz Avenues) is closed to traffic one day a year to host Berkeley's annual Juneteenth Festival.

### Existing Height and Development Pattern

The overall development character of the Plan Area consists primarily of one- and two-story buildings with active commercial ground floor uses. Many structures include second-story residential or office use. Some taller structures are present, including the five-story Parker Place (mixed-use residential with ground floor commercial) and Central Self Storage buildings on Shattuck Avenue in the northern part of the Plan Area and the six-story Harriet Tubman Terrace residential complex on Adeline Street. Properties on both Shattuck Avenue and Adeline Street generally include more traditional, pedestrian-friendly urban form with buildings built to the property line and/or sidewalk, creating a largely continuous "street wall" of buildings (as opposed to having the building set back with surface parking in front). There are exceptions to this on both streets where surface parking separates buildings from the street, as can be seen adjacent to the Ashby BART station parking lot on MLK Jr. Way and at some of the larger commercial properties in the Plan Area.

Building sizes range from just under 1,000 square feet to over 90,000 square feet. The largest building at 93,460 square feet is the Ed Roberts Campus. Smaller buildings are typically residential structures and small retail establishments. The most prevalent type of building within the Plan Area is mixed-use, which makes up 22.6 percent of the total built environment. The next most common building type is single-use commercial, which makes up 18 percent of the built environment. Of the 235,327 square feet of single-use commercial buildings, nearly 80 percent of that is comprised of single-story retail stores along Adeline Street.

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<sup>2</sup> The Ecology Center Farmers Market operated at Martin Luther King Jr. Way and Derby Streets for 25 years before moving to its current location on Adeline and 63rd in 2012.

## 2.3 Specific Plan Components

The proposed Specific Plan provides a vision and planning framework for future growth and development in the approximately 86-acre area in South Berkeley. The Specific Plan includes the following chapters:

- The **Introduction** chapter (Chapter 1) describes the Plan Area conditions and context, the purpose of the document and the community engagement and plan development process.
- The **Vision and Planning Framework** chapter (Chapter 2) provides the long-term vision and guiding principles for the Plan Area.
- The **Land Use** chapter (Chapter 3) provides policy direction and development standards for the land uses and building forms envisioned in the Plan Area. These policies and standards provide the basis for proposed changes to zoning regulations that would apply to future private and public development projects and public improvements.
- The **Housing Affordability** chapter (Chapter 4) provides policies and strategies to create new housing, including housing that is affordable to people at the lowest income levels and to preserve existing affordable housing and protect tenants at high risk of displacement.
- The **Economic Opportunity** chapter (Chapter 5) includes strategies to foster the economic opportunities of residents and businesses through capacity-building of existing and new business organizations and an environment for commerce to thrive and grow.
- The **Transportation** chapter (Chapter 6) includes policies and proposed improvements intended to improve safety, mobility, and accessibility for pedestrians, cyclists, transit and cars. The proposed improvements can be implemented separately or in conjunction with a long-term conceptual re-design of the right-of-way.
- The **Public Space** chapter (Chapter 7) presents long-term design concepts and near-term strategies intended to improve connections along and across the corridor and to provide attractive and inclusive public space for community members to gather and interact.
- The **Implementation** chapter (Chapter 8) outlines implementation measures or “next steps” to achieve the long-term vision of the Adeline Corridor Specific Plan.

### 2.3.1 Vision and Planning Framework

The Specific Plan seeks to articulate and implement a long-range vision for the Plan Area by establishing a broad set of goals, principles, and strategies. The Plan’s Vision Statement expresses the desired outcome from implementation of the Specific Plan.

Over the next 20 years, the Adeline Corridor will become a national model for equitable development. Existing affordable housing will be conserved, while new affordable and market rate housing for a range of income levels will be added. The Corridor will provide local economic opportunity through independent businesses, community non-profits, arts organizations, community markets, and an array of merchants and service providers. It will feature public spaces that are walkable, bikeable, green, and accessible to persons of all ages and abilities. It will be the center of a healthy community that cares for its most vulnerable residents, cherishes its elders, nurtures its youth, and welcomes households of all types. It will be a place where the people, places and institutions that have made South Berkeley what it is today are not only recognized---but celebrated. It will be a place where all people can thrive.

Five broad, interrelated goals serve as the framework for the policies, strategies and actions that are presented in the five corresponding topical chapters of the Plan and summarized below:

- Preserve the unique character and cultural legacy of the Adeline Corridor, sustaining the community as a place where all people can live, work, play, learn, worship, dine, and thrive.
- Foster economic opportunity for South Berkeley residents and businesses by facilitating job training and workforce development, active community spaces, and a thriving environment for commerce along the Adeline Street /South Shattuck Corridor.
- Promote equitable access to housing by producing new affordable housing, preserving existing affordable housing, and preventing displacement.
- Provide safe, equitable transportation options that meet the mobility needs of all residents, regardless of age, means and abilities, and that further the attainment of the City's greenhouse gas reduction goals.
- Provide safe, sustainable, healthy and inclusive public spaces that encourage social interaction, provide opportunities for recreation and environmental health, and support active community life in South Berkeley.

### 2.3.2 Land Use (Plan Chapter 3)

The Land Use chapter of the Specific Plan describes an overarching land use concept for a “complete neighborhood” that includes a diverse mix of uses that meet the day to day needs of residents. An important element of a complete neighborhood is that it is walkable, bikeable, and meets the needs of people of all ages and abilities.

This concept is closely interrelated with other Plan components in that it supports development at intensities and densities that facilitate more housing at a range of income levels near transit. Transit-oriented development can reduce the need to drive, which in turn helps reduce the greenhouse gas emissions that cause global climate change.

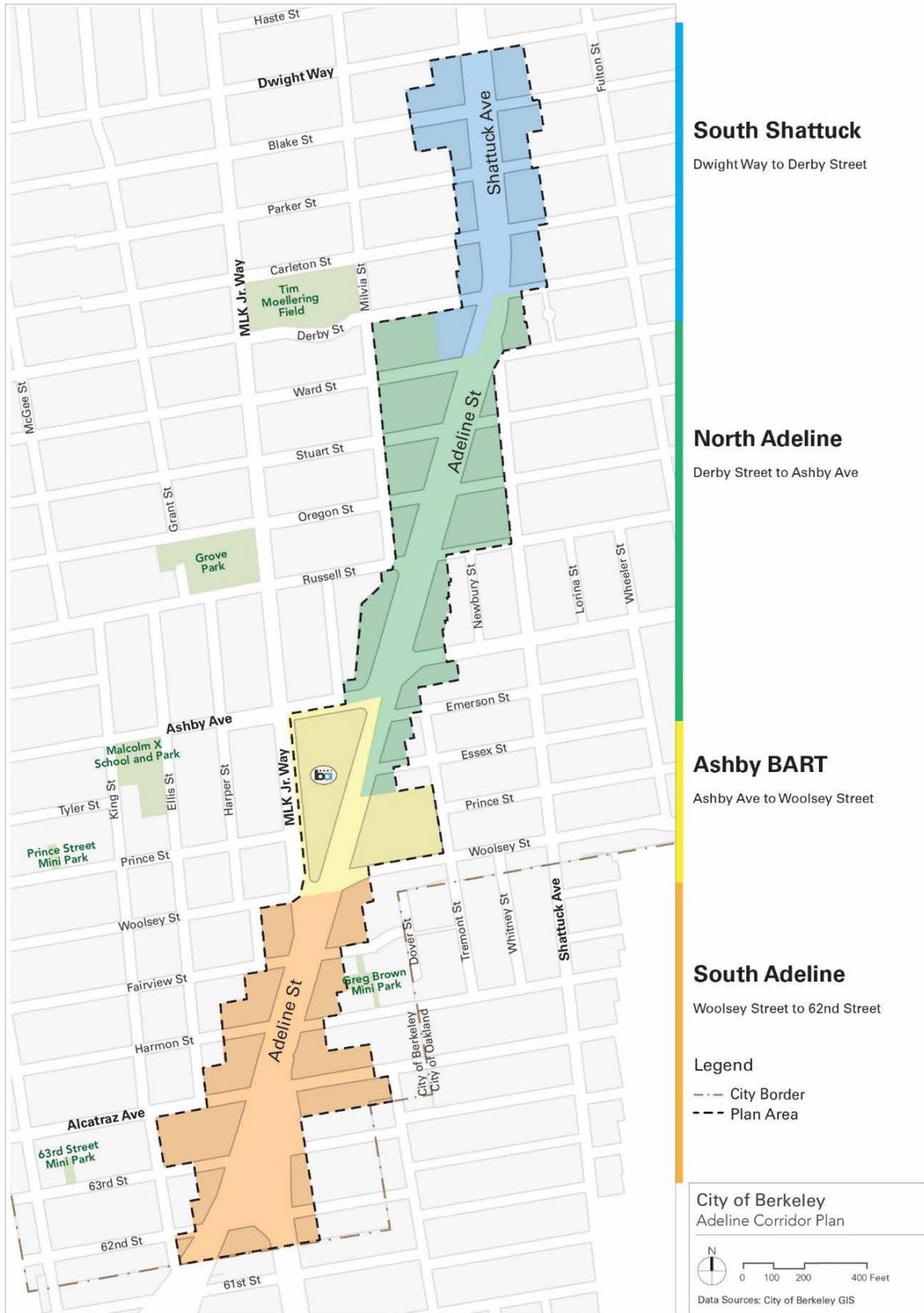
#### Subarea Land Use Concepts

The Specific Plan divides the Plan Area into four Subareas: South Shattuck, North Adeline, Ashby BART and South Adeline, shown on Figure 2-5. Each of these subareas is proposed to have a different land use focus that responds to different site conditions and development contexts. Each is described in more detail below.

##### *South Shattuck (from Dwight Way to Derby Street)*

The South Shattuck Subarea is the gateway to Downtown Berkeley. It is envisioned as an attractive, mixed-use pedestrian-oriented area with higher intensity infill housing. Higher densities are facilitated by this area's proximity to the more intensively developed Downtown area and the University of California campus, and the availability of relatively large, deep parcels. This allows taller buildings to be massed and oriented towards Shattuck Avenue, while transitioning down to lower scaled buildings at the rear of parcels. Residents in the South Shattuck Subarea would be able to easily patronize businesses along Adeline Street as well as Downtown, and are within walking distance of both Ashby BART and Downtown Berkeley BART.

Figure 2-5 Plan Area Subareas



*North Adeline (from Derby Street to Ashby Avenue/Essex Street)*

The Specific Plan envisions this subarea as continuing to support a range of land uses, including retail and services, housing and small-scale office. Existing uses are highly varied, including larger floorplate commercial uses such as the highly-visited Berkeley Bowl and Walgreens, and the 6-story Harriet Tubman senior housing development north of Russell Street. The area also includes smaller parcel sizes and lower-scale development south of Russell Street, including historic buildings and portions of State Historic districts. The area around the intersection of Adeline and Ashby include a cluster of antique and furniture stores that comprise the “Ashby Antiques District.”

*Ashby BART Station Area*

The Ashby BART Subarea includes two surface parking lots that serve the underground Ashby BART station. It also includes the Ed Roberts Campus (ERC), a 93,000 square foot universally-designed, transit-oriented center that includes fully accessible office space for organizations serving the disabled/senior community, as well as a 119-space structured parking garage. The ERC was built on land that was formerly used as a surface parking lot for the Ashby BART station. The Berkeley Flea Market has used the west parking lot on weekends since 1975.

The Specific Plan envisions further collaboration and planning between the City, BART, the Berkeley Flea Market, the Ecology Center and the community to further explore possibilities for the Ashby BART station area. The area has the capacity for a substantial amount of affordable housing and open space, including a plaza that could accommodate the Berkeley Flea Market and potentially also the Ecology Center Farmers Market. It also has the potential for other uses/amenities desired by the community, such as an African American Holistic Resource Center, affordable space for community non-profits, and other community facilities (e.g. sports or recreation center).

*South Adeline (Woolsey Street to Berkeley/Oakland border)*

This Subarea is a southern gateway to the City of Berkeley and includes the Lorin Business District with a mix of stores, services, community institutions and several affordable housing developments. The Specific Plan envisions this diverse mix of uses to continue over the time horizon of this Plan. The Plan’s focus in this area is on preserving the finer-grain, historic urban fabric and context-sensitive infill development. The area’s relatively small parcels and strong historic fabric mean future development is likely to be smaller in scale compared to elsewhere along the corridor, and should have thoughtful, context-sensitive design that complements the Lorin District. Reuse and restoration of existing historic and culturally significant properties is a particular priority, especially for the concentration of landmarked and contributing historic buildings on the south side of Adeline.

**Proposed General Plan and Zoning Changes<sup>3</sup>**

The Adeline Corridor Specific Plan is intended to be adopted concurrently with amendments to the City’s General Plan and Berkeley Municipal Code, which would provide the implementing regulatory framework that would guide future land use and development decisions in the Plan Area. This Specific Plan was written to be consistent with, and serve as an extension of, the City of Berkeley General Plan, by providing both policy and

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<sup>3</sup> The proposed General Plan, zoning and development standards and guidelines have not yet been approved or adopted by the City’s various advisory and elected bodies, and are therefore, subject to change.

regulatory direction. The Plan would work in conjunction with the Berkeley Municipal Code to regulate new development in the Plan Area.

Specifically, implementation of the Specific Plan would require amendments to the General Plan and to the City of Berkeley Municipal Code. The General Plan has three separate land use designations for the Specific Plan Area, as described in the Setting section above. The City's Zoning Code has three zones for the Plan Area. With adoption of the Specific Plan, a new "Adeline Corridor Mixed Use" General Plan Land Use Classification would be adopted. This new Land Use Classification would include all parcels within the Plan Area. As part of the creation of the Specific Plan, a new General Plan Land Use classification is proposed so that it and the General Plan would be consistent (with adoption of the proposed Plan and General Plan Amendment). All parcels within the Plan Area boundary that are currently mapped as Avenue Commercial and Neighborhood Commercial will be designated with the new "Adeline Corridor Mixed Use" General Plan land use classification.

In addition, a new zoning district, anticipated to be called "C-Adeline Corridor" would be created for adoption into the municipal zoning code. Like the General Plan designation, the C-AC zone would include all parcels within Plan Area. The zone would incorporate zoning-level development standards consistent with Specific Plan guidance for topics such as height, FAR, density, setbacks, lot coverage, usable open space, and parking standards. As shown in Table 2-1, the Specific Plan establishes base development standards by sub-area, including for the topics of height, density, lot coverage, required setbacks, and usable open space. In addition, as shown in Table 2-2, Table 2-3, and Table 2-4, the Specific Plan allows for increased heights and densities for projects that provide high levels of on-site affordable housing, up to a maximum of 6 stories and 200 dwelling units per acre for the North Adeline and South Adeline sub-areas for projects that provide at least 50 percent of the base density standard as affordable units (provided at 50 percent low-income and 50 percent very-low income units), and up to a maximum of seven stories and 240 dwelling units per acre for the South Shattuck sub-area for projects that provide at least 50 percent affordable units of the base density standard (provided at 50 percent low-income and 50 percent very-low income units). Development standards for the Ashby BART Station will be finalized in collaboration with the City, BART and the community as a subsequent implementation step, consistent with specific development and design objectives established for the Ashby BART subarea in the Specific Plan.

The General Plan and zoning amendments are included as a part of, and would be adopted concurrently with, the Specific Plan. Upon adoption, the objectives and policies contained within the Specific Plan would supersede goals and policies in the General Plan with respect to the Plan Area. In situations where policies or standards relating to a particular subject are not provided in the Specific Plan, the existing policies and standards of the City's General Plan and Municipal Code would continue to apply. The amendments would be made to both the General Plan and Municipal Code to ensure that broad City policy and specific development standards are tailored to be consistent with the Specific Plan. Projects would be evaluated for consistency with the intent of Specific Plan policies and for conformance with development regulations and design guidelines.

### 2.3.3 Housing Affordability (Plan Chapter 4)

The Housing Affordability chapter of the Specific Plan includes policies and strategies intended to preserve existing affordable housing and promote a variety of new housing options at a range of affordability levels including very low and extremely low income levels. It also includes proactive strategies to address displacement.

**Table 2-1 Specific Plan Base Development Standards**

Character Area	Max Height		Max FAR	Max Density (du/acre)	Max Lot Coverage		Required Setbacks (from Lot Line)			Usable Open Space (sf per unit)	Commercial Parking		Residential Parking	
	Stories	Feet			Interior Lots	Corner Lots	Front (ft. min.)	Side (ft. min.)	Rear (ft. min.)		Min.	Max.	Min.	Max.
South Shattuck	4	45	2.5	120	80%	90%	0	0	10	80	None	1.5 per 1,000 sf	1 per 3 units	1 per unit
North Adeline	3	35	2.0	100	80%	90%	0	0	10	80	None	1.5 per 1,000 sf	1 per 3 units	1 per unit
South Adeline	3	35	2.0	100	80%	90%	0	0	10	80	None	1.5 per 1,000 sf	1 per 3 units	1 per unit
Ashby BART	Any future development in the Ashby BART area would be subject to a negotiated development agreement, consistent with the policy and objectives provided in this Specific Plan for the Ashby BART subarea, in Policy 3.7.													

**Table 2-2 Specific Plan Incentive Development Standards - Tier 1 (At Least 20% of Base Units Affordable, Mix of 50% Low and 50% Very Low)**

Character Area	Max Height		Max FAR	Max Density (du/acre)	Max Lot Coverage		Required Setbacks (from Lot Line)			Usable Open Space (sf per unit)	Commercial Parking		Residential Parking	
	Stories	Feet			Interior Lots	Corner Lots	Front (ft. min.)	Side (ft. min.)	Rear (ft. min.)		Min.	Max.	Min.	Max.
South Shattuck	5	55	3.5	170	80%	90%	0	0	10	80	None	1.5 per 1,000 sf	1 per 3 units	1 per unit
North Adeline	4	45	2.8	140	80%	90%	0	0	10	80	None	1.5 per 1,000 sf	1 per 3 units	1 per unit
South Adeline	4	45	2.8	140	80%	90%	0	0	10	80	None	1.5 per 1,000 sf	1 per 3 units	1 per unit
Ashby BART	Any future development in the Ashby BART area would be subject to a negotiated development agreement, consistent with the policy and objectives provided in this Specific Plan for the Ashby BART subarea, in Policy 3.7.													

**Table 2-3 Specific Plan Incentive Development Standards – Tier 2 (At Least 35% of Base Units Affordable, Mix of 50% Low and 50% Very Low)**

Character Area	Max Height		Max FAR	Max Density (du/acre)	Max Lot Coverage		Required Setbacks (from Lot Line)			Usable Open Space (sf per unit)	Commercial Parking		Residential Parking		
	Stories	Feet			Interior Lots	Corner Lots	Front (ft. min.)	Side (ft. min.)	Rear (ft. min.)		Min.	Max.	Min.	Max.	
South Shattuck	6	65	4.3	200	90%	95%	0	0	10	50	None	1.5 per 1,000 sf	1 per 4 units	1 per unit	
North Adeline	5	55	3.4	170	90%	95%	0	0	10	50	None	1.5 per 1,000 sf	1 per 4 units	1 per unit	
South Adeline	5	55	3.4	170	90%	95%	0	0	10	50	None	1.5 per 1,000 sf	1 per 4 units	1 per unit	
Ashby BART	Any future development in the Ashby BART area would be subject to a negotiated development agreement, consistent with the policy and objectives provided in this Specific Plan for the Ashby BART subarea, in Policy 3.7.														

**Table 2-4 Specific Plan Incentive Development Standards – Tier 3 (At Least 50% of Base Units Affordable, Mix of 50% Low and 50% Very Low)**

Character Area	Max Height		Max FAR	Max Density (du/acre)	Max Lot Coverage		Required Setbacks (from Lot Line)			Usable Open Space (sf per unit)	Commercial Parking		Residential Parking		
	Stories	Feet			Interior Lots	Corner Lots	Front (ft. min.)	Side (ft. min.)	Rear (ft. min.)		Min.	Max.	Min.	Max.	
South Shattuck	7	75	5.0	240	90%	95%	0	0	10	50	None	1.5 per 1,000 sf	None	1 per unit	
North Adeline	6	65	4.0	200	90%	95%	0	0	10	50	None	1.5 per 1,000 sf	None	1 per unit	
South Adeline	6	65	4.0	200	90%	95%	0	0	10	50	None	1.5 per 1,000 sf	None	1 per unit	
Ashby BART	Any future development in the Ashby BART area would be subject to a negotiated development agreement, consistent with the policy and objectives provided in this Specific Plan for the Ashby BART subarea, in Policy 3.7.														

In order to maximize the production of below-market rate units, the Specific Plan outlines different approaches for public land and privately owned land. These approaches reflect the lower cost of land and greater degree of control by the City (or another public agency) for development on public property and resulting greater opportunities for affordability. As described in more detail above, changes to zoning standards and the permit approval process are proposed to facilitate and incentivize private developers to develop affordable units on-site. The Specific Plan proposes a range of new and expanded funding sources that could be explored to implement proposed policies and strategies.

### 2.3.4 Economic Opportunity (Plan Chapter 5)

The Economic Opportunity chapter of the Specific Plan includes policies and strategies that build on the Plan Area's assets and identity and that prioritize supporting existing businesses, institutions and residents. These strategies include ways to reinforce the area's many identities. The Chapter specifically focuses on the Corridor's role as a historical and cultural center for Berkeley's African American community and Japanese-American community; an arts and theater district; as the Ashby Antiques District; as a home to the Berkeley Flea Market and Farmers Market; as a regional center for the disabled community; as the historic Lorin District; and as a home to many community-serving non-profits. The Specific Plan also includes policies to improve the attractiveness and pedestrian orientation of storefronts and to build capacity among individual businesses and business organizations.

### 2.3.5 Transportation (Plan Chapter 6)

One of the goals of the Specific Plan is to "improve mobility for persons of all means and abilities." The Transportation chapter of the Specific Plan proposes interim and long-term improvements to the transportation network. Consistent with the City's Complete Streets policy, the Specific Plan focuses on providing safe and convenient travel for all modes. The Specific Plan would enhance the transportation network for pedestrians, cyclists, and transit riders, while continuing to accommodate automobile traffic in the Plan Area.

The interim and long-term improvements to the transportation network are described below.

#### **Recommended Interim Improvements (Pedestrian, Bicycle, Automobile)**

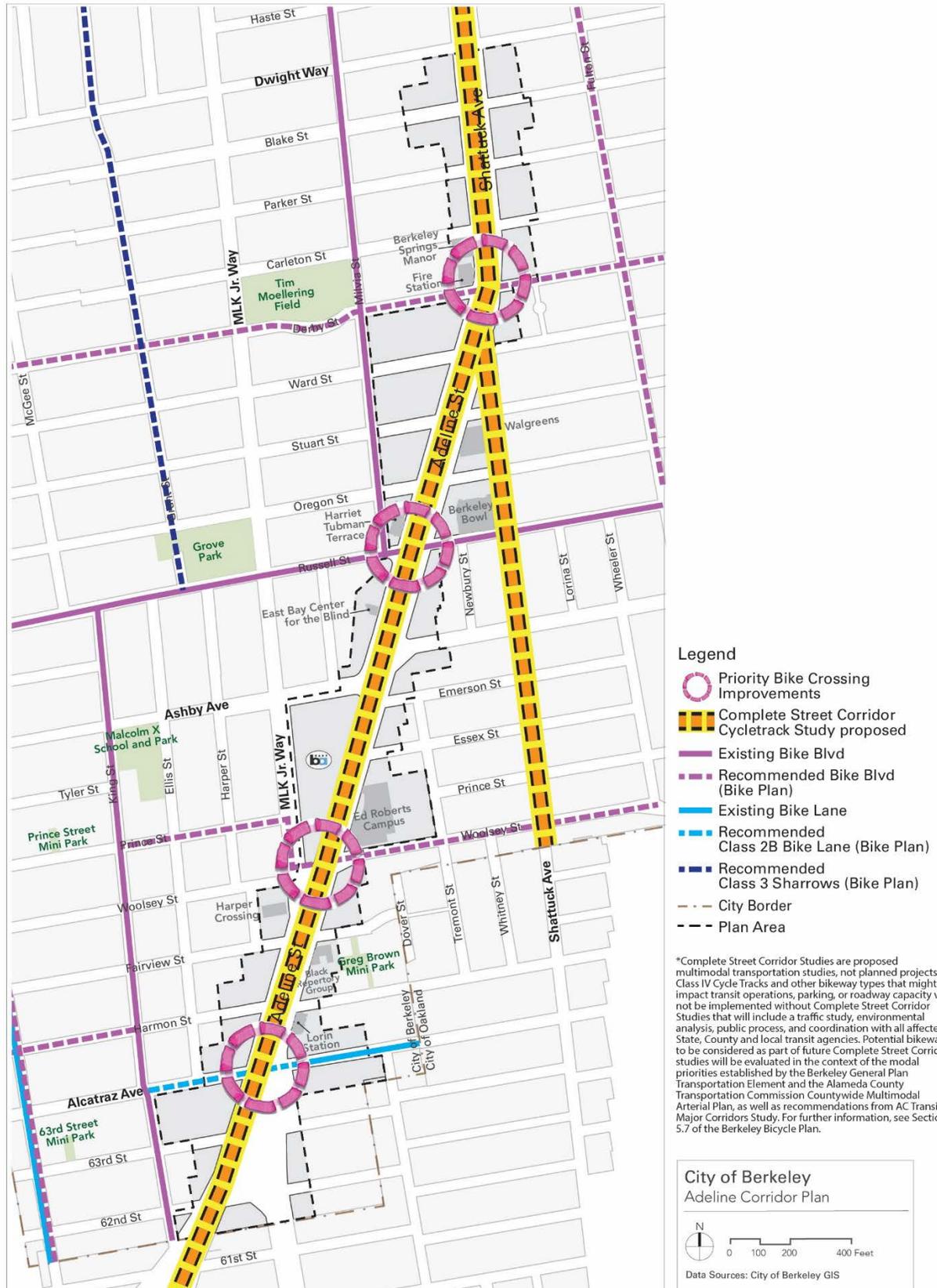
The recommended interim improvements generally consist of physical measures that can be independently implemented at various locations to increase the safety and comfort of pedestrians and cyclists. The recommended interim improvements, shown on Figure 2-6 and Figure 2-7, would consist of:

- Pedestrian crossing improvements along Adeline Street, such as high-visibility crosswalks, curb extensions, rectangular rapid flash beacons, pedestrian hybrid beacons (PHB), and median pedestrian refuge islands.
- Traffic calming devices, with the primary goal of reducing automobile speeds and/or volumes, such as chicanes, speed humps, turn restrictions, and traffic circles along the residential streets in the Plan Area, the improvements described above, and signal timing adjustments along the corridor.
- Universal accessibility (Americans with Disabilities Act) measures that improve accessibility for users with a wide range of abilities. Improvements, such as audible signal crossings and directional accessible curb ramps, would be focused around the

Figure 2-6 Interim Pedestrian Improvements



Figure 2-7 Interim Bicycle Improvements



Ashby BART Station/Ed Roberts Campus and major intersections, such as Adeline Street/Ashby Avenue and Adeline Street/Alcatraz Avenue.

- Bicycle improvements, which would be consistent with the City's Bicycle Plan to accommodate the existing and planned bicycle network improvements in the Plan Area and surroundings, such as proposed bicycle boulevards along Derby, Fulton, Prince and Woolsey Streets. The recommended interim improvements in the Specific Plan consist of pedestrian hybrid beacons (PHBs) at bicycle boulevard crossings of the Adeline Street at Russell and Woolsey Streets and of MLK Jr. Way at Prince Street, as recommended in the City's Bicycle Plan. Private developers are required and encouraged to install bicycle amenities – bicycle parking and storage, wayfinding, and signage – that will encourage bicycling around the neighborhood and to/from BART and key commercial areas.

### Recommended Long-Term Improvements (Pedestrian, Bicycle, Automobile)

The Specific Plan includes long-term improvements, primarily along the Adeline Corridor. The improvements along each segment of the corridor are shown on Figure 2-8 (South Shattuck), Figure 2-9 (North Adeline), Figure 2-10 (Ashby BART Area), and Figure 2-11 (South Adeline) and described below. These modifications would require new signal equipment and signal timing at several intersections along the corridor.

- **South Shattuck.** This segment would continue to provide two automobile lanes in each direction, separated by median. The segment would continue to maintain much of its current alignment and cross-section. However, the future design would include the addition of back-in angled on-street parking, and the addition of one-way cycle tracks on both sides of the street, between the sidewalk and the car parking lane.
- **North Adeline (between Derby Street and Ashby Avenue).** This segment would provide two auto lanes in each direction separated by an eight-foot median. This option would also provide a southbound drive aisle on the west side of the street, separated from the southbound auto lanes by an approximately 38-foot plaza/open space. Parallel or angled on-street parking would be provided along the northbound street and the southbound drive aisle. Left-turn lanes would be provided at northbound Oregon Street and southbound Ashby Avenue. A continuous median would prevent all other left-turns along this segment of the corridor. This option would widen the existing sidewalks on both sides of the street and provide new sidewalks along both sides of the open space on the west side of the street. Northbound Adeline Street would provide a one-way northbound cycletrack between the parking lane and the sidewalk. Southbound Adeline Street would provide a cycletrack east of the drive aisle, which would be one-way southbound north of Russell Street and two-way between Russell Street and Ashby Avenue.
- **Ashby BART Station Area.** This segment would provide two auto lanes in each direction without a median. Parallel on-street parking would be provided along both sides of the street. This segment would continue to accommodate sidewalks on both sides of the street, with a two-way cycletrack on the west side of the street between the sidewalk and the parking lane.
- **South Adeline (between Woolsey Street and Berkeley/Oakland border).** This segment would provide two auto lanes in each direction, which is a reduction of one lane in each direction relative to existing conditions. The lanes, separated by a 12-foot median, would accommodate left-turn lanes at intersections. This segment would also

Figure 2-8 Recommended Long-Term Improvements – South Shattuck

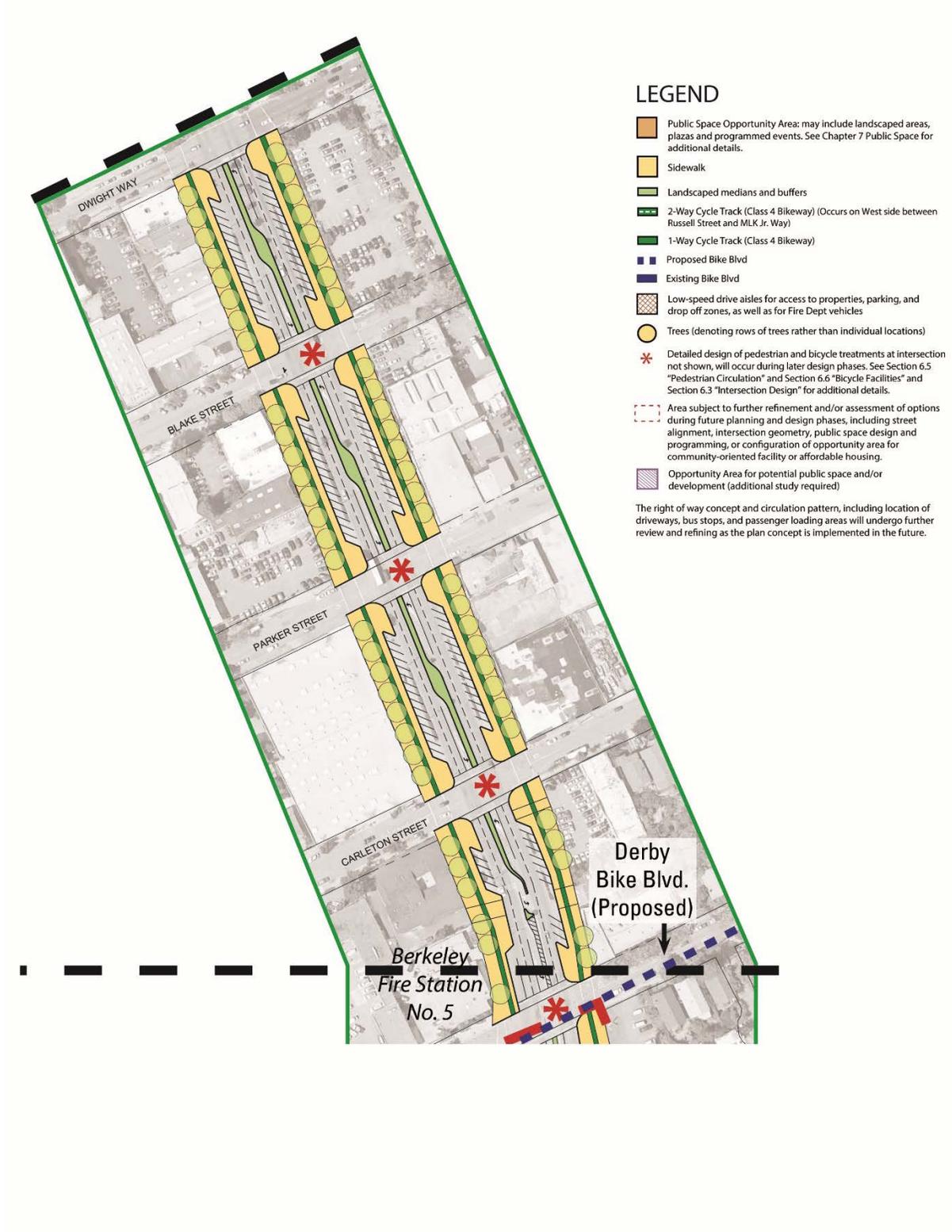


Figure 2-9 Recommended Long-Term Improvements – North Adeline

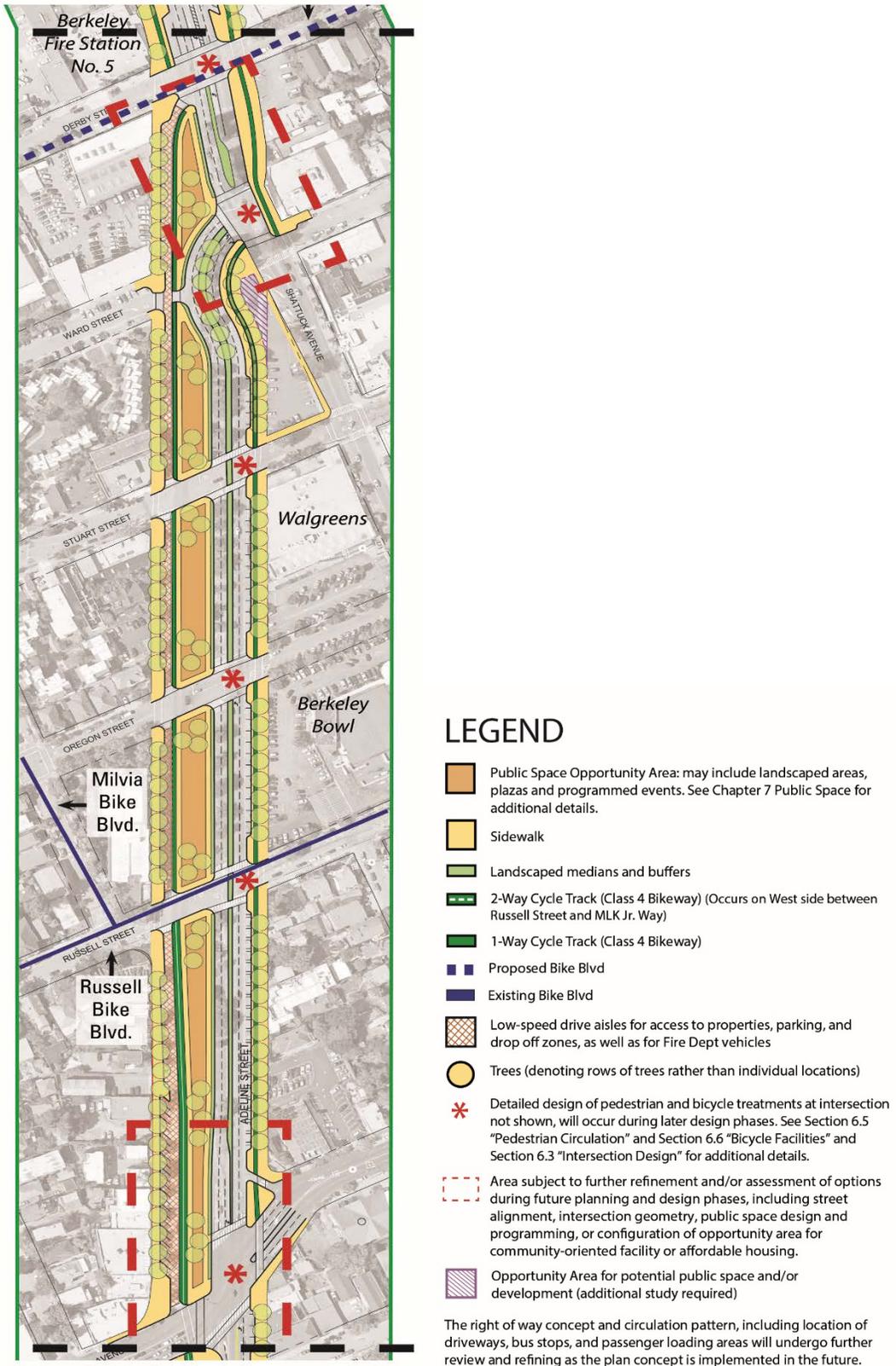


Figure 2-10 Recommended Long-Term Improvements – Ashby BART Station Area

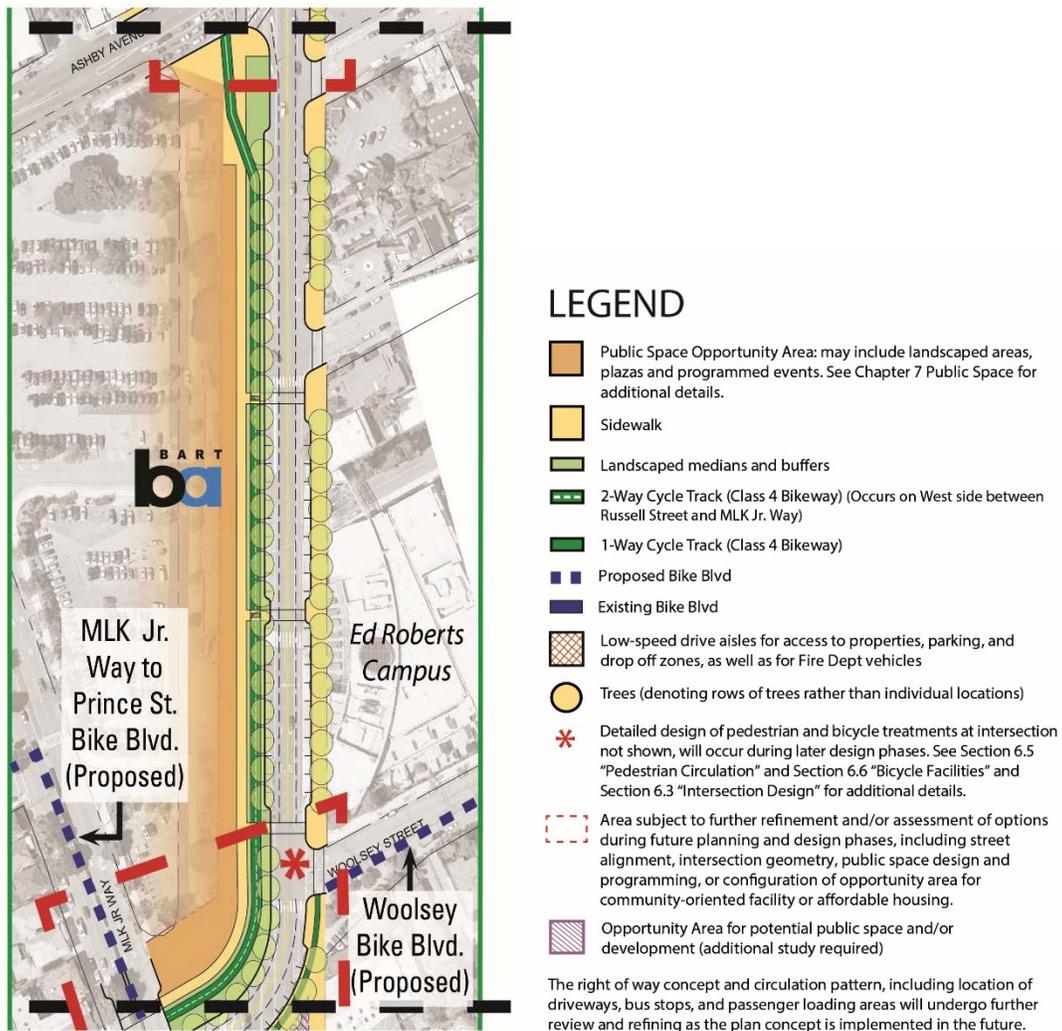
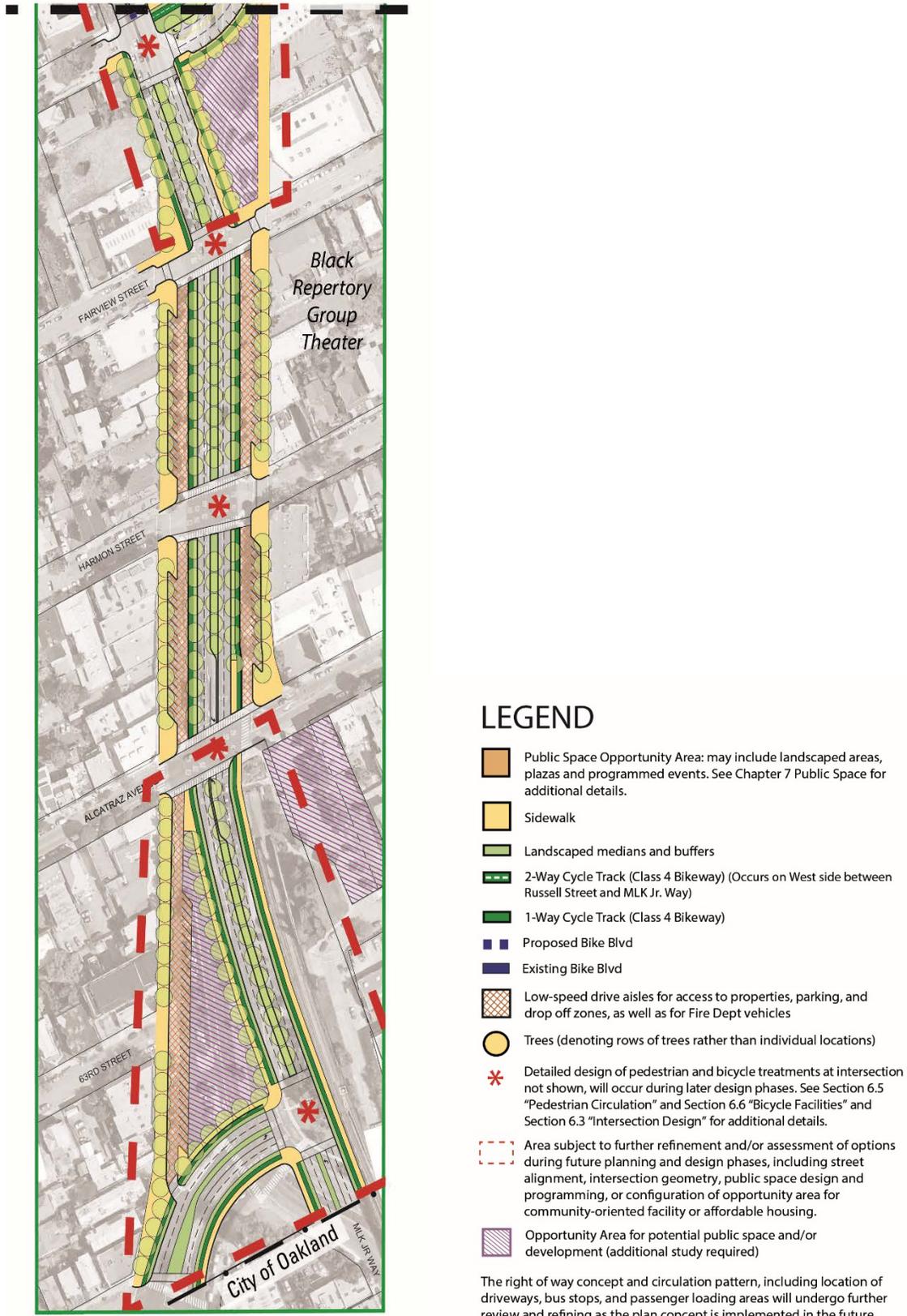


Figure 2-11 Recommended Long-Term Improvements – South Adeline



provide drive aisles on southbound Adeline Street south of Fairview Street and on northbound Adeline Street between Alcatraz Avenue and Fairview Street. The drive aisles would provide back-in angled parking. An open space/plaza would be provided between the southbound drive aisle and the street south of Alcatraz Avenue. The segment would generally widen the existing sidewalks on both sides of the street and provide one-way cycletracks on both sides of the street between the sidewalk and the street. Along the blocks with drive aisles, the cycletrack would be on the left-side of the drive aisle with a landscaped buffer between the cycletrack and the auto lanes.

## Transit Network

The Berkeley General Plan Transportation Element and the Alameda County Transportation Commission Countywide Multimodal Arterial Plan designate the Adeline Corridor as a primary transit route. Since bus service in the Plan Area is provided by AC Transit and not controlled by the City, the Specific Plan cannot modify bus service in the Plan Area. The Plan Area also includes the Ashby BART Station.

The interim improvements include enhancements to bus stops, such as improved shelters and seating areas. The improvements described in the previous subsection would improve walking and biking access to and from the bus stops in the Plan Area and at the Ashby BART Station. Both the interim and long-term physical improvements proposed by the Specific Plan would continue to accommodate bus service along the Adeline Corridor and automobile access to the BART Station.

The long-term improvements along the Adeline Corridor described above would continue to maintain the existing bus stops along the corridor. All bus stops would be accommodated at bus bulbs to allow for buses to stop in the auto lane. Along the segment of the Adeline Corridor between Fairview Street and Alcatraz Avenue, bus stops can be accommodated in the median between the auto lane and the drive aisle. The median at these bus stops would be widened to 10 feet to accommodate a bus stop by shifting the drive aisle to the right. In addition, all the signals along the corridor would be upgraded to accommodate transit signal priority (TSP), where buses can receive preferential treatment along the corridor.

## Parking and Transportation Demand Management

The long-term improvements on the Adeline Corridor continue to accommodate on-street parking. It is expected that the on-street parking supply and controls would remain similar to current conditions. The site development standards included in the Specific Plan (Section 3.4) would have the overall effect of reducing requirements by introducing parking maximums for commercial (1.5 spaces per 1000 square feet) and residential (1 per unit except in the Ashby subarea where the maximum would be 0.5 spaces/unit) and no minimum parking requirements for commercial developments and for residential developments in the Ashby BART subarea. Residential developments in the other subareas would have a minimum parking requirement of one space per three units for the Base Development Standards (Table 2-1) and Tier 1 Affordable Housing Incentive Development standards (Table 2-2). There is no residential minimum parking requirement for the higher tiers of Affordable Housing Incentive Development Standards under Tiers 2 and 3 (Table 2-3 and Table 2-4).

The Specific Plan also proposes TDM strategies to reduce parking demand and single-use automobile trips such as: proposing parking maximums and reducing parking requirements for new development projects, encouraging shared parking and unbundling of parking when

possible, as well as other transportation demand strategies such as offering transit passes and/or transit subsidies.

### 2.3.6 Public Space (Plan Chapter 7)

The Specific Plan envisions long-term improvements to the Shattuck Avenue and Adeline right-of-way in order to achieve community goals in all five interrelated focus areas described in the Plan Vision and Planning Framework. The Public Space and Infrastructure chapter of the Specific Plan addresses how the long-term improvements to the right-of-way shown in Figure 2-8, Figure 2-9, Figure 2-10, and Figure 2-11 above would increase the amount of public space and how those spaces could be programmed to support community life, economic opportunity and environmental sustainability.

### 2.3.7 Implementation (Plan Chapter 8)

Chapter 8 of the Specific plan describes the implementation strategies, capital improvement projects, monitoring approach, and plan administration needed to execute the vision of the Plan. It also identifies a range of potential funding programs to implement the recommended activities and construct the capital improvements needed to support existing and future development.

## 2.4 Buildout Projection

The Adeline Corridor Specific Plan includes a buildout projection, which is shown below in Table 2-5. The Adeline Corridor buildout projection represents the *foreseeable maximum* development that the City has projected can reasonably be expected to occur in the Plan Area through the plan horizon year (2040), and is thus the level of development analyzed in this EIR. To ensure a conservative approach in analyzing environmental effects under CEQA, EIRs typically analyze what could be considered a maximum reasonable impact scenario in order to capture as many significant environmental impacts as could be reasonably expected as a result of the Project.

Table 2-5 Adeline Corridor Buildout Projection (through 2040)<sup>1</sup>

Plan Subarea	Residential (dwelling units)	Commercial (square feet)
South Shattuck	300	20,000
North Adeline	200	-5,000
Ashby BART	850	50,000
South Adeline	100	0
<b>Total</b>	<b>1,450</b>	<b>65,000</b>

<sup>1</sup> The table shows net, new development and excludes the reuse of existing vacant space in a more intensive way.

As shown in the table, for the purposes of environmental analysis, a reasonably foreseeable estimate of buildout associated with the proposed Specific Plan through the horizon year of 2040 would include the development of 1,450 housing units and 65,000 square feet of commercial space.

This maximum development that is the basis of this EIR analysis is distinctly different from the *theoretical maximum* development potential that could ultimately occur in the Plan Area. The reasonably foreseeable maximum development assumed for the EIR analysis attempts to project what might be feasible based on a number of market factors, including but not

limited to: market demand for various uses; broader regional economic and market conditions; backlog of approved or planned projects in the vicinity; recent development and business investment in the area; landowner intentions for their properties; and properties susceptible to change due to vacancy, dereliction, or absence of existing development. Development of most of the properties in the Plan Area would be implemented through the market-driven decisions that individual landowners make for their properties. Thus, it is difficult to project the exact amount and location of future development with any precision.

However, in order to evaluate the environmental consequences of Specific Plan implementation, particularly as it relates to traffic generation, assumptions have been made about the reasonable distribution and intensity of new development within the Plan Area by the horizon year of 2040. Specifically, the traffic analysis includes assumptions about the generation of new automobile trips associated with the Adeline Corridor Development Program within the four subareas of the Plan Area. These subareas and assumptions are discussed further in Section 4.12, *Transportation and Traffic*.

While the Adeline Corridor buildout projection reflects a reasonably foreseeable maximum amount of development for the Plan Area through 2040, it is not intended as a development cap that would restrict development in any of the four subareas. Rather, the Plan allows for flexibility in the quantity and profile of future development within each subarea, and between subareas, as long as it conforms to the general traffic generation parameters established by the Plan. For example, if significantly more residential and less commercial development than projected for one subarea occurs, it would be allowed as long as the projected traffic generation is within ranges assumed by the Specific Plan and analyzed in this EIR. Through the established planning and environmental review and permitting processes required of each individual development in the City and under the Specific Plan, the City would monitor actual development, associated generation of new automobile trips, and other traffic characteristics within the Plan Area and within the study area as identified in Section 4.12, *Transportation and Traffic*, as the Specific Plan is implemented.

In summary, this EIR evaluates the impacts of the reasonably foreseeable maximum development under the Adeline Corridor Development Program.

## 2.5 Project Objectives

The Adeline Corridor Specific Plan is intended to achieve the following project objectives and desired outcomes as it is implemented over time (items are grouped topically and the order in which they are presented is not intended to indicate priority):

1. **“Complete Neighborhoods”**. Encourage “complete neighborhoods” that foster a diverse mix of uses to provide safe and convenient access for all people of all ages, abilities and income levels to meet daily needs: to live, work, play, learn, worship, dine, shop, and socialize with one another other. An important feature of an urban, complete neighborhood is that it is transit-oriented and built at a walkable and bikeable human scale.
2. **Leverage Publicly Owned Land to Achieve Community Goals**. Leverage publicly owned land, such as the Ashby BART Station Area surface parking lots, and the right-of-way to maximize affordable housing and other uses, community facilities and public improvements desired by the community;
3. **Equitable Development**. Develop regulations, incentives and guidelines that are aligned with the community’s vision and result in greater opportunities for low income and historically disenfranchised or displaced residents.

4. **Compatibility with Adjacent Neighborhoods.** Ensure compatibility with residential neighborhoods adjacent to parcels that abut the main commercial streets and encourage sensitive design transitions, public amenities and uses that benefit the surrounding neighborhood.
5. **Diverse and Affordable Housing.** Encourage development of a variety of types of housing at a range of income levels, especially for those at very low income levels and who are at high risk of involuntary displacement.
6. **Protections for Existing Affordable Housing and Tenants.** Continue and strengthen existing programs and funding for anti-eviction and technical assistance for tenants and property owners to preserve existing affordable housing.
7. **New and Expanded Funding Sources.** Explore new, locally controlled funding source and expand financing mechanisms to fund affordable housing, public space and other high-priority “community benefits”.
8. **Strong Local Businesses and Non-profit Service Providers and Business Organizations.** Support long-term viability of existing businesses and non-profit service providers and business district and merchant organizations.
9. **Neighborhood Identity Marketing and Support.** Support broader awareness and strengthen the area’s identity as a cultural center for African-Americans and Japanese-Americans; as an arts and cultural district; as home to the Berkeley Juneteenth Festival and the Berkeley Flea and Farmers Markets, and a wealth of community-based non-profit service organizations.
10. **Attractive and Welcoming Environment for Businesses and Workers to Thrive.** Support programs that enhance the attractiveness, cleanliness and safety of Adeline Street and its storefronts/building facades; as well as opportunities for high quality jobs that allow people to live and work in the area,
11. **Better Mobility and Connectivity.** Improve safety, connectivity, accessibility and access along and across Shattuck and Adeline streets for all people of all ages, abilities and income levels to meet daily needs: to live, work, play, learn, worship, dine, shop, and socialize with one another other.
12. **Inclusive Public Space.** Increase the amount of parks, plazas and other public space that encourages pedestrian activity, recreation and access to nature for persons of all abilities, age and incomes.
13. **Efficient and Shared Parking.** Support Transportation Demand Management and carefully managed parking that addresses businesses’ and residents’ needs without undermining public transit, walking and bicycling as preferred modes of transportation.
14. **On-going Transparent and Inclusive Plan Implementation Process.** Continue to engage the community, including those who are typically under-represented in city planning processes in meaningful ways to ensure implementation of Plan goals over the long-term.
15. **Environmental Sustainability.** Create a sustainable urban environment that incorporates green building features, green infrastructure and ecology, sustainable energy systems, water efficiency and conservation, and sustainable transportation systems.

## 2.6 Required Approvals

In order for the proposed Specific Plan to be implemented, it would require adoption by the City Council of the City of Berkeley. Prior to review by the City Council, the Planning Commission will review and forward its recommendations to the City Council. This EIR is intended to provide the information and environmental analysis necessary to assist the City in considering all the approvals and actions necessary to adopt and implement the Adeline Corridor Specific Plan. To summarize previous discussions in this chapter, such actions/approvals include without limitation:

- **Certification of the EIR.** Certify the Adeline Corridor Specific Plan EIR and make environmental findings pursuant to CEQA.
- **Adoption of the Specific Plan.** Adoption of the Specific Plan.
- **Amendments to General Plan.** Amend General Plan text and maps to incorporate the Specific Plan.
- **Amendments to the City of Berkeley Municipal Code.** Amend Municipal Code text and map to incorporate the Specific Plan.

As detailed in Section 1.2, Environmental Review, the City intends to use the streamlining/tiering provisions of CEQA to the maximum feasible extent, so that future environmental review of specific projects is expeditiously undertaken without the need for repetition and redundancy, as provided in CEQA Guidelines Section 15152 and elsewhere.

This EIR may also cover State, regional and/or local government permits that may be required for development under the proposed Specific Plan, whether or not they are explicitly listed below. State and regional agencies that may have jurisdiction over some aspects include (but are not limited to):

- San Francisco Bay Regional Water Quality Control Board (RWQCB)
- Bay Area Air Quality Management District (BAAQMD)
- East Bay Municipal Utility District (EBMUD)
- California Department of Transportation (Caltrans)
- Bay Area Rapid Transit (BART)

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## 3 Environmental Setting

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This section provides a general overview of the environmental setting for the proposed Specific Plan. A more detailed description of the Plan Area can be found in Section 2, *Project Description*, and more detailed descriptions of the environmental setting for each environmental issue area can be found in Section 4, *Environmental Impact Analysis*.

### 3.1 Regional and Local Setting

The Plan Area is located in the southern portion of Berkeley, in the East Bay region of the San Francisco Bay Area. Figure 2-1 in Section 2, *Project Description*, shows the location of the Plan Area relative to Berkeley and nearby East Bay cities. The East Bay region generally includes cities along the eastern shores of the San Francisco Bay and San Pablo Bay and inland communities in Alameda and Contra Costa counties. Approximately one-third of the Bay Area's population resides in the East Bay. Berkeley is the fourth largest city in Alameda County in population following Oakland, Fremont, and Hayward (California Department of Finance [DOF] 2018). It borders the cities of Oakland and Emeryville to the south and the city of Albany and the unincorporated community of Kensington to the north. To the east lies Contra Costa County and the ridge of the Berkeley Hills, while the western edge is defined by the San Francisco Bay.

Berkeley is located in the San Francisco Bay Hydrologic Region. Drainage is generally to the west towards the San Francisco Bay. Berkeley is in a seismically active region in the vicinity of the San Andreas and Hayward faults. The Hayward Fault passes through the eastern area of Berkeley, as shown in Figure 4.4-1 in Section 4.4, *Geology of Soils*.

Berkeley enjoys a mild climate characterized by cool winters and moderate summers. According to the Western Regional Climate Center, average temperatures range from about 70 degrees F in summer to 50 degrees F in winter. Annual rainfall averages about 23 inches per year, with most rainfall occurring between October and April (Western Regional Climate Center 2009).

### 3.2 Plan Area Setting

As shown in Figure 2-2 in Section 2, *Project Description*, the Plan Area is in the southern portion of Berkeley and extends north from the Berkeley/Oakland border. It encompasses the area along Adeline Street and Shattuck Avenue and serves as an important transition between the city of Oakland to the south and the Downtown Berkeley area to the north. The Plan Area extends approximately 1.3 miles and encompasses approximately 86 acres. It contains a wide range of commercial, civic, cultural and residential land uses as well as the Ashby BART Station. In addition to BART, there is also frequent AC Transit bus service throughout the Plan Area via multiple routes. The northern Plan Area boundary is also within half a 0.5 mile of the Downtown Berkeley BART station.

Most of the land surrounding the Plan Area is dedicated to residential uses and is characterized by well-established neighborhoods with a mix of single-family and small multi-family developments. These residential areas are occasionally traversed by streets that are roughly parallel with or intersect South Shattuck Avenue and Adeline Street (e.g. Martin

Luther King Jr. Way, Sacramento Street, Telegraph Avenue, Ashby Avenue and Alcatraz Avenue) and that have concentrations of commercial/mixed-use development. To the north and northwest of the Plan Area, where the Downtown and UC Berkeley Campus are located, land uses are characterized by more intensely developed residential, office and institutional uses.

The Plan Area has an average slope of 1.2 percent and generally slopes in a southwesterly direction from an elevation of approximately 167 feet above sea level at the intersection of Shattuck Avenue and Dwight Way to approximately 85 feet above sea level near the Berkeley/Oakland City Limit. The Plan Area is within the boundaries of the Potter Watershed. As shown in Figure 4.7-1 in Section 4.7, *Hydrology and Water Quality*, there are no open creeks or surface water bodies in or near the Plan Area. Eleven properties in the Plan Area are present on one of the lists of hazardous waste sites enumerated under Section 95962.5 of the Government Code, meaning hazardous substances are known to have been released on those properties at some point in the past.

The overall development character of the Plan Area consists primarily of one- and two-story buildings with active commercial ground floor uses. Many structures include second-story residential or office use. Some taller structures are present, including the five-story Parker Place (mixed-use residential with ground floor commercial) and Central Self Storage buildings on Shattuck Avenue in the northern part of the Plan Area and the six-story Harriet Tubman Terrace residential complex on Adeline Street.

Building sizes range from just under 1,000 square feet to over 90,000 square feet. The largest building at 93,460 square feet is the Ed Roberts Campus. Smaller buildings are typically residential structures and small retail establishments. The most prevalent type of building within the Plan Area is mixed-use, which makes up 22.6 percent of the total built environment. The next most common building type is single-use commercial, which makes up 18 percent of the built environment. Of the 235,327 square feet of single-use commercial buildings, nearly 80 percent is comprised of single-story retail stores along Adeline Street.

### 3.3 Cumulative Development

As defined in CEQA Guidelines §15335, “cumulative impacts” refers to two or more individual impacts that, when considered together, are substantial or will compound other environmental impacts. Cumulative impacts are the changes in the environment that result from the incremental impact of development of the proposed project and other nearby projects. For example, traffic impacts of two nearby projects may be insignificant when analyzed separately but could have a significant impact when analyzed together. Cumulative impacts analysis provides a reasonable forecast of future environmental conditions and can more accurately gauge the effects of a series of projects. According to CEQA Guidelines §15130(b), a discussion of significant cumulative impacts shall include a list of past, present, and probably future projects related to cumulative impacts; or, a summary of projections contained in an adopted local, regional, or statewide plan that describes or evaluates conditions contributing to the cumulative effect.

The cumulative setting for each environmental issue area is described in Section 4, *Environmental Impact Analysis*. The Plan Area is located geographically in the southern portion of Berkeley; however, cumulative impacts as analyzed in this EIR may be spread throughout Berkeley or the region. Some cumulative impacts are not necessarily significant in relation to development that occurs further from the Plan Area. For example, noise impacts associated with the proposed Specific Plan are not likely to be detected in the

northern part of Berkeley but may be detected in the adjacent residential neighborhoods in south Berkeley and in the northernmost portion of Oakland. Selected cumulative impact discussions, such as land use and geology and soils, rely on a smaller geographic area: these are noted as appropriate. Some cumulative impact discussions, such as air quality, traffic and circulation, and population and housing, rely on much larger geographic areas such as the Bay Area region. For issues that may have regional cumulative implications, the cumulative impact analysis for this EIR is based on Plan Bay Area 2040, the Bay Area's most recent Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS). Based on the forecasts in Plan Bay Area 2040, in 2040 Berkeley is estimated to have a population of 140,900, 55,400 housing units, and 121,700 jobs. Currently, Berkeley has an estimated population of 118,585, 45,923 housing units, and 82,237 jobs (see Tables 4.10-1 and 4.10-2 in Section 4.10, *Population and Housing*). Development under the proposed Specific Plan in conjunction with development forecasted in Plan Bay Area 2040 is accounted for in the cumulative impacts analysis.

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## 4 Environmental Impact Analysis

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This section discusses the possible environmental effects of the Adeline Corridor Specific Plan 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.
- **Significant but Mitigable to Less than Significant .** 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). These are also summarized in the Executive Summary of this EIR. 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*.

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## 4.1 Air Quality

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This section discusses the Specific Plan's potential impacts to regional and local air quality. The vehicle miles traveled (VMT) estimate used in emissions analysis are based on the traffic analysis included in Section 4.12, *Transportation and Traffic*, of this EIR.

### 4.1.1 Setting

#### a. Climate and Topography

The Plan Area is in the San Francisco Bay Area Air Basin (SFBAAB). Air quality in the SFBAAB is affected by the emission sources located in the region, and by natural factors. Atmospheric conditions such as wind speed and direction, air temperature gradients, and local and regional topography influence air quality. The SFBAAB is affected by a Mediterranean climate with warm, dry summers and cool, damp winters. Topographical features, the location of the Pacific high-pressure system, and varying circulation patterns resulting from temperature gradients affect the speed and direction of local winds. The winds play a major role in the dispersion of pollutants. Strong winds can carry pollutants far from their source; a lack of wind will allow pollutants to concentrate in an area.

Air dispersion also affects pollutant concentrations. As altitude increases, air temperature normally decreases. Inversions occur when colder air becomes trapped below warmer air, restricting the air masses' ability to mix. Pollutants also become trapped, which promotes the production of secondary pollutants. Subsidence inversions, which can occur during the summer in the SFBAAB, result from high-pressure cells that cause the local air mass to sink, compress, and become warmer than the air closer to the earth. Pollutants accumulate as this stagnating air mass remains in place for one or more days (Bay Area Air Quality Management District [BAAQMD] 2017a).

The Plan Area is in the Northern Alameda County climatological sub-region, where marine air traveling through the Golden Gate is a dominant weather factor. The Oakland-Berkeley Hills cause the westerly flow of air to split off the north and south of Oakland, giving rise to diminishing wind speeds and temperatures averaging from the mid-50s to mid-70s degrees Fahrenheit. The air pollution potential is lowest for the parts of the sub-region closest to the Bay, and air pollution in Berkeley is marginally higher because of the lower frequency of strong winds (BAAQMD 2017a).

#### b. Air Pollutants of Primary Concern

The federal and State clean air acts mandate the control and reduction of certain air pollutants. Under these laws, the U.S. Environmental Protection Agency (USEPA) and the California Air Resources Board (CARB) have established ambient air quality standards for certain "criteria" pollutants. Ambient air pollutant concentrations are affected by the rates and distributions of corresponding air pollutant emissions, as well as by the climate and topographic influences discussed above. The primary determinant of concentrations of non-reactive pollutants, such as carbon monoxide (CO) and suspended particulate matter, is proximity to major sources. Ambient CO levels usually closely follow the spatial and temporal distributions of vehicular traffic. A discussion of primary criteria pollutants is provided below.

## Ozone

Ozone (O<sub>3</sub>) is a colorless gas with a pungent odor. Most ozone in the atmosphere is formed as a result of the interaction of ultraviolet light, reactive organic gases (ROG), and oxides of nitrogen (NO<sub>x</sub>). ROG (the organic compound fraction relevant to O<sub>3</sub> formation, and sufficiently equivalent for the purposes of this analysis to volatile organic compounds, or VOC), is composed of non-methane hydrocarbons (with some specific exclusions), and NO<sub>x</sub> is made of different chemical combinations of nitrogen and oxygen, mainly nitric oxide (NO) and nitrogen dioxide (NO<sub>2</sub>). As a highly reactive molecule, O<sub>3</sub> readily combines with many different components of the atmosphere. Consequently, high levels of O<sub>3</sub> tend to exist only while high ROG and NO<sub>x</sub> levels are present to sustain the O<sub>3</sub> formation process. Once the precursors have been depleted, O<sub>3</sub> levels rapidly decline. Because these reactions occur on a regional rather than local scale, O<sub>3</sub> is considered a regional pollutant.

## Carbon Monoxide

CO is an odorless, colorless gas and causes a number of health problems including fatigue, headache, confusion, and dizziness. The incomplete combustion of petroleum fuels in on-road vehicles and at power plants is a major cause of CO. CO is also produced during winter from wood stoves and fireplaces. CO tends to dissipate rapidly into the atmosphere; consequently, violations of the State CO standard are generally associated with major roadway intersections during peak-hour traffic conditions.

Localized CO “hotspots” can occur at intersections with heavy peak-hour traffic. Specifically, hotspots can be created at intersections where traffic levels are sufficiently high such that the local CO concentration exceeds the National Ambient Air Quality Standards (NAAQS) of 35.0 parts per million (ppm) or the California Ambient Air Quality Standards (CAAQS) of 20.0 ppm.

## Nitrogen Dioxide

NO<sub>2</sub> 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 NO, but NO reacts rapidly to form NO<sub>2</sub>, creating the mixture of NO and NO<sub>2</sub> commonly called NO<sub>x</sub>. NO<sub>2</sub> is an acute irritant. A relationship between NO<sub>2</sub> and chronic pulmonary fibrosis may exist, and an increase in bronchitis in young children at concentrations below 0.3 ppm may occur. NO<sub>2</sub> absorbs blue light and causes a reddish brown cast to the atmosphere and reduced visibility. It can also contribute to the formation of particulate matter no more than 10 microns in diameter (PM<sub>10</sub>) and acid rain.

## Suspended Particulates

PM<sub>10</sub> is small particulate matter measuring no more than 10 microns in diameter, while PM<sub>2.5</sub> is fine particulate matter measuring no more than 2.5 microns in diameter. Suspended particulates are mostly dust particles, nitrates, and sulfates. They are a by-product 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<sub>2.5</sub>) 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 serious 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 inhaled into the lungs remains there, which can cause permanent lung damage. 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.

## Lead

Lead (Pb) is a metal found naturally in the environment, as well as in manufacturing products. The major sources of Pb emissions historically have been mobile and industrial sources. In the early 1970s, the USEPA set national regulations to gradually reduce the lead content in gasoline. In 1975, unleaded gasoline was introduced for motor vehicles equipped with catalytic converters. The USEPA completed the ban prohibiting the use of leaded gasoline in highway vehicles in December 1995. As a result of the USEPA's regulatory efforts to remove Pb 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 Pb from gasoline sold for most highway vehicles. Pb 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 (USEPA 2013). As a result of phasing out leaded gasoline, metal processing currently is the primary source of Pb 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.

## Toxic Air Contaminants

Public exposure to TACs is a significant environmental health issue in California. The California Health and Safety Code defines a TAC as "an air pollutant which may cause or contribute to an increase in mortality or in serious illness, or which may pose a present or potential hazard to human health." The majority of the estimated health risks from TACs can be attributed to relatively few compounds, the most important being particulate matter from diesel-fueled engines. According to BAAQMD, particulate matter emitted from diesel engines contributes more than 85 percent of the cancer risk within the SFBAAB and cancer risk from TAC is highest near major diesel PM sources. Almost all diesel exhaust particles are 10 microns or less in diameter. Because of their extremely small size, these particles can be inhaled and eventually trapped in the bronchial and alveolar regions of the lungs.

CARB and the USEPA established ambient air quality standards for major pollutants, including O<sub>3</sub>, CO, NO<sub>2</sub>, sulfur dioxide (SO<sub>2</sub>), Pb, and PM<sub>10</sub> and PM<sub>2.5</sub>. Standards have been set at levels intended to be protective of public health. California standards are more restrictive than federal standards for each of these pollutants except for lead and the eight-hour average for CO.

CARB and the local air districts monitor ambient air quality to assure that air quality standards are met; if they are not met, the districts work to develop strategies to meet the standards. 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 summarizes the CAAQS and the NAAQS for each of these pollutants, as well as the attainment status of the SFBAAB. The table shows

SFBAAB to be in nonattainment for the federal standards for O<sub>3</sub> and PM<sub>2.5</sub>. The SFBAAB is in nonattainment for the State standard for O<sub>3</sub>, PM<sub>10</sub>, and PM<sub>2.5</sub>.

**Table 4.1-1 Ambient Air Quality Standards & Basin Attainment Status**

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 <sub>10</sub> )	Annual Arithmetic Mean	20 µg/m <sup>3</sup>	N		
	24 Hour	50 µg/m <sup>3</sup>	N	150 µg/m <sup>3</sup>	U
Particulate Matter - Fine (PM <sub>2.5</sub> )	Annual Arithmetic Mean	12 µg/m <sup>3</sup>	N	12 µg/m <sup>3</sup>	U/A
	24 Hour			35 µg/m <sup>3</sup>	N
Sulfates	24 Hour	25 µg/m <sup>3</sup>	A		
Lead	Calendar Quarter			1.5 µg/m <sup>3</sup>	A
	Rolling 3 Month Average			0.15 µg/m <sup>3</sup>	
	30 Day Average	1.5 µg/m <sup>3</sup>			A
Hydrogen Sulfide	1 Hour	0.03 ppm	U		
Vinyl Chloride (chloroethene)	24 Hour	0.010 ppm	No information available		
Visibility Reducing Particles	8 Hour (10:00 to 18:00 PST)		U		

A=Attainment N=Nonattainment U=Unclassified; mg/m<sup>3</sup>=milligrams per cubic meter ppm=parts per million µg/m<sup>3</sup>=micrograms per cubic meter

PST = Pacific Standard Time

Source: BAAQMD 2017a, <http://www.baaqmd.gov/research-and-data/air-quality-standards-and-attainment-status>

The closest BAAQMD-operated monitoring station to the Plan Area is the Berkeley-Aquatic Park Monitoring Station, approximately 1.5 miles to the west. Table 4.1-2 summarizes the representative annual air quality data for all criteria pollutants in the Plan Area for 2016 and 2017 at the Berkeley-Aquatic Park Monitoring Station. Data from 2015 is not available at the Berkeley-Aquatic Center Monitoring Station. Therefore, 2015 data shown in Table 4.1-2 is from the Oakland-West Monitoring Station, approximately 2.5 miles south of the Plan Area. Data for PM<sub>10</sub> is not available in Alameda County.

**Table 4.1-2 Ambient Air Quality Data**

Pollutant	2015	2016	2017
Ozone (ppm), Worst 1-Hour	0.091	0.052	0.058
Number of days of State exceedances (>0.09 ppm)	0	0	0
Ozone (ppm), 8-Hour Average	0.064	0.041	0.049
Number of days of State exceedances (>0.07 ppm)	0	2	0
Number of days of Federal exceedances (>0.07 ppm)	0	2	0
Nitrogen Dioxide (ppm), Worst 1-Hour	0.057	0.050	0.123
Number of days of State exceedances (>0.25 ppm)	0	0	0
Number of days of Federal exceedances (>0.075 ppm)	0	0	1
Particulate Matter <10 microns, µg/m <sup>3</sup> , Worst 24 Hours	*	*	*
Number of days above State standard (>50 µg/m <sup>3</sup> )	*	*	*
Number of days above Federal standard (>150 µg/m <sup>3</sup> )	*	*	*
Particulate Matter <2.5 microns, µg/m <sup>3</sup> , Worst 24 Hours	38.7	17.3	52.0
Number of days above Federal standard (>35 µg/m <sup>3</sup> )	3	0	7

ppm = parts per million; µg/m<sup>3</sup> = micrograms per cubic meter

\* There was insufficient (or no) data available to determine the value.

Oakland-9925 International Boulevard Monitoring Station was used for all pollutants, except PM<sub>10</sub>, which used data from the Concord-2975 Treat Boulevard Monitoring Station.

Source: CARB 2017

### c. Regulatory Setting

The Federal Clean Air Act (CAA) governs air quality in the United States. In addition to being subject to federal requirements, air quality in California is governed by more stringent regulations under the California Clean Air Act. At the federal level, the USEPA administers the CAA, and at the State level, CARB administers CAA. The air quality management districts administer these regulations at the regional and local levels. The BAAQMD regulates air quality at the regional level, which includes the nine-county Bay Area.

#### Federal

The USEPA is responsible for enforcing the federal CAA. It is also responsible for establishing the NAAQS. The NAAQS are required under the 1977 CAA and subsequent amendments. The USEPA regulates emission sources 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, CARB has been part of the California Environmental Protection Agency since 1991, and is responsible for meeting the State requirements of the federal CAA, administering the California CAA, and establishing the CAAQS. The California CAA, as amended in 1992, requires all air districts in California to endeavor to achieve and maintain the CAAQS. The CAAQS are more stringent generally than the corresponding federal standards and incorporate additional standards for sulfates, hydrogen sulfide, vinyl chloride and visibility reducing particles. 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 air pollution control districts and air quality management districts that, in turn, administer air quality activities at the regional and county level.

## Regional

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 O<sub>3</sub> precursors (including transport of ozone and its precursors to neighboring air basins), PM, and 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).

## Local

The City of Berkeley General Plan Environmental Management Element contains the following policies specific to air quality:

**Policy EM-5 “Green” Buildings.** Promote and encourage compliance with “green” building standards

**Policy EM-8 Building Reuse and Construction Waste.** Encourage rehabilitation and reuse of buildings whenever appropriate and feasible in order to reduce waste, conserve resources and energy, and reduce construction costs.

**Policy EM-18 Regional Air Quality Action.** Continue working with the Bay Area Air Quality Management District and other regional agencies to:

1. Improve air quality through pollution prevention methods.
2. Ensure enforcement of air emission standards.
3. Reduce local and regional traffic (the single largest source of air pollution in the city) and promote public transit.
4. Promote regional pollution prevention plans for business and industry.
5. Promote strategies to reduce particulate pollution from residential fireplaces and wood-burning stoves.
6. Locate parking appropriately and provide signage to reduce unnecessary “circling” and searching for parking.

**Policy EM-19 15% Emissions Reduction:** Global Warming Plan. Make efforts to reduce emissions by 15% by the year 2010.

#### d. Sensitive Receptors

The ambient air quality standards described above were established to represent the levels of air quality considered sufficient, with an adequate margin of safety, to protect public health and welfare. They are designed to protect that segment of the public most susceptible to respiratory distress, such as children under 14, persons over 65, persons engaged in strenuous work or exercise, and people with cardiovascular and chronic respiratory diseases. According to BAAQMD these sensitive receptors include residences, schools and school yards, parks and playgrounds, daycare centers, nursing homes, and medical facilities (BAAQMD 2017a). The majority of air pollution sensitive receptor locations are therefore residences, schools, and hospitals. The Plan Area contains a wide range of commercial, civic, cultural, residential, and transportation-related land uses. In addition, the Plan Area is surrounded by residential uses which are characterized by well-established neighborhoods with a mix of single-family and small multi-family developments. These residential areas are occasionally traversed by streets that are roughly parallel with or intersect Shattuck Avenue and Adeline Street (e.g., Martin Luther King Jr. Way, Sacramento Street, Telegraph Avenue, Ashby Avenue and Alcatraz Avenue).

BAAQMD recommends that general plans include buffer zones to separate sensitive receptors from sources of TACs and odors. In April 2005, CARB released the final version of the *Air Quality and Land Use Handbook*, which is intended to encourage local land use agencies to consider the risks from air pollution prior to making decisions that approve the siting of new sensitive receptors (e.g. homes or daycare centers) near sources of air pollution. Unlike industrial or stationary sources of air pollution, siting of new sensitive receptors does not require air quality permits, but could create air quality problems. The primary purpose of the handbook is to highlight the potential health impacts associated with proximity to common air pollution sources, so that those issues are considered in the planning process. CARB makes recommendations regarding the siting of new sensitive land uses near freeways, truck distribution centers, dry cleaners, gasoline dispensing stations, and other air pollution sources. These recommendations are based primarily on modeling information and may not be entirely reflective of conditions in the Plan Area. The *Air Quality and Land Use Handbook* notes that siting of new sensitive land uses within these distances may be possible, but recommends that site-specific studies be conducted to identify actual health risks. CARB acknowledges that land use agencies have to balance other siting considerations such as housing and transportation needs, economic development priorities and other quality of life issues. CARB recommends avoiding siting new sensitive land uses

within 500 feet of a freeway, urban roads with 100,000 vehicles per day, or rural roads with 50,000 vehicles per day (CARB 2005).

## 4.1.2 Impact Analysis

### a. Methodology and Significance Thresholds

This analysis uses BAAQMD's May 2017 *CEQA Air Quality Guidelines* to evaluate potential air quality impacts associated with implementation of the proposed Specific Plan. The plan-level thresholds in the May 2017 *BAAQMD CEQA Air Quality Guidelines* were used for this analysis to determine whether the impacts of the Specific Plan exceed the thresholds identified in Appendix G of the CEQA Guidelines.

### Significance Thresholds

Air quality impacts would be significant if they would exceed the following thresholds of significance, which are based on Appendix G of the *CEQA Guidelines* and the May 2017 *BAAQMD CEQA Air Quality Guidelines*:

1. Conflict with or obstruct implementation of the applicable air quality plan
2. Violate any air quality standard or contribute substantially to an existing or projected air quality violation
3. Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or State ambient air quality standard (including releasing emissions which exceed qualitative thresholds for ozone precursors)
4. Expose sensitive receptors to substantial pollutant concentrations
5. Create objectionable odors affecting a substantial number of people

#### *Short-Term Emissions*

The BAAQMD's 2017 *CEQA Air Quality Guidelines* have no plan-level significance thresholds for construction air pollutants emissions. However, they do include individual project-level thresholds for temporary construction-related and long-term operational emissions of air pollutants. These thresholds represent the levels at which a project's individual emissions of criteria air pollutants or precursors would result in a cumulatively considerable contribution to the SFBAAB's existing air quality conditions (BAAQMD 2017a).

#### *Long-Term Emissions*

The BAAQMD's 2017 *CEQA Air Quality Guidelines* contain specific operational plan-level significance thresholds for criteria air pollutants. Plans must show the following over the planning period:

- Consistency with current air quality plan control measures
- VMT or vehicle trips increase is less than or equal to the Specific Plan's projected population increase

If a plan can demonstrate consistency with both of these criteria then impacts are considered less than significant.

## Methodology for Estimating Emissions

### *Short-Term Emissions*

Construction-related emissions are generally short-term in duration, but may still cause adverse air quality impacts. Construction of new development and right-of-way improvements in the Plan Area would generate temporary emissions from three primary sources: the operation of construction vehicles (e.g., scrapers, loaders, dump trucks); ground disturbance during site preparation and grading, which creates fugitive dust; and the application of asphalt, paint, or other oil-based substances.

Development associated with implementation of the proposed Specific Plan would result in temporary construction-related and long-term operational emissions. At this time, there are no specific projects associated with the proposed Specific Plan. Therefore, projects are not defined to a level that would allow project-level analysis and thus it would be speculative to include project-level impacts as part of this analysis. Rather, impacts for the Specific Plan as a whole are discussed qualitatively.

### *Long-Term Emissions*

Per plan-level guidance from the BAAQMD 2017 *CEQA Air Quality Guidelines* long-term operational emissions associated with implementation of the proposed Specific Plan are discussed qualitatively using a comparison of the Specific Plan to the 2017 Plan goals, polices, and control measures. In addition, a comparison of VMT and population increase is recommended by BAAQMD for determining significance of criteria pollutants. If the proposed Specific Plan does not meet either criterion then impacts would be potentially significant.

### *Toxic Air Contaminants*

According to the BAAQMD *CEQA Air Quality Guidelines* (2017a), for general and area plans to have a less-than-significant impact with respect to potential TACs special overlay zones need to be established around existing and proposed land uses that emit TACs. Special overlay zones should be included in proposed plan policies, land use maps, and implementing ordinances. The thresholds of significance for plans with regard to community risk and hazard impacts are:

1. The land use diagram must identify:
  - a. Special overlay zones around existing and planned sources of TACs
  - b. Special overlay zones of at least 500 feet (or BAAQMD-approved modeled distance) on each side of all freeways and high-volume roadways
2. The plan must also identify goals, policies, and objectives to minimize potential impacts and create overlay zones for sources of TACs and receptors.

According to BAAQMD, the Lead Agency should refer to CARB's 2005 *Air Quality and Land Use Handbook* when evaluating whether the proposed general or area plan includes adequate buffer distances between TAC sources and sensitive receptors. As stated above, CARB recommends avoiding siting new sensitive land uses within 500 feet of a freeway or urban roads with 100,000 vehicles per day.

## b. Project Impacts and Mitigation Measures

<b>Threshold 1:</b> Would the Specific Plan conflict with or obstruct implementation of the applicable air quality plan?
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**Impact AQ-1** THE PROPOSED SPECIFIC PLAN WOULD BE CONSISTENT WITH BAAQMD'S 2017 CLEAN AIR PLAN. IMPACTS WOULD BE LESS THAN SIGNIFICANT.

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### Specific Plan Consistency with Current Air Quality Plan

The most recently adopted air quality plan in the SFBAAB is the 2017 Plan. The 2017 Plan is a roadmap showing how the San Francisco Bay Area will achieve compliance with the State one-hour ozone standard as expeditiously as practicable, and how the region will reduce transport of ozone and ozone precursors to neighboring air basins (BAAQMD 2017b). The 2017 Plan does not include control measures that apply directly to individual development projects; instead, the control strategy includes stationary-source control measures to be implemented through the BAAQMD regulations; mobile-source control measures to be implemented through incentive programs and other activities; and transportation control measures to be implemented through transportation programs in cooperation with the Metropolitan Transportation Commission, local governments, transit agencies, and others. The 2017 Plan also represents the Bay Area's most recent triennial assessment of the region's strategy to attain the state one-hour ozone standard. In this, the 2017 Plan replaces the 2010 Plan. Under BAAQMD's methodology, a determination of consistency with *CEQA Guidelines* thresholds should demonstrate that a project:

- Supports the primary goals of the Clean Air Plan
- Includes applicable control measures from the Clean Air Plan
- Does not disrupt or hinder implementation of any Clean Air Plan control measures

The following includes a discussion of consistency with these three criteria.

### Support the Primary Goals of the Clean Air Plan

The primary goals of the 2017 Plan are to:

- Protect air quality and health at the regional and local scale
- Protect the climate

Any project that would not support these 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 Plan goals. Approval of the proposed Specific Plan would not result in significant and unavoidable criteria pollutant emissions or other significant air quality impacts or increase population and employment at a greater rate than assumed in the 2017 Plan (see Section 4.10, *Population and Housing*, which shows that population estimates would be within regional population projections for the City). In addition, the proposed Specific Plan includes policies that would reduce vehicle trips and emissions. The goal of the Transportation Chapter of the Specific Plan is to provide safe and sustainable transportation, while continuing to serve automobiles. Specifically, Policy 6.1 supports the creation of complete streets along Adeline Street and cross streets to provide safe and convenient travel for all transportation modes including, pedestrians, bicyclists, and transit users. Transportation Policy 6.4 and Policy 6.5 involves

improving pedestrian and bicycle facilities and amenities, respectively, that create a safe and attractive environment that encourages increased pedestrian and bicycle activity and reduces dependency on automobiles. In addition, the Plan Area includes the Ashby BART station and multiple bus stations. The project would increase density near these transit stations allowing increased ridership. Transportation Chapter Policy 6.7 would support continued use and improvements to bus transit services along the Adeline Corridor, especially in important high-value destinations, such as the Ashby BART location, which are locations where multiple transit lines intersect, and/or at major street connections. These policies are designed to reduce vehicle trips and thus would reduce emissions associated with the Specific Plan. Therefore, the proposed Specific Plan would support the primary goals of the 2017 Plan.

### Include Applicable 2017 Clean Air Plan Control Strategies

The Bay Area 2017 Plan contains 85 control strategies aimed at reducing air pollution and protecting the climate in the Bay Area. For consistency with climate planning efforts at the State level, the control strategies in the 2017 Plan are based on the same economic sector framework used by CARB, which encompass stationary sources, transportation, energy, buildings, agriculture, natural and working lands, waste management, water, and super-greenhouse gas pollutants. Table 4.1-3 identifies applicable control measures and correlates the measures to specific elements of the proposed Specific Plan.

Table 4.1-3 2017 Clean Air Plan Control Measures

Control Measures	Consistency
<b>Transportation</b>	
<p><b>TR2: Trip Reduction Programs.</b> Implement the regional Commuter Benefits Program (Rule 14-1) that requires employers with 50 or more Bay Area employees to provide commuter benefits. Encourage trip reduction policies and programs in local plans, e.g., general and specific plans while providing grants to support trip reduction efforts. Encourage local governments to require mitigation of vehicle travel as part of new development approval, to adopt transit benefits ordinances in order to reduce transit costs to employees, and to develop innovative ways to encourage rideshare, transit, cycling, and walking for work trips. Fund various employer-based trip reduction programs.</p>	<p><b>Consistent:</b> The Specific Plan would allow for compatible land uses near the Ashby BART station and multiple bus routes. The Specific Plan includes designs intended to improve connections and enhance walkability and bicycling along the existing corridor. The following Transportation Chapter policies from the Specific Plan promote interconnected modes of transportation.</p> <p><b>6.1: <i>Humanizing the Street.</i></b> Support the creation of Complete Streets in future design and improvements to the transportation system along Adeline Street and cross streets.</p> <p><b>6.2: <i>Long Term Right-of-Way Redesign.</i></b> Explore options to redesign the Adeline Street and South Shattuck right-of-way to provide better public space, improve multi-modal transportation access, make it more attractive, and make it safer for persons of all means and abilities.</p> <p><b>6.4: <i>Pedestrian Circulation.</i></b> Improve pedestrian facilities and amenities that create a safe and attractive environment that encourages walking and accommodates increased pedestrian activity.</p> <p><b>6.5: <i>Bicycle Facilities.</i></b> In the short term, focus bicycle facility improvements on locations where the Berkeley Bicycle Plan’s existing and planned bicycle network crosses Adeline.</p> <p>Finally, the Specific Plan outlines parking management and transportation demand (TDM) strategies as part of Policy 6.7 to reduce traffic and the Plan Area’s overall automobile trip generation in comparison with more traditional developments. Strategies to reduce traffic include encouraging car-pooling, bicycling, and walking and implementing reduce parking requirements for new development projects.</p>

Control Measures	Consistency
<p><b>TR9: Bicycle and Pedestrian Access and Facilities.</b> Encourage planning for bicycle and pedestrian facilities in local plans, e.g., general and specific plans, fund bike lanes, routes, paths and bicycle parking facilities.</p>	<p><b>Consistent:</b> Policies in the Specific Plan support an efficient and safe bicycle and pedestrian system that would improve the connectivity and accessibility throughout the City and encourage bicycling and pedestrian transportation. The Specific Plan would promote walkability because the Specific Plan’s standards and guidelines for the local pedestrian network are designed to ensure a safe and comfortable pedestrian environment as development in the Plan Area occurs over time. The Specific Plan would address current walkability challenges in the Plan Area by connecting the pedestrian network and providing safe movement for pedestrians. Standards related to the bicycle network in the Specific Plan are intended to provide a continuous and connected bikeway system to encourage non-motorized travel, provide recreational opportunities, and create links to other modes of transportation, such as transit at the Ashby BART station. In addition, part of the planning framework of the Specific Plan is to improve mobility for persons of all means and abilities, which includes new bicycle facilities integrated with the citywide bicycle network and new pedestrian improvements focused on intersection crossing safety. The following Transportation Chapter policies from the Specific Plan promote bicycle and pedestrian facilities.</p> <p><b>6.1: Humanizing the Street.</b> Support the creation of Complete Streets in future design and improvements to the transportation system along Adeline Street and cross streets.</p> <p><b>6.2: Long Term Right-of-Way Redesign.</b> Explore options to redesign the Adeline Street and South Shattuck right-of-way to provide better public space, improve multi-modal transportation access, make it more attractive, and make it safer for persons of all means and abilities.</p> <p><b>6.4: Pedestrian Circulation.</b> Improve pedestrian facilities and amenities that create a safe and attractive environment that encourages walking and accommodates increased pedestrian activity.</p> <p><b>6.5: Bicycle Facilities.</b> In the short term, focus bicycle facility improvements on locations where the Berkeley Bicycle Plan’s existing and planned bicycle network crosses Adeline.</p>
<p><b>TR13: Parking Policies.</b> Encourage parking policies and programs in local plans, e.g., reduce minimum parking requirements; limit the supply of off-street parking in transit-oriented areas; unbundle the price of parking spaces; support implementation of demand-based pricing (such as “SF Park”) in high-traffic areas.</p>	<p><b>Consistent:</b> The Specific Plan aims to balance parking needs in the Plan Area for commercial businesses and residents, while encouraging car-pooling, bicycling, and walking. Therefore, the City encourages reduced amounts of parking for new development projects through Policy 6.7 Parking and Transportation Demand Management. The Specific Plan provides guidelines related to the provision of off-street parking within the Plan Area. The provision of parking allows for development patterns supportive of walking and transit use.</p>
<b>Energy</b>	
<p><b>EN2: Decrease Electricity Demand.</b> Work with local governments to adopt additional energy-efficiency policies and programs. Support local government energy efficiency program via best practices, model ordinances, and technical support. Work with partners to develop messaging to decrease electricity demand during peak times.</p>	<p><b>Consistent:</b> Development projected by Specific Plan would be required to comply with all energy standards of Title 24 that are in effect at that time. The 2016 Title 24 standards are approximately 28% more efficient than the 2013 standards. The 2013 Title 24 standards were approximately 30% more efficient than the 2008 standards, which in turn were approximately 15% more efficient than the 2005 standards. In addition, according to SB 100, which sets California on the path to 100% renewable energy by 2045, energy resources and zero-carbon resources must supply 100 percent of retail sales of electricity in California to end-use customers by 2045.</p>

Control Measures	Consistency
<b>Buildings</b>	
<p><b>BL1: Green Buildings.</b> Collaborate with partners such as KyotoUSA to identify energy-related improvements and opportunities for on-site renewable energy systems in school districts; investigate funding strategies to implement upgrades. Identify barriers to effective local implementation of the CALGreen (Title 24) statewide building energy code; develop solutions to improve implementation/enforcement. Work with ABAG’s BayREN program to make additional funding available for energy-related projects in the buildings sector. Engage with additional partners to target reducing emissions from specific types of buildings.</p>	<p><b>Consistent:</b> Development projected by Specific Plan would be required to comply with all energy standards of Title 24 that are in effect at that time. The 2016 Title 24 standards are approximately 28% more efficient than the 2013 standards. The 2013 Title 24 standards were approximately 30% more efficient than the 2008 standards, which in turn were approximately 15% more efficient than the 2005 standards.</p>
<b>Water Control Measures</b>	
<p><b>WR2: Support Water Conservation.</b> Develop a list of best practices that reduce water consumption and increase on-site water recycling in new and existing buildings; incorporate into local planning guidance.</p>	<p><b>Consistent:</b> Development projected by Specific Plan would be required to comply with all energy standards of Title 24 that are in effect at that time. The 2016 Title 24 standards are approximately 28% more efficient than the 2013 standards. The 2013 Title 24 standards were approximately 30% more efficient than the 2008 standards, which in turn were approximately 15% more efficient than the 2005 standards. In addition, in compliance with State requirements, the City of Berkeley requires projects with new landscape area of 500 square feet or greater and renovated landscape area of 2,500 square feet or greater to comply with the California Water Efficient Landscape Ordinance, which requires landscape irrigation water conservation best practices. Applicants for new or expanded water service are also required to comply with EBMUD’s Section 31 water efficiency regulations.</p>

Table 4.1-3 shows the Specific Plan would not disrupt or hinder implementation of 2017 Plan control measures, and would implement a number of strategies outlined in the 2017 Plan to improve local emissions. Therefore, the Specific Plan would be consistent with the applicable control strategies contained in the 2017 Plan for the SFBAAB.

### Implementation of 2017 Clean Air Plan Control Measures

Development under the proposed Specific Plan would be required to be consistent with BAAQMD rules and regulations, including dust and diesel particulate matter reduction measures and would not otherwise cause the disruption, delay or otherwise hinder the implementation of any air quality plan control measure. Buildout of the Specific Plan would not preclude planned transit or bike pathways, and would not otherwise disrupt regional planning efforts to reduce VMT and meet federal and State air quality standards.

#### *Specific Plan VMT and Population*

According to the BAAQMD 2017 *CEQA Air Quality Guidelines*, the threshold for criteria air pollutants and precursors includes an assessment of the rate of increase of plan VMT and population. As shown in Section 4.13, *Transportation and Traffic*, compared to 2040 No

Project Conditions, the proposed Specific Plan would decrease per capita daily VMT in the Plan Area from 9.9 to 9.2. Therefore, the rate of increase from proposed VMT from plan buildout would not exceed the rate of increase from the proposed population without the Specific Plan. Impacts to criteria pollutants would be less than significant.

### Mitigation Measures

No mitigation measures are required.

**Threshold 2:** Would the Specific Plan violate any air quality standard or contribute substantially to an existing or projected air quality violation?

**Threshold 3:** Would the Specific Plan 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 (including releasing emissions, which exceed quantitative thresholds for ozone precursors)?

**Threshold 4:** Would the Specific Plan expose sensitive receptors to substantial pollutant concentrations?

**Impact AQ-2** BUILDOUT OF THE PROPOSED SPECIFIC PLAN WOULD RESULT IN THE TEMPORARY GENERATION OF AIR POLLUTANTS DURING CONSTRUCTION, WHICH WOULD AFFECT LOCAL AIR QUALITY. COMPLIANCE WITH THE BAAQMD BASIC CONSTRUCTION MITIGATION MEASURES WOULD REQUIRE FUTURE PROJECTS WITHIN THE PLAN AREA TO IMPLEMENT MEASURES TO REDUCE CONSTRUCTION EMISSIONS. IMPACTS WOULD BE SIGNIFICANT BUT MITIGABLE TO LESS THAN SIGNIFICANT.

Construction of individual projects and right-of-way improvements that could be developed under the proposed Specific Plan would involve activities that result in air pollutant emissions. Construction activities such as demolition, grading, construction worker travel to and from project sites, delivery and hauling of construction supplies and debris to and from project sites, and fuel combustion by on-site construction equipment would generate pollutant emissions. These construction activities would temporarily create emissions of dust, fumes, equipment exhaust, and other air contaminants, particularly during site preparation and grading. The extent of daily emissions, particularly ROG<sub>x</sub> and NO<sub>x</sub> emissions, generated by construction equipment, would depend on the quantity of equipment used and the hours of operation for each project. The extent of PM<sub>2.5</sub> and PM<sub>10</sub> 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. Dust emissions can lead to both nuisance and health impacts. According to the 2017 BAAQMD *CEQA Air Quality Guidelines* PM<sub>10</sub> is the greatest pollutant of concern during construction.

As discussed above, BAAQMD's 2017 *CEQA Air Quality Guidelines* have no plan-level significance thresholds for construction air pollutant emissions. However, the guidelines include project-level thresholds for construction emissions. If a project's construction emissions fall below the project-level thresholds, the project's impacts to regional air quality are considered individually and cumulatively less than significant. The BAAQMD has also identified feasible fugitive dust control measures for construction activities. These Basic Construction Mitigation measures are recommended for all projects (BAAQMD 2017a). In addition, the BAAQMD and CARB have regulations that address the handling of hazardous air pollutants such as lead and asbestos. Lead and asbestos emissions could occur from demolition activities and asbestos emissions. BAAQMD rules and regulations address both

the handling and transport of these contaminants. Construction associated with development of projects under the proposed Specific Plan would temporarily increase air pollutant emissions, possibly creating localized areas of unhealthy air pollution levels or air quality nuisances. Therefore, construction air quality impacts would be potentially significant. However, all development projects in Berkeley are required to comply with standard conditions of approval for use permits under the Zoning Ordinance. This includes the following:

**Air Quality – Diesel Particulate Matter Controls During Construction.** All off-road construction equipment used for projects with construction lasting more than 2 months shall comply with **one** of the following measures:

- A. The project applicant shall prepare a health risk assessment that demonstrates the project's on-site emissions of diesel particulate matter during construction will not exceed health risk screening criteria after a screening-level health risk assessment is conducted in accordance with current guidance from BAAQMD and OEHHA. The health risk assessment shall be submitted to the Public Works Department for review and approval prior to the issuance of building permits.
- B. All construction equipment shall be equipped with Tier 2 or higher engines and the most effective Verified Diesel Emission Control Strategies (VDECS) available for the engine type (Tier 4 engines automatically meet this requirement) as certified by the California Air Resources Board (CARB). The equipment shall be properly maintained and tuned in accordance with manufacturer specifications.

In addition, a Construction Emissions Minimization Plan (Emissions Plan) shall be prepared that includes the following:

- An equipment inventory summarizing the type of off-road equipment required for each phase of construction, including the equipment manufacturer, equipment identification number, engine model year, engine certification (tier rating), horsepower, and engine serial number. For all VDECS, the equipment inventory shall also include the technology type, serial number, make, model, manufacturer, CARB verification number level, and installation date.
- A Certification Statement that the Contractor agrees to comply fully with the Emissions Plan and acknowledges that a significant violation of the Emissions Plan shall constitute a material breach of contract. The Emissions Plan shall be submitted to the Public Works Department for review and approval prior to the issuance of building permits

Therefore, with required compliance with City of Berkeley standard conditions of approval, air quality impacts would be reduced. However, the air quality standard condition of approval would not reduce impacts from fugitive dust. Impacts would be potentially significant.

## Mitigation Measures

Temporary construction impacts associated with development projected by the proposed Specific Plan would be reduced through implementation of Mitigation Measures AQ-1.

### *Mitigation Measure AQ-1 Construction Emissions Measures*

As part of the City's development approval process, the City shall require applicants for future development projects in the Plan Area to comply with the current Bay Area Air Quality

Management District's basic control measures for reducing construction emissions of PM<sub>10</sub> (Table 8-2, Basic Construction Mitigation Measures Recommended for All Proposed Projects, of the May 2017 BAAQMD CEQA Guidelines).

### Significance After Mitigation

Impacts would be less than significant with implementation of Mitigation Measure AQ-1 to require the BAAQMD Basic Construction Measures and required application of the City's air quality standard condition of approval.

**Threshold 4:** Would the Specific Plan expose sensitive receptors to substantial pollutant concentrations?

**Impact AQ-3** BUILDOUT OF THE PROPOSED SPECIFIC PLAN MAY EXPOSE SENSITIVE RECEPTORS TO ADDITIONAL SOURCES OF TOXIC AIR CONTAMINANTS. IMPACTS WOULD BE SIGNIFICANT BUT MITIGABLE TO LESS THAN SIGNIFICANT.

Pursuant to the recent ruling in the *California Building Industry Association (CBIA) v BAAQMD* (2015), impacts of the environment on the project is not an impact under CEQA. Nonetheless, BAAQMD's CEQA Guidelines include methodology for jurisdictions wanting to evaluate the potential impacts from placing sensitive receptors proximate to major air pollutant sources. For assessing community risk and hazards for siting a new receptor, sources within a 1,000-foot radius of a project site are typically considered. Sources are defined as freeways, high volume roadways (with volume of 10,000 vehicles or more per day or 1,000 trucks per day), and permitted sources (BAAQMD 2017a).

Under the proposed Specific Plan, new auto services/sales uses would be prohibited, however, new gas stations although unlikely in the Plan Area, would still be allowed in the C-SA zone upon approval of a Use Permit/Public Hearing. Therefore, the Specific Plan could increase the number of stationary or permitted sources that emit TACs in the Plan Area. Additionally, there are several high volume roadways and freeways in and around the Plan Area, including Highway 24, Shattuck, and Adeline Street. Therefore, the Specific Plan may place new sensitive receptors in proximity to these high volume roadways and freeways and expose these receptors to sources of TACs. The proposed Specific Plan does not include goals or policies to minimize health risk of sensitive receptors near stationary sources and/or freeways and high volume roadways. Therefore, mitigation would be required to ensure sensitive receptors would not be exposed to substantial pollutant concentrations.

### Mitigation Measures

The following mitigation measure is required.

#### *Mitigation Measure AQ-2 Health Risk Assessments*

As part of the City's development approval process, the City shall require applicants for future development projects in the Plan Area to implement the Bay Area Air Quality Management District Guidelines and State Office of Environmental Health Hazard Assessment policies and procedures requiring health risk assessments (HRA) for residential development and other sensitive receptors near sources of toxic air contaminants, including freeways and roadways with over 10,000 vehicles per day. Based on the results of the HRA, identify and implement measures (such as air filtration systems, waterproofed caulking on windows and doors, and/or requirements for closed windows) to reduce potential exposure

to particulate matter, carbon monoxide, diesel fumes, and other potential health hazards. Measures identified in HRAs shall be included into the site development plan as a component of a proposed project.

### Significance After Mitigation

With implementation of Mitigation Measure AQ-2, impacts related to TACs would be less than significant.

<b>Threshold 5:</b> Would the Specific Plan expose sensitive receptors to substantial pollutant concentrations?
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**Impact AQ-4** THE PROPOSED SPECIFIC PLAN WOULD NOT CREATE OBJECTIONABLE ODORS THAT WOULD AFFECT NEIGHBORING PROPERTIES. IMPACTS RELATED TO ODORS WOULD BE LESS THAN SIGNIFICANT.

Land uses typically producing objectionable odors include agricultural uses, wastewater treatment plants, food processing plants, chemical plants, compost facilities, refineries, landfills, dairies, and fiberglass molding. The proposed Specific Plan does not include uses associated with objectionable odors and does not support industrial uses. Odor emissions from the proposed Specific Plan would be limited to those associated with vehicle and engine exhaust and idling, as well as odors from other uses such as restaurants. However, uses under the proposed Specific Plan would not include known sources of objectionable odors for long-term operations. During construction activities, only temporary odors from vehicle exhaust and construction equipment engines would occur. Construction-related odors would cease upon completion. Therefore, the proposed Specific Plan would not result in significant impacts related to objectionable odors during construction or operation.

### Mitigation Measures

No mitigation measures are required.

#### c. Cumulative Impacts

As described in Subsection 4.1.1(b), the SFBAAB is in nonattainment for the federal standards for O<sub>3</sub> and PM<sub>2.5</sub> and for the State standard for O<sub>3</sub>, PM<sub>10</sub>, and PM<sub>2.5</sub>. According to BAAQMD's *CEQA Air Quality Guidelines*, by its very nature, air pollution is largely a cumulative impact. No single project is sufficient in size by itself to result in nonattainment of ambient air quality standards. Instead, a project's individual emissions contribute to the existing nonattainment status and associated cumulatively significant adverse air quality impacts. However, based on BAAQMD's operational plan-level thresholds, as discussed under Impact AQ-1, the project is consistent with the 2017 Clean Air Plan and is consistent with the applicable 2017 Clean Air Plan Control Strategies. Further, compared to 2040 No Project Conditions, the proposed Specific Plan would decrease per capita daily VMT in the Plan Area. Lastly, development under the Specific Plan would be required to comply with basic construction control measures (required by BAAQMD) which would reduce construction-related emissions associated with Specific Plan implementation. Overall, the Specific Plan would not have a cumulatively considerable contribution to regional air quality. Therefore, cumulative impacts to air quality would be less than significant.

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## 4.2 Biological Resources

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This section analyses the proposed Specific Plan's impacts related to biological resources.

### 4.2.1 Setting

#### a. Plan Area Setting

The Plan Area encompasses approximately 86 acres of land and contains a wide range of commercial, civic, cultural, and residential land uses. The Plan Area is characterized by a varied street environment and approximately 38 acres of right-of-way (e.g., streets and sidewalks) used for multiple modes of transportation. The remaining area is developed with commercial uses, public, civic, or institutional uses, residential uses, and a small portion of parking, warehouse or mixed uses, and vacant lots. The immediate vicinity surrounding the Plan Area is almost entirely intensive urban uses and development.

#### Habitats

The Plan Area is urbanized and does not include substantial areas of open space or undeveloped, unpaved land. Developed areas correspond with the urban land cover type described in the California Wildlife Habitat Relationships (California Department of Fish and Wildlife [CDFW], 2018c; Mayer and Laudenslayer, 1988). As such, vegetation is limited largely to landscaping in commercial areas, residential neighborhoods, and along park strips and street medians. Plant species in urban areas are highly variable, and vegetation structure includes shade/street trees, lawns, and shrub cover.

Some ruderal vegetation occurs along roadsides and vacant lots. Ruderal vegetation is associated with urban areas where substantial ground disturbance activities occur. Ruderal areas are often found along roadsides, fence-lines, and in areas undergoing urban development. Ruderal plant communities are not described by Holland (1986), Sawyer et al. (2009), or Mayer and Laudenslayer (1988). They are typically dominated by herbaceous plants (i.e., forbs) such as mustards (*Brassica spp.*), wild radish (*Raphanus sativus*), and mallows (*Malva spp.*), and include many non-native annual grasses such as ripgut brome (*Bromus diandrus*), wild oats (*Avena spp.*), and foxtail barley (*Hordeum murinum*).

#### Waterways and Drainages

There are no mapped or designated federally or State protected wetlands within the Plan Area (U.S. Fish and Wildlife Service [USFWS] 2018c). The Plan Area does not contain aquatic features that would fall under regulatory jurisdiction of the U.S. Army Corps of Engineers (USACE), the Regional Water Quality Control Board (RWQCB), or CDFW. Likewise, there are no creeks or natural waterways within the Plan Area, as the surrounding vicinity is highly urbanized and developed. Underground water drainages and culverts are the only water courses or water bodies in the Plan Area. Figure 4.7-1 in Section 4.7, *Hydrology and Water Quality*, shows stormwater, drainage, and creeks in the vicinity of the Plan Area.

#### Special Status Biological Resources

For the purpose of this EIR, special status species are those plants and animals listed, proposed for listing, or candidates for listing as threatened or endangered by the USFWS or National Marine Fisheries Service (NMFS) under the Federal Endangered Species Act

(FESA); those listed or proposed for listing as rare, threatened, or endangered by the California Department of Fish and Wildlife (CDFW) under the California Endangered Species Act (CESA); animals designated as “Species of Special Concern,” “Fully Protected,” or “Watch List” by the CDFW; and plants with a California Rare Plant Rank (CRPR) of 1 and 2, which are defined as follows:

- **List 1A** = Plants presumed extinct in California
- **List 1B.1** = Rare or endangered in California and elsewhere; seriously endangered in California (over 80 percent of occurrences threatened/high degree and immediacy of threat)
- **List 1B.2** = Rare or endangered in California and elsewhere; fairly endangered in California (20-80 percent occurrences threatened)
- **List 1B.3** = Rare or endangered in California and elsewhere, not very endangered in California (<20 percent of occurrences threatened, or no current threats known)
- **List 2** = Rare, threatened or endangered in California, but more common elsewhere

Queries were conducted of the USFWS Information, Planning and Conservation System (IPaC) (USFWS 2018a), USFWS Critical Habitat Portal (USFWS 2018b), California Natural Diversity Database (CNDDDB) (CDFW 2018a), and California Native Plant Society (CNPS) *Online Inventory of Rare and Endangered Plants of California* (CNPS 2018). The queries were conducted to obtain comprehensive information regarding federally and State listed species, sensitive communities, and federally designated Critical Habitat known to or considered to have potential to occur within the Plan Area.

### Sensitive Communities and Critical Habitat

No natural communities considered sensitive by the CDFW occur in the Plan Area, but the CNDDDB lists two sensitive natural communities that occur within a 5-mile radius of the Plan Area. Federally designated critical habitat for one species also occurs within a 5-mile radius of the Plan Area. Table 4.2-1 lists these sensitive communities and critical habitat.

**Table 4.2-1 Sensitive Communities and Critical Habitats Documented within a Five-mile Radius of the Plan Area**

<b>Communities Considered Sensitive by the CDFW</b>
Northern Coastal Salt Marsh
Northern Maritime Chaparral
<b>Critical Habitat</b>
Alameda Whipsnake ( <i>Masticophis lateralis</i> )

Source: CNDDDB (CDFW 2018a); Critical Habitat Portal (USFWS 2018b)

## Special Status Plant and Animal Species

The San Francisco Bay Area is home to several species protected by federal and State agencies. Queries were conducted of the CNDDDB (CDFW 2018a), CNPS (2018), and USFWS IPaC (2018a) to obtain comprehensive information regarding federally and State listed species, as well as other special status species and sensitive plant communities considered to have potential to occur or known to occur in the *Oakland West*, California USGS 7.5-minute topographic quadrangle and/or surrounding eight quadrangles (*Oakland East*, *San Leandro*, *Hunters Point*, *San Francisco South*, *San Francisco North*, *San Quentin*, *Richmond*, and *Briones Valley*). The results of these scientific database queries were compiled into Table B-1 and Table B-2 included in Appendix B. A total of 110 special status plants and 122 special status animals were identified by these queries. Of those, 64 have known occurrences within a 5-mile radius of the Plan Area, although none of these were recorded in the Plan Area itself. Many of these species have sensitivity ratings below the threshold for significant impacts under CEQA from development in urban settings such as South Berkeley. Two special status bats are known to occur within the Plan Area or in the immediate vicinity. These species include:

### *Big-free Tailed Bat*

The big-free tailed bat (*Nyctinomops macrotis*) is a CDFW Species of Special Concern in the family Molossidae. The big-free tailed bat occurs in rugged rocky habitats in arid landscapes and is associated with plant communities such as desert shrub, woodlands and evergreen forest. Big-free tailed bats roost mainly in crevices and rocks, although they have been recorded in urban areas as well. This species is listed as a species of special concern in California. The big-free tailed bat occurrence records in the Plan Area are distributed in a range loosely spanning the northern portion of the Plan Area and extending north from Ashby Avenue.

### *Pallid Bat*

The pallid bat (*Antrozous pallidus*) is a CDFW Species of Special Concern in the family Vespertilionidae. In California, the species occurs throughout California in a variety of habitats including low desert, oak woodland and coastal redwood forests, extending up to 3,000 meters elevation in the Sierra Nevada. This species is listed as a species of special concern. Pallid bat occurrence records in the Plan Area are distributed in a range loosely spanning the northern portion of the Plan Area and extending north from Ashby Avenue.

## Wildlife Movement Corridors

Wildlife movement corridors, or habitat linkages, are generally defined as connections between habitat patches that allow for physical and genetic exchange between otherwise isolated animal populations. Such linkages may serve a local purpose, such as providing a linkage between foraging and denning areas, or they may be regional in nature. Some habitat linkages may serve as migration corridors, wherein animals periodically move away from an area and then subsequently return. Others may be important as dispersal corridors for young animals. A group of habitat linkages in an area can form a wildlife corridor network.

Wildlife movement corridors can be both large and small scale. One essential connectivity area (ECA) as mapped by the Biogeographic Information and Observation System (BIOS) is located approximately one mile west of the Plan Area (CDFW 2018b). The corridor connects several natural landscape blocks in the east San Francisco Bay Area. It extends from the

foothills southeast of San Pablo bay southeast paralleling the San Francisco Bay and connecting with the Diablo Range east of Fremont. CDFW characterizes the value of essential connectivity areas based on permeability to wildlife movements. As mapped in BIOS, the edges of the nearest connectivity area become increasingly less permeable as they extend toward Berkeley and developed areas of Alameda County. The Plan Area is not within any ECAs and given the highly urbanized nature of the area, is unlikely to function as wildlife connectivity or movement area, even on a local scale.

## **b. Regulatory Framework**

Federal, State, and local authorities share regulatory authority over biological resources under a variety of statutes and guidelines. The primary authority for general biological resources rests with the land use control and planning authority of local jurisdictions, which for this project is the City of Berkeley. The CDFW is a trustee agency for biological resources throughout California under the California Environmental Quality Act (CEQA) and has direct jurisdiction under the California Fish and Game Code, which includes, but is not limited to, resources protected by the State of California under the CESA.

### **Federal and State Jurisdictions**

#### *United States Fish and Wildlife Service*

The USFWS implements the Migratory Bird Treaty Act (16 United States Code [USC] Section 703-711) and the Bald and Golden Eagle Protection Act (16 USC Section 668). The USFWS and NMFS share responsibility for implementing the FESA (16 USC § 153 et seq.). The USFWS generally implements the FESA for terrestrial and freshwater species, while the NMFS implements the FESA for marine and anadromous species. Projects that would result in “take” of any federally listed threatened or endangered species are required to obtain permits from the USFWS and/or NMFS through either Section 7 (interagency consultation with a federal nexus) or Section 10 (Habitat Conservation Plan) of FESA, depending on the involvement by the federal government in permitting and/or funding of the project. The permitting process is used to determine if a project would jeopardize the continued existence of a listed species and what measures would be required to avoid jeopardizing the species. “Take” under federal definition means to harass, harm (which includes habitat modification), pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct. Proposed or candidate species do not have the full protection of FESA; however, the USFWS and NMFS advise project applicants that they could be elevated to listed status at any time.

#### *United States Army Corps of Engineers*

Under Section 404 of the Clean Water Act, the USACE has authority to regulate activities that result in discharge of dredged or fill material into wetlands or other “waters of the United States.” Perennial and intermittent creeks are considered waters of the United States if they are hydrologically connected to other jurisdictional waters. The USACE also implements the federal policy embodied in Executive Order 11990, intended to result in no net loss of wetlands. In achieving the goals of the Clean Water Act, the USACE seeks to avoid adverse impacts and offset unavoidable adverse impacts on existing aquatic resources. Any discharge into wetlands or other “waters of the United States” that are hydrologically connected and/or demonstrate a significant nexus to jurisdictional waters would require a permit from the USACE prior to the start of work. Typically, when a project involves impacts

to waters of the United States, the goal of no net loss of wetlands is met through compensatory mitigation involving creation or enhancement of similar habitats.

#### *California Department of Fish and Wildlife*

The CDFW derives its authority from the Fish and Game Code of California. The CESA (Fish and Game Code Section 2050 et. seq.) prohibits “take” of State-listed threatened and endangered species. Take under CESA is restricted to direct harm of a listed species and does not prohibit indirect harm by way of habitat modification. The CDFW additionally prohibits take for species designated as Fully Protected under the CFGC under various sections. Projects that would result in take of any State-listed threatened or endangered species are required to obtain an incidental take permit (ITP) pursuant to Fish and Game Code Section 2081. The issuance of an ITP is dependent upon the following: 1) the authorized take is incidental to an otherwise lawful activity; 2) the impacts of the authorized take are minimized and fully mitigated; 3) the measures required to minimize and fully mitigate the impacts of the authorized take are roughly proportional in extent to the impact of the taking on the species, maintain the applicant’s objectives to the greatest extent possible, and are capable of successful implementation; 4) adequate funding is provided to implement the required minimization and mitigation measures and to monitor compliance with and the effectiveness of the measures; and 5) issuance of the permit will not jeopardize the continued existence of a State-listed species.

California Fish and Game Code sections 3503, 3503.5, and 3511 describe unlawful take, possession, or destruction of birds, nests, and eggs. Fully protected birds (CFGC Section 3511) may not be taken or possessed except under specific permit. Section 3503.5 of the Code protects all birds-of-prey and their eggs and nests against take, possession, or destruction of nests or eggs. Species of Special Concern (SSC) is a category used by the CDFW for those species that are considered to be indicators of regional habitat changes or are considered to be potential future protected species. Species of Special Concern do not have any special legal status except those afforded by the Fish and Game Code as noted above. The SSC category is intended by the CDFW for use as a management tool to include these species into special consideration when decisions are made concerning the development of natural lands, and these species are considered sensitive as described under the CEQA Appendix G questions. The CDFW also has authority to administer the Native Plant Protection Act (NPPA) (CFGC Section 1900 et seq.). The NPPA requires the CDFW to establish criteria for determining if a species, subspecies, or variety of native plant is endangered or rare. Under Section 1913(c) of the NPPA, the owner of land where a rare or endangered native plant is growing is required to notify the department at least 10 days in advance of changing the land use to allow for salvage of the plant(s).

Perennial and intermittent streams and associated riparian vegetation, when present, also fall under the jurisdiction of the CDFW. Section 1600 et seq. of the Fish and Game Code (Lake and Streambed Alteration Agreements) gives the CDFW regulatory authority over work within the stream zone (which could extend to the 100-year flood plain) consisting of, but not limited to, the diversion or obstruction of the natural flow or changes in the channel, bed, or bank of any river, stream or lake.

#### *Regional Water Quality Control Board*

The State Water Resources Control Board and each of nine local RWQCBs has jurisdiction over “waters of the State” pursuant to the Porter-Cologne Water Quality Control Act, which are defined as any surface water or groundwater, including saline waters, within the boundaries of California. The State Water Resources Control Board has issued general

Waste Discharge Requirements regarding discharges to “isolated” waters of the State (Water Quality Order No. 2004-0004-DWQ, Statewide General Waste Discharge Requirements for Dredged or Fill Discharges to Waters Deemed by the USACE to be Outside of Federal Jurisdiction). The local RWQCB (San Francisco Bay RWQCB) enforces actions under this general order for isolated waters not subject to federal jurisdiction and is also responsible for the issuance of water quality certifications pursuant to Section 401 of the CWA for waters subject to federal jurisdiction.

*California Department of Transportation – California Streets and Highway Code Section 156.3*

Assessments and remediation of potential barriers to fish passage for transportation projects using State or federal transportation funds are required. Such assessments must be conducted for any projects that involve stream crossings or other alterations and must be submitted to the CDFW.

## Local

### *General Plan*

The City of Berkeley's General Plan includes the Environmental Management Element which establishes policies for the management and conservation of Berkeley's natural resources. Several policies are intended to facilitate environmental protection and conservation by protecting, maintaining, and enhancing the urban forest (including street and park trees) and natural habitat areas. These policies and actions are shown below:

**Policy EM-28 Natural Habitat:** Restore and protect valuable, significant, or unique natural habitat areas.

**Action EM-28(B):** Where appropriate, balance increased use of open space and public lands with enhancement of natural habitat.

**Policy EM-29 Street and Park Trees:** Maintain, enhance, and preserve street and park trees to improve the environment and provide habitat.

**Action EM-29(A):** Develop a street and park tree management plan to create a vibrant and well-maintained tree population throughout the city. Wherever possible, tree replacement should emphasize native tree and plant species and maintain, to the extent feasible, street tree canopies over the street.

**Action EM-29(B):** Prioritize South and West Berkeley for additional street tree planting.

**Action EM-29(C):** Ensure that new development preserves existing trees, wherever feasible, and adds trees in the public right-of-way, where appropriate.

**Action EM-29(D):** Maintain standards to ensure parking lot tree canopy coverage.

**Action EM-29(E):** Maintain programs to ensure the timely removal and replacement of unhealthy or inappropriate street or park trees.

**Action EM-29(F):** Preserve and protect heritage trees, including native oaks and other significant trees on public and private property whenever feasible.

**Action EM-29(G):** Discourage the filling of planter strips with concrete.

### *City of Berkeley Tree Ordinance*

Ordinance No. 6,905-N.S. of the Berkeley Municipal Code (BMC) declares a moratorium on the removal of coast live oak trees, to prohibit any pruning of an oak that is excessive and injurious to the tree. Under this ordinance, the “removal of any single stem coast live oak tree of a circumference of 18 inches or more and any multi-stemmed coast live oak with an aggregate circumference of 26 inches or more at a distance of four feet up from the ground within the City of Berkeley,” is prohibited. An exception may be made to this ordinance if the City Manager finds that any tree is a potential danger to people or property due to its condition, and that the only reasonable mitigation would be tree removal.

## 4.2.2 Impact Analysis

### a. Methodology and Significance Thresholds

The following analysis is programmatic and encompasses the entire Plan Area because no specific development projects are included in the proposed Specific Plan. Data used for this analysis include aerial photographs, topographic maps, the CDFW CNDDDB, the CNPS online *Inventory of Rare and Endangered Plants of California* and accepted scientific texts to identify species. Federal special status species inventories maintained by the USFWS were reviewed in conjunction with the CNDDDB and CNPS online inventory. Other data on biological resources were collected from numerous sources, including relevant literature, maps of natural resources, and data on special status species and sensitive habitat information obtained from the CDFW CNDDDB (2018a), CDFW BIOS (2018b), CNPS *online Inventory of Rare and Endangered Plants of California* (2018), and USFWS IPaC (2018a). The USFWS Critical Habitat Mapper (2017b) and National Wetlands Inventory (2018c) were also queried.

### Significance Thresholds

The following thresholds are based on Appendix G of the *CEQA Guidelines*. Impacts would be significant if the proposed Specific Plan would result in any of the following:

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 U.S. Fish and Wildlife Service
3. Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means
4. Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors 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

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

**b. Project Impacts and Mitigation Measures**

**Threshold 1:** Would the proposed Specific Plan 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?

**IMPACT BIO-1** THE PLAN AREA IS HIGHLY URBANIZED AND NO SPECIAL-STATUS SPECIES HAVE BEEN RECORDED IN THE PLAN AREA. IMPLEMENTATION OF THE PROPOSED SPECIFIC PLAN MAY RESULT IN IMPACTS TO SPECIAL STATUS NESTING BIRDS OR NESTING BIRDS PROTECTED UNDER CALIFORNIA FISH AND GAME CODE; THIS IMPACT WOULD BE SIGNIFICANT BUT MITIGABLE TO LESS THAN SIGNIFICANT.

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For this analysis, special status plant and animal species include those described under subsection 4.2.1(a), *Setting*, above. Because the proposed Specific Plan does not include specific development projects, a precise, project-level analysis of the specific impacts of individual development projects on special status species is not possible. Nonetheless, as the Plan Area lacks habitat and native vegetation, special status species are not anticipated to be encountered at the locations where projects developed under the proposed Specific Plan would occur. Development under the Specific Plan could introduce structures of greater height and density compared to current conditions, but such development would not differ substantially from the urban development already in the Plan Area in regards to implications for biological resources.

Development facilitated by the proposed Specific Plan would occur in existing urbanized areas and would not involve construction in environmentally sensitive areas, which are generally absent in the Plan Area. As mentioned above and presented in Table B-1 and Table B-2 in Appendix B, 122 special status animals and 110 special status plants are known to or have potential to occur in and near the Plan Area. Of these, 49 (29 animal species and 20 plant species) are given the highest levels of protection by the federal government through listing under FESA and/or by the state government through listing under CESA or Fully Protected. The remaining species shown in Table B-1 and Table B-2 in Appendix B are protected through CEQA as special status species for which population-level effects would be considered significant. Because the Plan Area is highly urbanized and developed, most special status species do not occur in the Plan Area because of a lack of specific habitat constituents. Some special status species that have higher tolerance for urban development and human activity (e.g. some raptors and some bat species) have low potential to occur. No special-status species have been recorded within the Plan Area itself. However, two special status bats have the potential to occur the Plan Area. Special status bat species have some potential to occur within the northern portion of the Plan Area as described above, and may be affected by proposed projects where they occur in buildings or similar structures or in native habitat adjacent to construction areas. Therefore, Mitigation Measure BIO-1 is required.

In addition, trees and other vegetation in the Plan Area may support species of nesting migratory birds protected under California Fish and Game Code (CFG), and special status species such as Coopers hawk (*Accipiter cooperii*) (California WL). Impacts to nesting special status birds are potentially significant, and impacts to non-special status migratory

birds would be a violation of the CFGC (although not necessarily a significant impact under CEQA). However, all development projects in Berkeley are required to comply with the standard conditions of approval of the use permit under the Zoning Ordinance. This includes the following:

Avoid Disturbance of Nesting Birds. Initial site disturbance activities, including vegetation and concrete removal, shall be prohibited during the general avian nesting season (February 1 to August 30), if feasible. If nesting season avoidance is not feasible, the applicant shall retain a qualified biologist 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 Migratory Bird Treaty Act (MBTA) and California Fish and Game Code (CFGC), nesting bird surveys shall be performed not more than 14 days prior to scheduled vegetation and concrete removal. 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 inside the buffer areas until a qualified biologist has determined that the nest is no longer active (e.g., 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 January 31.

Therefore, with compliance with City of Berkeley standard conditions of approval, impacts to nesting birds would be less than significant, and violations of the CFGC would be avoided.

### **Mitigation Measure**

The following mitigation measure is required.

#### *Mitigation Measure BIO-1 Special-status Bat Species Avoidance and Minimization*

For projects in the Plan Area, focused surveys to determine the presence/absence of roosting bats shall be conducted prior to the initiation of demolition of buildings and removal of mature trees large enough to contain crevices and hollows that could support bat roosting. If active maternity roosts are identified, a qualified biologist shall establish avoidance buffers applicable to the species, the roost location and exposure, and the proposed construction activity in the area. If active non-maternity day or night roosts are found on the project site, measures shall be implemented to passively relocate bats from the roosts prior to the onset of construction activities. Such measures may include removal of roosting site during the time of day the roost is unoccupied or the installation of one-way doors, allowing the bats to leave the roost but not to re-enter. These measures shall be presented in a Bat Passive Relocation Plan that shall be submitted to, and approved by, CDFW.

### **Significance After Mitigation**

With implementation of Mitigation Measure BIO-1, impacts to special status bat species during implementation of the proposed Specific Plan would be avoided. This impact would be less than significant.

**Threshold 2:** Would the proposed Specific Plan have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?

**IMPACT BIO-2** IMPLEMENTATION OF THE PROPOSED SPECIFIC PLAN WOULD NOT RESULT IN IMPACTS TO RIPARIAN HABITAT OR OTHER SENSITIVE HABITATS. THIS IMPACT WOULD BE LESS THAN SIGNIFICANT.

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As noted above and shown in Table 4.2-1, no natural communities considered sensitive by the CDFW occur in the Plan Area. Two sensitive natural community types occur within a five-mile radius of the Plan Area. Two occurrences of Northern Coastal Salt Marsh are located approximately 1.5 miles to the southwest and two miles to the northwest, and one occurrence of Northern Maritime Chaparral is located approximately five miles to the northeast of the Plan Area. These sensitive natural communities would not be affected by the proposed Specific Plan due to their respective distances from the Plan Area. Because no sensitive or riparian habitats are expected to occur in the Plan Area, no impacts are expected. Although trees and vegetation along the streets and rights-of-way may provide marginal habitat for some nesting bird species, impacts to nesting birds would be mitigated through compliance with the standard conditions of approval, listed above.

### Mitigation Measures

No mitigation measures are required.

**Threshold 3:** Would the proposed Specific Plan have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?

**IMPACT BIO-3** IMPLEMENTATION OF THE PROPOSED SPECIFIC PLAN WOULD NOT RESULT IN IMPACTS TO FEDERALLY PROTECTED WETLANDS. NO IMPACT WOULD OCCUR.

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There are no mapped or designated federally protected wetlands in the Plan Area. Some underground drainage culverts may intersect the Plan Area; however, these are not federally protected and therefore are not subject to USACE jurisdiction. Due to the developed nature of the Plan Area, there would not be potential for impacts to protected wetlands and as such there would be no impact.

### Mitigation Measures

No mitigation measures are required.

**Threshold 4:** Would the proposed Specific Plan 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?

**IMPACT BIO-4** IMPLEMENTATION OF THE PROPOSED SPECIFIC PLAN WOULD NOT IMPACT THE MOVEMENT OF NATIVE RESIDENT OR MIGRATORY FISH OR WILDLIFE SPECIES OR WITH ESTABLISHED NATIVE RESIDENT OR MIGRATORY WILDLIFE CORRIDORS. THIS IMPACT WOULD BE LESS THAN SIGNIFICANT.

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The site is not within, and does not function as, a significant regional or local wildlife movement corridor. There are no waterways that could be utilized for movement of any native resident or migratory fish located in the Plan Area. Impacts to the movement of wildlife would be less than significant.

### Mitigation Measures

No mitigation measures are required.

**Threshold 5:** Would the proposed Specific Plan conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?

**IMPACT BIO-5** IMPLEMENTATION OF THE PROPOSED SPECIFIC PLAN WOULD NOT CONFLICT WITH LOCAL POLICIES OR ORDINANCES PROTECTING BIOLOGICAL RESOURCES, SUCH AS A TREE PRESERVATION POLICY OR ORDINANCE. THIS IMPACT WOULD BE LESS THAN SIGNIFICANT.

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Projects implemented as a result of the proposed Specific Plan may result in the removal of mature trees during construction. General Plan Policy EM-29 requires the City to maintain and enhance street and park trees to improve the environment and provide habitat. On-going implementation of the policy through site-specific design review and use permits would reduce any potential impact to locally significant trees to a less than significant level.

Under the City of Berkeley's Tree Ordinance (BMC No. 6,509-N.S.) the removal of coast live oak trees is prohibited for any reason, unless such removal is deemed necessary for public safety by the City Manager. Any Coast Live Oak with a single stem circumference of 18 inches or more or any multi-stemmed oak with an aggregate circumference of 26 inches or more at a distance of four feet from the ground is protected under this ordinance.

Development and redevelopment activities in the Plan Area would be required to adhere to General Plan policies and to the Tree Ordinance. The proposed Specific Plan does not include specific policies or programs that would conflict with or hinder implementation of the City's Tree Ordinance or other policies or ordinances for protecting biological resources. Impacts would be less than significant.

### Mitigation Measures

No mitigation measures are required.

<b>Threshold 6:</b> Would the proposed Specific Plan conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or State habitat conservation plan?
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**IMPACT BIO-6** IMPLEMENTATION OF THE PROPOSED SPECIFIC PLAN WOULD NOT CONFLICT WITH THE PROVISIONS OF AN ADOPTED HABITAT CONSERVATION PLAN, NATURAL COMMUNITY CONSERVATION PLAN, OR OTHER APPROVED LOCAL, REGIONAL, OR STATE HABITAT CONSERVATION PLAN. NO IMPACT WOULD OCCUR.

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There are no habitat conservation plans or natural community conservation plans adopted in the Plan Area. Therefore, development associated with the proposed Specific Plan would not conflict with any such plans and no impact would occur.

### Mitigation Measures

No mitigation measures are required.

#### c. Cumulative Impacts

Cumulative development in the area may contribute to the loss of foraging and breeding habitat for special status species; contribute to the decline of special status species, fragmentation of habitat and isolation of populations, and decrease movement opportunities. Full implementation of the proposed Specific Plan would increase density and intensity of existing land uses. However, the proposed Plan Area is zoned for urban uses and is in a highly urbanized and developed area, surrounded by existing development and highly travelled transportation corridors that limit the habitat value and potential for presence of sensitive biological resources. Potential impacts to biological resources associated with the proposed Specific Plan would be less than significant. Therefore, the proposed Specific Plan's incremental contribution to cumulative impacts associated with biological resources would not be cumulatively considerable, and cumulative impacts would be less than significant.

## 4.3 Cultural Resources

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This section assesses potential impacts from implementation of the proposed Specific Plan on cultural, tribal cultural, archaeological, paleontological, and historical resources. This section is primarily based on the Cultural Resources Technical Report prepared by Archaeological/Historical Consultants in December 2018. This report is included in Appendix C.

### 4.3.1 Setting

#### a. Regulatory Setting

This section includes a discussion of the applicable federal, state, and local laws, ordinances, regulations, and standards governing cultural resources, which must be adhered to during implementation of the proposed Specific Plan.

#### 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.

#### California Environmental Quality Act

The California Environmental Quality Act (CEQA) requires a lead agency to analyze whether historic and/or archaeological resources may be adversely impacted by a proposed project. Under CEQA, a “project that may cause a substantial adverse change in the significance of a historic resource is a project that may have a significant effect on the environment” (California Public Resource Code [PRC] Section 21084.1). Answering this question is a two-part process: first, determination must be made as to whether or not the proposed project involves cultural resources; second, if cultural resources are present, the

proposed project must be analyzed for a potential “substantial adverse change in the significance” of the resource.

With regards to paleontological resources, the State CEQA Guidelines (Article 1, §15002(a)(3)) state that CEQA is intended to prevent significant, avoidable damage to the environment by requiring changes in projects through the use of alternatives or mitigation measures when the governmental agency finds the changes to be feasible. If paleontological resources are identified during the Preliminary Environmental Analysis Report, or other initial project scoping studies (e.g., Preliminary Environmental Study), as being within the proposed project area, the lead agency must take those resources into consideration when evaluating project effects. The level of consideration may vary with the importance of the resource.

### California Public Resources Code

Section 5097.5 of the California PRC states:

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

As used here, “public lands” means lands owned by or under the jurisdiction of the state or any city, county, district, authority, or public corporation, or any agency thereof. Consequently, public agencies are required to comply with PRC § 5097.5 for their activities, including construction and maintenance, as well as for permit actions (e.g., encroachment permits) undertaken by others.

### California Register of Historical Resources

CEQA (Section 21084.1) requires a lead agency determine whether a project could have a significant effect on historical resources and tribal cultural resources (PRC Section 21074 [a][1][A]-[B]). A historical resource is a resource listed in or determined to be eligible for listing in the California Register of Historical Resources (CRHR) (Section 21084.1), a resource included in a local register of historical resources (Section 15064.5[a][2]), or any object, building, structure, site, area, place, record, or manuscript that a lead agency determines to be historically significant (§15064.5[a][3]).

PRC Section 5024.1, Section 15064.5 of the *CEQA Guidelines*, and PRC Sections 21083.2 and 21084.1 were used as the basic guidelines for the cultural resources study. PRC Section 5024.1 requires an evaluation of historical resources to determine their eligibility for listing in the CRHR. The purpose of the register is to maintain listings of the state’s historical resources and to indicate which properties are to be protected from substantial adverse change. The criteria for listing resources in the CRHR were expressly developed to be in accordance with previously established criteria developed for listing in the NRHP, as enumerated according to CEQA below.

- (3) [...] Generally, 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 (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
  - (4) Has yielded, or may be likely to yield, information important in prehistory or history
- (4) The fact that a resource is not listed in, or determined to be eligible for listing in the California Register of Historical Resources, not included in a local register of historical resources (pursuant to section 5020.1(k) of the Public Resources Code), or identified in an historical resources survey (meeting the criteria in section 5024.1(g) of the Public Resources Code) does not preclude a lead agency from determining that the resource may be an historical resource as defined in Public Resources Code sections 5020.1(j) or 5024.1.
- (b) A project with an effect that may cause a substantial adverse change in the significance of an historical resource is a project that may have a significant effect on the environment.

In addition, if a project can be demonstrated to cause damage to a unique archaeological resource, the lead agency may require reasonable efforts to permit any or all of these resources to be preserved in place or left in an undisturbed state. To the extent that resources cannot be left undisturbed, mitigation measures are required (PRC, Section 21083.2[a], [b], and [c]).

PRC, Section 21083.2(g) defines a unique archaeological resource as an artifact, object, or site about which it can be clearly demonstrated that, without merely adding to the current body of knowledge, there is a high probability that it:

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

Impacts to significant cultural resources that affect the characteristics of any resource that qualify it for the NRHP or adversely alter the significance of a resource listed in or eligible for listing in the CRHR are considered a significant effect on the environment. These impacts could result from physical demolition, destruction, relocation, or alteration of the resource or its immediate surroundings such that the significance of an historical resource would be materially impaired (*CEQA Guidelines*, §15064.5 [b][1], 2000). Material impairment is defined as demolition or alteration in an adverse manner [of] those characteristics of an historical resource that convey its historical significance and that justify its inclusion in, or eligibility for inclusion in, the CRHR (*CEQA Guidelines*, §15064.5[b][2][A]).

Section 5097.5 of the PRC prohibits excavation or removal of any "vertebrate paleontological site or historical feature, situated on public lands, except with the express permission of the public agency having jurisdiction over such lands." PRC § 30244 requires

reasonable mitigation of adverse impacts to paleontological resources from development on public land. Penal Code §623 spells out regulations for the protection of caves, including their natural, cultural, and paleontological contents. It specifies that no “material” (including all or any part of any paleontological item) will be removed from any natural geologically formed cavity or cave.

## 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 20184.3 (b)(2) provides examples of mitigation measures that lead agencies may consider to avoid or minimize impacts to tribal cultural resources.

PRC §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 Public Resources Code 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 § 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.

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.

### Senate Bill 18

Enacted on March 1, 2005, Senate Bill 18 (SB18) (California Government Code §§ 65352.3 and 65352.4) requires cities and counties to notify and consult with California Native American tribal groups and individuals regarding proposed local land use planning decisions for the purpose of protecting traditional tribal cultural places (sacred sites), prior to adopting or amending a general plan or designating land as open space. Tribal groups or individuals have 90 days to request consultation following the initial contact.

### City of Berkeley General Plan (2001)

The City's General Plan, approved in 2001, contains the following goals and policies in the Urban Design and Preservation Element of the General Plan relevant to the current project:

**Policy UD-1 Techniques.** Use a wide variety of regulatory, incentive, and outreach techniques to suitably protect Berkeley's existing built environment and cultural heritage.

**Policy UD-2 Regulation of Significant Properties.** Increase the extent of regulatory protection that applies to structures, sites, and areas that are historically or culturally significant.

**Policy UD-3 Regulation of Neighborhood Character.** Use regulations to protect the character of neighborhoods and districts, and respect the particular conditions of each area.

**Policy UD-5 Architectural Features.** Encourage, and where appropriate require, retention of ornaments and other architecturally interesting features in the course of seismic retrofit and other rehabilitation work.

**Policy UD-6 Adaptive Reuse.** Encourage adaptive reuse of historically or architecturally interesting buildings in cases where the new use would be compatible with the structure itself and the surrounding area.

**Policy UD-8 Public Works Projects.** In public works projects, seek to preserve desirable historic elements such as ornamental sidewalk features, lampposts, and benches.

**Policy UD-12 Range of Incentives.** Seek to maintain and substantially expand the range and scale of incentives that the City and/or other entities make available in Berkeley for the preservation of historic and cultural resources.

**Policy UD-16 Context.** The design and scale of new or remodeled buildings should respect the built environment in the area, particularly where the character of the built environment is largely defined by the aggregation of historically and architecturally significant buildings.

**Policy UD-17 Design Elements.** In relating a new design to the surrounding area, the factors to consider should include height, massing, materials, color, and detailing or ornament.

**Policy UD-20 Alterations.** Alterations to a worthwhile building should be compatible with the buildings original architectural character.

**Policy UD-21 Directing Development.** Use City incentives and zoning provisions to direct new development toward locations where significant historic structures or structures contributing to the character of an area will not need to be removed.

**Policy UD-24 Area Character.** Regulate new construction and alterations to ensure that they are truly compatible with and, where feasible, reinforce the desirable design characteristics of the particular area they are in.

**Policy UD-25 Facades and Exterior Features.** Buildings should have significant exterior features and facades that stimulate the eye and invite interested perusal.

**Policy UD-36 Information on Heritage.** Promote, and encourage others to promote, understanding of Berkeley's built and cultural heritage, the benefits of conserving it, and how to sensitively do that.

**Policy UD-38 Tourism.** As an economic development strategy, promote the city's cultural and architectural heritage.

## City of Berkeley Municipal Code

The City of Berkeley's Municipal Code (BMC) Chapter 3.24 *Landmarks Preservation Commission* provides for the identification, designation, and preservation of historic structures and structures with cultural value. The chapter provides requirements for criteria for historic resource designation and procedures for the treatment of historic resources. Article 110 of Chapter 3.24 Landmarks, historic districts, and structures of merit—

Designation—Criteria for consideration (BMC 3.24.110) provides criteria when considering structures, sites, and areas for landmark or structure of merit designation. The criteria for designating a City landmark are as follows:

- 1) Architectural merit:
  - a) Property that is the first, last, only or most significant architectural property of its type in the region
  - b) Properties that are prototypes of or outstanding examples of periods, styles, architectural movements or construction, or examples of the more notable works of the best surviving work in a region of an architect, designer or master builder
  - c) Architectural examples worth preserving for the exceptional values they add as part of the neighborhood fabric
- 2) Cultural value: Structures, sites and areas associated with the movement or evolution of religious, cultural, governmental, social and economic developments of the City
- 3) Educational value: Structures worth preserving for their usefulness as an educational force
- 4) Historic value: Preservation and enhancement of structures, sites and areas that embody and express the history of Berkeley/Alameda County/California/United States
- 5) Historic property: Any property listed in the NRHP

The criteria for designating a structure of merit are as follows:

- 1) General criteria shall be architectural merit and/or cultural, educational, or historic interest or value. If upon assessment of a structure, the commission finds that the structure does not currently meet the criteria as set out for a landmark, but it is worthy of preservation as part of a neighborhood, a block or a street frontage, or as part of a group of buildings which includes landmarks, that structure may be designated a structure of merit.
- 2) Specific criteria include, but are not limited to one or more of the following:
  - a) The age of the structure is contemporary with (1) a designated landmark within its neighborhood, block, street frontage, or group of buildings, or (2) an historic period or event of significance to the City, or to the structure's neighborhood, block, street frontage, or group of buildings.
  - b) The structure is compatible in size, scale, style, materials or design with a designated landmark structure within its neighborhood, block, street frontage, or group of buildings.
  - c) The structure is a good example of architectural design.
  - d) The structure has historical significance to the City and/or to the structure's neighborhood, block, street frontage, or group of buildings. (Ord. 5686-NS § 1 (part), 1985: Ord. 4694-NS § 3.1, 1974)

## b. Cultural Resources Setting

### Historical Background

#### *Prehistory*

Some of the first significant regional archaeological work was conducted early in the 20<sup>th</sup> century when N.C. Nelson recorded and/or excavated over 400 bayside shellmounds (Nelson 1909; Moratto 1984). Data from these excavations and successive projects in the San Francisco Bay, delta, and inland sites illuminated regional archaeological sequences and allowed the development of the Central California Taxonomic System (CCTS). The CCTS outlines three main chronological periods (or ‘horizons’) for the Sacramento Delta and San Francisco Bay areas – Early, Middle, and Late, mostly based on evidence from mortuary practices and analysis of stylistic change in burial-associated artifacts. We summarize the Early, Middle, and Late Periods, with the transitions between them, following Hylkema’s (2002) and Milliken *et al.*’s (2007) approaches.

The Early-Middle-Late sequence focuses on the Late Holocene period (after 2000 BC), since little archaeological information from the Early Holocene is known from the San Francisco Bay Area. In other parts of California, the Early Holocene (8000-3500 BC) is characterized by mobile foragers using wide-stemmed and leaf-shaped projectile points and large milling slabs (Milliken *et al.* 2007:114). Given the rise in sea levels in the Middle Holocene, the relatively recent formation of San Francisco Bay, and the presence of constant alluviation in low-lying parts of the Bay Area, most evidence of the earliest human habitation in the area is likely to be underwater or deeply buried. For the Early Holocene period, therefore, most evidence comes from inland sites: deposits dating from ca. 8000 BC and burials dating from 5500-5000 BC were discovered around Los Vaqueros Reservoir in eastern Contra Costa County (Meyer and Rosenthal 1997), and deep deposits from the Metcalf Creek site (CA-SCI-178) in Morgan Hill yielded radiocarbon dates of 8000-6500 years BC (Hildebrandt 1983; Milliken *et al.* 2007:114; Jones *et al.* 2007:130).

More evidence is available from the Early Period (4000-500 BC) in the San Francisco Bay Area, with the emergence of the “Windmill pattern” of large stemmed and concave-base obsidian projectile points, rectangular *Olivella* beads, charmstones, extended burials facing toward the west, and the replacement of milling slabs with mortars and pestles. Few high-density shell deposits are found compared to later periods, suggesting a preferential use of terrestrial rather than marine resources; however, semi-sedentary land use, shell mound development, and evidence of regional trade are typical in some areas of the Bay. This cultural pattern appears earlier in the San Joaquin and Sacramento valleys, suggesting an influx of traditions or people from those areas into the Bay Area at some point during the period. In the East Bay, mortars and pestles first appear after 4000 BC and are ubiquitous by 1500 BC (Milliken *et al.* 2007:115; Moratto 1984: 277).

The Lower Middle Period (or Berkeley Pattern, 500 BC to 430 AD) is marked by major cultural disruptions, such as the disappearance of the square *Olivella* bead tradition and the introduction of new bead types, much lower frequency of projectile points, introduction of flexed burials, and introduction of decorative objects that may represent religious or cosmological beliefs. The period also saw the increased use of marine resources throughout the Bay Area and the development of a network of large shellmounds (Lightfoot 1997; Moratto 1984:283; Lightfoot and Luby 2002; Leventhal 1993).

In the Upper Middle Period (430-1050 AD), a major cultural shift occurred including the collapse of trade networks, site abandonment, and new bead forms and burial patterns. This

tradition, known as the Meganos complex, was characterized by extended dorsal burials with elaborate grave goods (Jones et al. 1987).

The Late Period (1050-1550 AD) is characterized by significant social transformations, an increase in social complexity, increased sedentism, and the unification of ceremonial systems around the Bay Area. Changes in material culture include the introduction of the bow and arrow (with accompanying development of arrow-sized projectile points), harpoons, tubular tobacco pipe, clamshell disc beads, and new forms of ornamentation. Socially, increasing intensity of trade relations, increased sedentism, and cremation of high status individuals appeared. The last two centuries before Spanish contact saw a series of changes in shell bead types, mortuary wealth distribution, and the introduction of new technology types such as the hopper mortar, though some of these innovations were slow to arrive in the eastern and southern parts of the Bay Area (Milliken *et al.* 2007:117).

The most significant prehistoric archaeological sites in the East Bay are the shellmounds around the Bay margins (Nelson 1909). Ten of these shellmounds were in Berkeley, Emeryville, and Oakland (ALA-307-314, ALA-314a, and ALA-315), and three others were recorded in nearby Alameda (ALA-316-318). Another prehistoric site is known along Temescal Creek in North Oakland (P-01-010600), and at least seven other prehistoric sites are located west of downtown Oakland and along the Oakland Estuary (see Baker 2005:3-4; 14; Baker 2010:14). However, all these sites are one mile or more from the Plan Area.

Several of the shellmounds in Berkeley and Emeryville were investigated early in the 20th century. West of the Plan Area, Max Uhle excavated at the Emeryville shellmound as early as 1902, discerning strata and diachronic change within what was one of the largest shellmounds in the Bay area. Schenck renewed excavations there in 1924 when the shellmound was levelled for industrial development (Moratto 1984:227-230). The Emeryville shellmound was believed largely destroyed until excavations required by extensive redevelopment in 1999 found 2.5 meters of subsurface midden, hundreds of human burials, artifacts, and radiocarbon dates extending to about 5000 B.C. at the bottom of the central mound (Morgan 2005). Another important site, Ala-307 in West Berkeley, was excavated in 1902 and in the mid-1950s before its destruction. The site provided an extensive faunal inventory and information on species change during the life of the site, as well as important temporal and comparative data that has helped construct a regional archaeological sequence (Wallace and Lathrop 1975; Follett 1975; Greengo 1975; Moratto 1984:260-261).

### *Ethnography and Ethnohistory*

The Huchiun people lived near the Plan Area when Spanish soldiers and missionaries arrived in the Bay Area. Huchiun territory extended “along the East Bay shore from Temescal Creek...north to the lower San Pablo and Wildcat Creek drainages in the present area of Richmond” (Milliken 1995:243). The names of two Huchiun villages – Genau and Junchaque – are known from Mission records, but their exact location is unknown (Milliken 1995:243). Huchiun presence near Temescal Creek is attested in its Mexican-era name, “Arroyo del Temescal o Los Juchiyunes.”

The Huchiun were one of the groups of the Ohlone people who lived along the east, west, and south shores of San Francisco Bay and in the Santa Cruz Mountains, Salinas Valley, and Monterey Bay area. The Ohlone were successful intensive food collectors and hunters who utilized a wide range of resources in a very favorable environment. Those populations living adjacent to the great bays of the region relied heavily on shellfish and aquatic animals for food. In the interior, plant foods in plentiful variety were gathered on a seasonal basis, with acorns the most important vegetal staple since they could be stored in great quantity.

Large game like deer, elk, and antelope were hunted. Game birds, waterfowl, fish, and shellfish were other major food sources that thrived in the nearby sloughs and marshes of San Francisco Bay (Milliken 1995:16-18; Levy 1978).

Ohlone society was organized in local tribes of 200-400 people living in semi-permanent villages, with tribelets controlling fixed territories averaging 10 to 12 miles in diameter (Milliken *et al.* 2007). Shoup and Milliken (1999:8) note that local tribes “were clusters of unrelated family groups that formed cooperative communities for ceremonial festivals, for group harvesting efforts, and – most importantly – for interfamily conflict resolution.” Hereditary village leaders, who could be male or female, played an important role in conflict resolution, receiving guests, directing ceremonies, organizing food-gathering expeditions, and leading war parties but did not otherwise exercise direct authority (Levy 1978:487). Despite their autonomy, intermarriage between tribelets appears to have been frequent (Milliken 1995:22-24).

Ohlone residences were typically round, domed or conical thatch homes on a frame of poles or branches, with a hearth in the center of the floor and corresponding smoke hole in the roof (Kroeber 1925:219). Sweathouses, dance enclosures, and assembly houses are also attested. Material culture included complex decorative and utilitarian basketry, shell ornaments, tule boats, feather nets, hair decorations and jackets, and a full suite of bone and stone tools. Tattooing of face, hands, and neck is attested in early ethnographic accounts (Levy 1978:493-493; Byrd *et al.* 2017). Ohlone peoples consumed a varied diet, with acorns from a range of oak species (Coast Live, black, tanbark) a staple food and buckeye, laurel, and hazelnuts playing a secondary role. Seeds including chia, pine nuts, and a range of grass seeds were harvested: soldiers on the 1776 Anza expedition were fed a kind of “tamale” made of seeds at several Ohlone villages (Milliken 1995:33-34). Berries such as blackberries, strawberries, madrone, grapes, and toyon were also eaten, as were a range of roots (Levy 1978:491). For animal resources people looked both to the Bay for fish, shellfish, waterfowl, and sea mammals, and to the plains and foothills for larger animals such as deer and elk.

The Huchiun spoke the Chochenyo dialect of the Ohlone language, which was spoken along the eastern shore of San Francisco Bay prior to 1770. Ohlone dialects formed a continuum from Richmond south to Hollister, where nearby groups could easily understand each other’s speech; communities living near speakers of other language groups, such as Coast Miwok, Bay Miwok, or Yokuts were often bilingual and frequently intermarried (Milliken *et al.* 2007; Golla 2007:75). Ohlone/Costanoan, which is closely related to the Miwok languages, is a branch of the Yok-Utian subfamily of the Penutian languages, which are spoken along the Pacific Coast from Central California to southeast Alaska. Penutian speakers seem to have entered central California from the northern Great Basin around 4000-4500 years ago and arrived in the San Francisco Bay Area about 1500 years ago, displacing speakers of Hokan languages (Golla 2007:74). This movement may be correlated with the spread of the Windmill pattern of material culture into the Coast Ranges and San Francisco Bay area (Moratto 1984:553; Levy 1978:486).

## *History*

### **EARLY HISTORY**

At the opening of the historic period, the Plan Area appears to have been sparsely inhabited, with the main Huchiun villages located near Richmond. Juan Crespí, passing through the coastal East Bay in late March of 1772, noted that “neither in this march nor in the preceding one have we seen a single heathen, and very few tracks of them,” though

they met with people in the Richmond area to the north (quoted in Milliken 1995:291). Likewise, Font mentions no villages along the East Bay shore in his 1776 diary of the Anza expedition (Font 1776). It is possible, of course, that they simply did not see the nearest villages, especially if they were located at the base of the hills. The Huchiun population in 1790 was likely around 400 people (Milliken 1995:156).

Mission San Francisco was founded in 1776, but only a few Huchiun people moved to the mission in the initial years. In fall 1794, however, the Huchiun migrated *en masse* to the mission, where 187 Huchiuns were baptized in just two weeks. Dismal conditions at Mission San Francisco caused a massive flight of converts from the mission in 1795, followed by Spanish military reprisals and forced return of converts by soldiers. Growing resistance to missionization and Spanish military reprisals sped the end of voluntary conversions (Milliken 1995:142-146). In 1797, Spanish military actions against native villages in the East Bay included attacks on three Huchiun villages and capture of numerous Huchiun resisters. Resistance was essentially quelled by 1801, as Milliken notes: “by the end of Summer 1801, the flat plains from the Santa Clara Valley north all along the east side of San Francisco Bay to the present Richmond area were devoid of native villages, with the exception of the San Leandro Creek Jalquin (Yrgin) regions” (Milliken 1995:171).

Missionization was a disaster for the native people of the region. Disease, dietary deficiency, declining birth rate, and military conflict resulted in an almost 80 percent population decline by 1832. This population loss, the mingling of ethnic groups at the missions, and the discouragement of traditional social practices resulted in the almost total disintegration of traditional lifeways. After secularization of the missions in the 1830s, some native people went to work on nearby ranchos, perhaps gravitating to home lands, but there is little information available about Indian life in this period.

#### RANCHO SAN ANTONIO

In the late Spanish and Mexican periods, the Plan Area lay within Rancho San Antonio, which had been granted in 1820 to Luis Maria Peralta, who had come to California in 1776 with the Anza expedition. The rancho stretched over 43,000 acres, from Albany in the north to San Leandro Creek in the south (Beck and Haase 1974:30). In 1842, Luis Peralta divided the ranch among his sons, with José Domingo receiving what is today Berkeley and Albany and José Vicente receiving what is now Emeryville, North and West Oakland, and Piedmont (Hoover et al. 1990:9). The Plan Area lay almost equidistant between Domingo Peralta's adobe home on Codornices Creek and Vicente's home on Temescal Creek. In the wake of the California Gold Rush, the Peralta family was plagued by squatters who overran rancho land, sometimes violently (Hoover et al. 1990:10, 13). Domingo Peralta sought to have his property confirmed in United States courts, but internal family in-fighting and squatters kept the family in the courts for many years, which “helped to destroy the Peralta patrimony” (Hoover et al. 1990:13).

#### EARLY AMERICAN SETTLEMENT

The US acquired California from Mexico through the Treaty of Guadalupe Hidalgo in 1848. Weeks before the treaty was signed, gold was discovered along the American River, sparking the Gold Rush. Immigrants flooded into the territory and those arriving by sea traveled through the Bay Area and the Central Valley to gold fields in the Sierra Nevada. By the end of 1849, San Francisco's population had grown from five or six hundred to 25,000. This massive influx of population help push California into statehood in 1850 and had profound impacts upon the East Bay as new arrivals moved across the bay and established the beginnings of future cities like Berkeley.

Although Domingo Peralta's land was finally confirmed to him in 1877, Francis Kittredge Shattuck (who had failed to strike it rich in the gold fields) and his three business partners William Hillegass, George M. Blake, and James Leonard filed a pre-emptive claim on 640 acres of Peralta's land in the early 1850s. Shortly thereafter, Domingo Peralta sold off most of his land to four San Franciscans (Hall McAllister, Richard P. Hammond, Lucien Hermann, and Joseph K. Irving) who eventually subdivided and sold the former rancho land. The land that Shattuck, Hillegass, Blake, and Leonard claimed, and eventually obtained legally, included the area along the Adeline Corridor north of Russell Avenue (Ferrier 1933:25-27; Wollenberg 2008:10ff).

James Leonard reportedly farmed most of those 640 acres and established his homestead on Blake Street (between Ellsworth and Dana streets) in the early 1850s, where he grew grain. In 1860, Leonard established an east-west road just north of his home – initially called Leonard road, it became known as Dwight Way by 1874 (Comstock 2013:25). Other early landowners along the Adeline Corridor included farmer Mark Ashby, who owned much of the land fronting the east side of Adeline between Russell and Woolsey by the early 1860s, and Edward Harmon, who purchased a 135-acre tract of farmland adjacent to the Ashby farm east of Adeline (City of Berkeley 1988:254). Located outside the boundaries of the City of Berkeley at the time, much of the land along and around the Adeline Corridor remained agricultural during the next thirty years.

#### **DEVELOPMENT OF THE ADELINE CORRIDOR: 1870S-1900**

The construction of the Central Pacific Railroad (CPRR), the nation's first transcontinental railroad, in 1869 also impacted the growth of Berkeley. Shattuck persuaded CPRR to construct a spur line into Berkeley from the railroad's Oakland Terminal. The Berkeley Branch Railroad organized in 1875 as a subsidiary of the Central Pacific, and laid a single track from the Northern Railroad line in Emory's (now Emeryville) to Lorin (at the present-day intersection of Adeline and Alcatraz), where it continued northeast along Adeline Street to Shattuck Avenue. The line then ran along Shattuck Avenue into northern Berkeley, reaching University Avenue in 1876. Along Adeline, the train had four stops: between present-day 62nd and 63rd streets, at Alcatraz Avenue (referred to as the Lorin station), between Russell Street and present-day Ashby Avenue (known as Newbury station), and at Dwight Way. The line eventually merged with the Southern Pacific Railroad (SPRR) system in 1898 (Wollenberg 2008; Ford 1977:49; Fernandez-Gray 2002:10).

The construction of the railroad spurred residential development adjacent to and in the immediate vicinity of its alignment, some of which would become Adeline Street. Edward Harmon subdivided his last holdings in the area (approximately 70 acres) just after the railroad was completed and during the next fifteen years constructed more than 50 homes for prospective buyers. Other subdivisions established by 1880 included the Blake Tract No. 2 (near what would be later known as Newbury station); Steel Tract (near the Dwight Way station); Regent Street-Homestead Tract (near the Lorin station); and the McKee Tract (by the 63rd Street station) (Smith 1880; Berkeley History Project 1983).

Mark Ashby also subdivided his land, creating the Newbury Tract along the east side of Adeline in 1882, which he expanded southward a year later. His land fronting the west side of Adeline became the Central Park subdivision in 1887. Developed by J. B. Whitcomb, the subdivision was touted as the "suburb of San Francisco" with paved streets, shallow wells, and rich soil; however, few lots sold. In contrast, by 1890 small villages had been established around the Newbury and Lorin stations. Lorin was the larger of the two hamlets with a population of approximately 700 people, and included a post office, several stores, a church, school, and approximately 150 dwellings. Many of these homes were one- to two-

story wood-frame structures with wood siding that were constructed in the popular architectural styles of the time, such as Queen Anne and Colonial Revival. Berkeley annexed the two communities between 1891 and 1892. Shortly after its annexation, the Newbury station was renamed Ashby station (Thompson and West 1878; Berkeley Architectural Heritage 2004; City of Berkeley 1988:254). Berkeley continued to expand in the latter years of the nineteenth century, encouraged in part by the addition of various infrastructure developments, including the arrival of electric rail transportation. Electric street cars began running on the Oakland Consolidated Street Railway's line that traversed Grove Street (present-day MLK Jr. Way) in 1891, gradually replacing horse-car and steam lines and improving transportation to Oakland. An additional Oakland Consolidated line ran along a portion of Adeline (between its intersection with Shattuck Avenue and Dwight Way) serving the Ashby station area. The Grove Street line's instant success spurred the construction of other electric railways, including what would become the Key System, an interurban railway that linked the cities of the East Bay with San Francisco. In 1903, the Key System's 'F' Line began running along the Adeline Corridor (Wollenberg 2008; Berkeley Architectural Heritage 2004.)

#### DEVELOPMENT OF THE ADELINE CORRIDOR: TWENTIETH CENTURY TO PRESENT

The Key System of electric street cars, coupled with the 1906 earthquake and fire that devastated San Francisco, influenced Berkeley's development in the early twentieth century. Like other East Bay communities, refugees from San Francisco and other areas that had sustained major damage inundated Berkeley. Many of these refugees became only temporary residents of the town, but the destruction of houses and businesses in San Francisco forced many of that city's displaced citizens to establish new lives and residences elsewhere in the Bay Area. Thousands of these people settled in Berkeley. This massive influx had an enormous impact upon the city, and was marked by commercial and residential construction that transformed many of the remaining open areas in Berkeley into bustling neighborhoods and business districts (JRP 2005:45-47).

Development along the Adeline Corridor was typical of the expansion effects throughout Berkeley, as the area transformed into a streetcar suburb during the first three decades of the twentieth century. A 1905 topographic map shows sporadic development along the corridor with building clusters around the community of Lorin, and around Ashby Avenue and Dwight Way. Many of the residential subdivisions, with the exception of those near Lorin and Dwight Way, were still undeveloped.

Six years later, Sanborn Fire Insurance maps show the dramatic increase in buildings along the corridor within just a few years of the disaster. Most of the lots fronting Adeline between Dwight Way and Carlton Street included commercial buildings (stores, offices, laundries, liveries, and banks) by this time, with one- and two-story single-family residences along the adjacent blocks. Commercial buildings dominated the intersection of Ashby Avenue and Adeline and the blocks between Fairview and 63rd Streets. The land between Carleton and Russell Streets was still yet undeveloped with the exception of a SPRR freight depot and other railroad-related buildings (between Russell and Stuart Streets) and a handful of residences. Nearly one-third of the extant buildings with the plan study area were constructed during this post-earthquake recovery period. The remaining vacant lots that faced along the corridor were infilled with commercial and residential buildings during the 1920s and 1930s. As in the earlier period, residences still were mostly wood-frame construction but stucco siding was also used to clad these mostly one- and two-story buildings. During this period of growth in the 1920s and 1930s, the Plan Area became the

City's most culturally diverse area as Japanese and African American households joined the community in greater numbers.

The local street rail system in Berkeley declined significantly during the Great Depression, a result of the weak economy, slower population growth, and the increased popularity of the automobile. The SPRR's electric passenger operations ceased in 1941, leaving the Key System as the only surviving electric interurban transit provider in Berkeley.

Around the Adeline Corridor, the influx of workers during World War II stimulated a new wave of residential construction and many houses within the adjacent subdivisions were replaced with modest homes. Building along the Adeline Corridor in this period reflected the influence of automobile culture. Along with corner service stations (some of which were established in the 1920s and 1930s), numerous auto repair and tire shops and sales showrooms sprang up predominantly between Dwight Way and Stuart Street during and after World War II. Rationing of gasoline during World War II led to a brief revived interest in the Key System, however, after the war the patronage and profits plummeted. The system was eventually phased out in the 1950s and tracks removed from the Adeline Corridor in favor of bus service. During and after World War II, many African Americans moved to South Berkeley, attracted by both the explosion in jobs relating to the war effort and the area's reputation as an established African American community. Concurrently, the area's Japanese and Japanese American population declined as they were forced to relocate to internment camps throughout the country. In 1980, the majority of South Berkeley residents (68 percent) were African American, though this population has declined steadily since the 1960s.

From the 1950s through the 2010s, the northern part of the Plan Area along Shattuck Avenue continued to be characterized by a mix of retail and automotive-related businesses, while the portion of the Plan Area around Adeline was characterized by mixed commercial, retail, residential, and transportation uses. Most notably, the construction of the Ashby BART Station in 1969-1972 led to the removal of several blocks of buildings in the triangular area between Ashby Avenue, Martin Luther King Jr. Way, and Adeline Street.

### c. Paleontological Setting

#### Regional and Local Geology

The Plan Area is within the Coast Ranges geomorphic province of California (California Geological Survey 2003). A geomorphic province is a region of unique topography and geology that is readily distinguished from other regions based on its landforms and geologic history (Norris and Web 1990). The Coast Ranges extend about 600 miles from the Oregon border south to the Santa Ynez River in Santa Barbara County. The Coast Ranges are composed of a complex assemblage of geologic units, including Mesozoic metasedimentary and metavolcanic rock of the Franciscan Group, marine and nonmarine sedimentary rock of the Cretaceous Great Valley Sequence, and Cenozoic marine and nonmarine shale, sandstone, and conglomerate (Norris and Webb 1990; Schemmann et al. 2008).

Specifically, the Plan Area is situated on the East Bay Plain, within a structural depression west of the northwest-trending Hayward fault, East Bay Hills, and Diablo Ranges of the southern Coast Ranges. The East Bay Plain is primarily underlain by Quaternary coarse-grained alluvial fan, stream channel, and fine-grained flood-plain sedimentary deposits that interfinger with the marine and estuarine Holocene Bay Mud deposits (Catchings et al. 2006). The surficial Quaternary marine to nonmarine sediments of the East Bay Plain

overlie basement rock composed of the Mesozoic Franciscan Assemblage, Great Valley Sequence, and Cenozoic sedimentary strata.

The geology of the Plan Area is mapped at a scale of 1:50,000 by Graymer (2000) and includes one geologic unit mapped at ground surface: Holocene alluvial fan and fluvial deposits (Qhaf). The Holocene deposits are composed of alluvial fan facies comprised of unconsolidated brown to tan gravely sand and silt, fluvial facies of brown sand and silty clay (Helley and Graymer 1997). These Holocene deposits are underlain by rocks of the Mesozoic Franciscan Assemblage and older Pleistocene alluvium at moderate to substantial depth (approximately 10 to greater than 20 feet below ground surface).

### 4.3.2 Existing Conditions

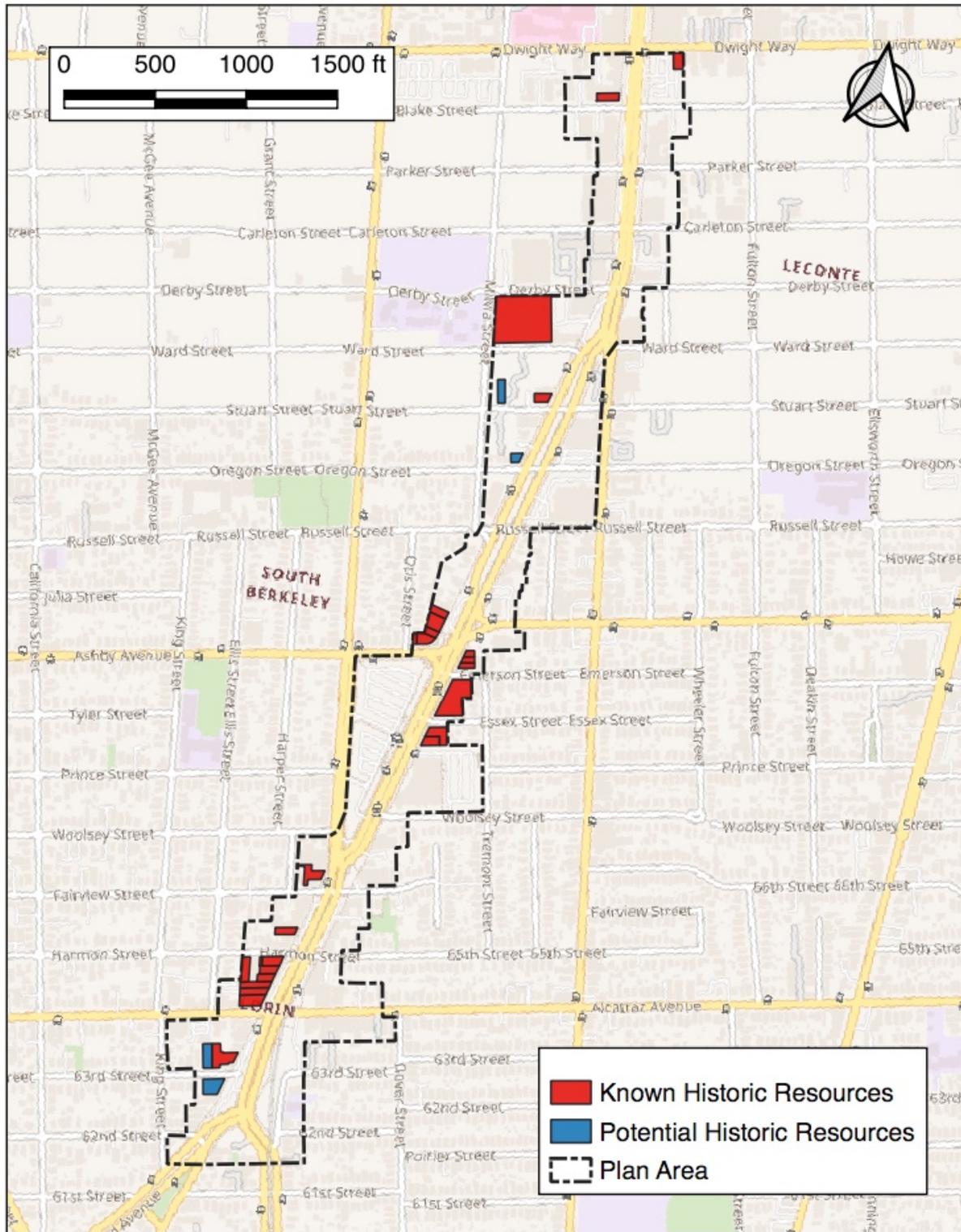
#### a. Historical Resources

Twenty-five buildings within the Plan Area have been determined eligible for listing in the National Register of Historic Places or California Register of Historic Resources, and therefore are historic resources as defined in CEQA. These buildings are listed in Table 4.3-1 and their locations are shown on Figure 4.3-1. Of these, only Berkeley Iceland (2727 Milvia Street, constructed 1940) is listed on the NRHP. Eight also have City of Berkeley Landmark status and one is a City of Berkeley Structure of Merit.

Most of the historic resources in the Plan Area are commercial or mixed-use buildings constructed between 1900 and 1930. They are located in two major clusters: one near Adeline Street and Alcatraz Avenue, and the other at Adeline Street and Ashby Avenue, with several scattered structures along Adeline Avenue and Shattuck Avenue between Ashby Avenue and Dwight Way.

A windshield survey by JRP Historical Consultants in 2015 identified four additional buildings that, if evaluated, might be found eligible for NRHP or CRHR. These buildings are listed in Table 4.3-2 and shown on Figure 4.3-1.

Figure 4.3-1 Historic and Potentially Historic Resources in the Plan Area



**Table 4.3-1 Known Historical Resources**

APN	Address	Year Built	Name	Status
54-1722-6	2750 Adeline St	1906	Frederick H. Dakin Warehouse	3S, BLM
53-1598-16	2970-2976 Adeline St	1905	Adeline St	3D
53-1598-17	2982 Adeline St	1910		3D
53-1598-18-1	2988-2990 Adeline St	1905	Hoffman Building	3D; BSOM
52-1592-16	3021 Adeline St	1901-02		3D
53-1592-15	3025 Adeline St	ca. 1901		3D
53-1592-14	3027 Adeline St	1905	William Clephane Corner Store	3D; BLM
53-1595-9-3	3031-3051 Adeline St	1922	Hull & Durgin Funeral Chapel & Little Chapel of Flowers	3S
53-1703-7	3061 Adeline St	1910		3D
52-1551-8-1	3192 Adeline St	1909	T.M. Lucks Nickelodeon	3S
52-1530-5	3228 Adeline St	1903	Carlson's Block	3S; BLM
52-1531-1	3250 Adeline St	1903	India Block	3B; BLM
52-1531-2	3258 Adeline St	1923		3D
52-1531-3	3264 Adeline St	1925		3D
52-1531-4-2	3278 Adeline St	1928		3D
52-1531-5	3280 Adeline St	1953		3D
52-1531-6	3286 Adeline St	1906	South Berkeley Bank, Wells Fargo Bank	3B; BLM
52-1532-4-3	3332 Adeline St	1920	Lorin Theater	3S; BLM
53-1598-20	1979-1981 Ashby Ave	1907		3D
53-1598-19	1985 Ashby Ave	1905	Webb Block	3B; BLM
55-1823-13	2120-2122 Dwight Way	1905	Luther M. Williamson Building	3S
53-1703-1	1900 Essex St	1936		3D
52-1531-16	1808 Harmon St	1909	IT Theatre, Haws Plumbing	3S
54-1723-2	2727 Milvia St	1940	Berkeley Iceland	1S; BLM
55-1822-6	2526-2530 Shattuck Ave	1905	Berkeley French Laundry, The Hall, Washing Well	3D

**1S:** Individually listed in the NRHP & CRHR

**3B:** Eligible for listing in the NRHP or CRHR as an individual property and as a contributor to a historic district

**3D:** Eligible for listing in the NRHP or CRHR as a contributor to a historic district

**3S:** Eligible for listing in the NRHRP or CRHR as an individual property

**BLM:** City of Berkeley Landmark

**BSOM:** City of Berkeley Structure of Merit

**Table 4.3-2 Potential Historical Resources\***

APN	Address	Year Built
52-1532-7	1719-1721 63rd Street	1907
52-1681-10-1	2820 Adeline Street	1895
52-1524-3	3350 Adeline Street	1920
54-1722-11	2005 Stuart Street	1895

\*This table reflects potential significance for architectural merit and retention of integrity based on reconnaissance survey only.

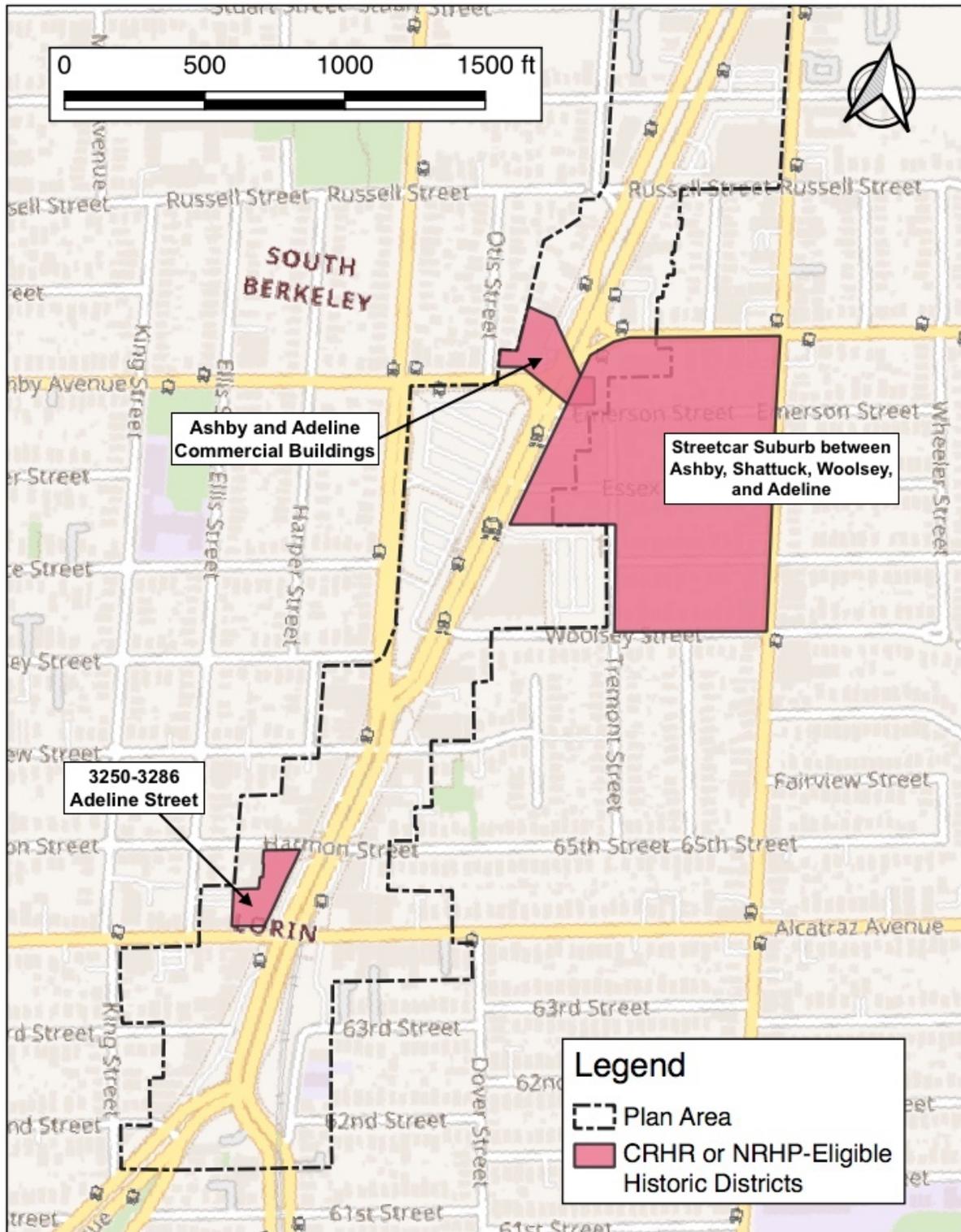
Source: JRP Historical Consultants 2015

There are also three areas within the Plan Area which have been determined eligible as CRHR or NRHP historic districts by the OHP (OHP 2005, 2006). These areas are shown on Figure 4.3-2 and include:

- 1) The group of commercial buildings at intersection of Ashby Avenue and Adeline Street, including 1979 Ashby Avenue, 1985 Ashby Avenue (the Webb Block), 2970 Adeline Street, 2982 Adeline Street, 2990 Adeline Street (the Hoffman Building), 3021 Adeline Street, 3025 Adeline Street, and 3027 Adeline Street (the William Clephane Corner Store) (illustrated in pink on Figure 4.3-2).
- 2) The residential and commercial buildings in a streetcar suburb bounded by the south side of Ashby Avenue, the west side of Shattuck Avenue, the north side of Woolsey Street and east side of Adeline Street (excluding the Ed Roberts campus site). In this district, only the commercial buildings along the east side of Adeline Street between the Ed Roberts Campus and Ashby Avenue are within the Plan Area; these partly overlap with the district described above (illustrated in pink on Figure 4.3-2).
- 3) 3250-3286 Adeline Street, on the west side of the street between Harmon Street and Alcatraz Avenue. These adjacent buildings include the India Block (3250 Adeline Street) and the South Berkeley Bank (3286 Adeline Street) (illustrated in blue on Figure 4.3-2).

The City of Berkeley has not established these areas as City historic districts. However, since these areas have been determined eligible as historic districts, they are considered historical resources under CEQA.

Figure 4.3-2 Eligible Historic Districts in the Plan Area



## b. Archaeological Resources

### Archaeological Sensitivity

In August-September, 2018 the Plan Area was surveyed by an archaeologist meeting the Secretary of the Interior's professional qualification standards for archeology. All visible soil was inspected for indicators of archaeological deposits such as historic artifacts, prehistoric artifacts, shell, bone, and dark midden soil. No cultural resources were identified on the survey. The Plan Area is heavily urbanized and over 95 percent covered by impervious surfaces. Soil could only be inspected in planters, medians, landscaping, and around the roots of street trees. Where visible, soils in the Plan Area are clay silts, silty clays, and loams with varying proportions of silt and clay. Soils are dark greyish brown to dark yellowish brown in color (Munsell 10YR 4/2 to 4/4) in color and contain little rock.

Since most of the Plan Area is covered with impervious surfaces, it is hard to identify archaeological sites from surface survey. However, deeply-buried prehistoric sites with no surface indicators are found throughout the Bay Area, ranging from 550 to over 8,000 years old. Such sites were often buried by alluviation that accompanied the rapid rise in sea level since the end of the last ice age, and by filling, erosion, and deposition processes in the historic period.

To assess the archaeological sensitivity of the Plan Area, the attractiveness of the area for prehistoric settlement, the nature of historic activities in the area, and the degree of previous soil disturbance were considered. Places that are relatively flat, have easy access to fresh water, and are covered with young Holocene-era soils are more likely to contain prehistoric archaeological deposits than steep slopes or areas far from water (Meyer and Kaijankonski 2017). The Plan Area is largely flat and covered in late Holocene alluvial soils, and Derby Creek once flowed west-southwest through the Plan Area at Derby Street (Helley and Graymer 1997; Oakland Museum 2000). However, Derby Creek appears to have been a seasonal drainage rather than a perennial watercourse, as it is not shown on early maps (Kellersberger 1853), while Temescal and Strawberry Creeks are clearly delineated. The lack of access to year-round water supplies in the Plan Area therefore gives the area low sensitivity for buried prehistoric archaeological sites.

Historic activities can also create archaeological deposits. Before the advent of municipal trash collection after 1900, residents disposed of domestic trash in outdoor privies, pits in the backyard, or by burning. These activities often created deposits of historic artifacts. However, such deposits tended to be located behind residential or commercial buildings. The street layout of the Plan Area was established in the 1870s and largely predates residential or commercial development in the area, making it unlikely that historic archaeological deposits or building foundations would be found within the public right-of-way (that is, streets or sidewalks). However, the long history of rail transportation and infrastructure along Adeline Street and Martin Luther King Junior Way makes it possible that buried elements related to these uses – such as rails, ties, or signal apparatus – might be present underground.

These sensitivity assessments should bear in mind, however, that the Adeline Corridor was deeply excavated in 1967-1971 to construct the BART Richmond-Warm Springs line, which runs underground beneath Adeline Street and Shattuck Avenue for the whole length of the Plan Area, with a below-grade station and parking lot between Ashby Avenue, MLK Jr. Way, and Adeline Street. The travel lanes within these areas therefore have no sensitivity for archaeological deposits. Adeline Street also houses major subterranean utilities, including

storm, sewer, water and gas lines. Given this extensive disturbance, it is likely that few native soils remain under these main thoroughfares.

The low sensitivity of the Plan Area for buried prehistoric or historic archaeological deposits, combined with the extensive previous disturbance of the Plan Area, give the proposed Specific Plan a low likelihood to affect previously unknown archaeological resources.

### **c. Tribal Cultural Resources**

On September 7, 2018, the California Native American Heritage Commission (NAHC) provided the City of Berkeley with a consultation list of tribes in Alameda County, with recommendations for consultation. On September 12, 2018, the City of Berkeley sent consultation letters to the six tribal organizations noted on the NAHC's contact list for Alameda County, inviting them to participate in the consultation process. The letters communicated the results of the record search and invited the recipients to communicate any information or concerns they might have regarding the Plan Area. The City did not receive any responses to the letters, nor have any tribes inquired about the proposed Specific Plan.

### **d. Paleontological Resources**

Paleontological resources (fossils) are the remains and/or traces of prehistoric life. Fossils are typically preserved in layered sedimentary rocks and the distribution of fossils is a result of the sedimentary history of the geologic units within which they occur. Fossils occur in a non-continuous and often unpredictable distribution within some sedimentary units, and the potential for fossils to occur within sedimentary units depends on a number of factors. Although it is not possible to determine whether a fossil will occur in any specific location, it is possible to evaluate the potential for geologic units to contain scientifically significant paleontological resources, and therefore evaluate the potential for impacts to those resources, and provide mitigation for paleontological resources if they do occur during construction.

Rincon evaluated the paleontological sensitivity of the geologic units that underlie the Plan Area based on a review of published geologic maps and relevant paleontological and geological data in the scientific literature. Rincon reviewed fossil collections records from the University of California Museum of Paleontology (UCMP) online database, which contains known fossil localities. Rincon assigned a paleontological sensitivity to the geologic units within the Plan Area. The potential for impacts to significant paleontological resources is based on the potential for ground disturbance to directly impact paleontologically sensitive geologic units. The Society of Vertebrate Paleontology (SVP) (2010) has defined paleontological sensitivity and developed a system for assessing paleontological sensitivity, as discussed below.

### **Paleontological Resources Sensitivity**

Absent specific agency guidelines, most professional paleontologists in California adhere to guidelines set forth by SVP (2010) in "Standard Procedures for the Assessment and Mitigation of Adverse Impacts to Paleontological Resources". These guidelines establish detailed protocols for the assessment of the paleontological resource potential (i.e., "sensitivity") of a project area and outline measures to follow in order to mitigate adverse impacts to known or unknown fossil resources during project development. Using baseline information gathered during a paleontological resource assessment, the paleontological resource potential of the geologic unit(s) (or members thereof) underlying a project area can

be assigned to a high, undetermined, low, or no paleontological sensitivity category, as defined by SVP (2010). This criterion is based on rock units within which vertebrate or significant invertebrate fossils have been determined by previous studies to be present or likely to be present. While these standards were specifically written to protect vertebrate paleontological resources, all fields of paleontology have adopted these guidelines.

Significant paleontological resources are determined to be fossils or assemblages of fossils that are unique, rare, diagnostically important, or are common but have the potential to provide valuable scientific information for evaluating evolutionary patterns and geologic processes. New or unique specimens can provide new insights into evolutionary history; however, additional specimens of even well represented lineages can be equally important for studying evolutionary pattern and process, evolutionary rates and paleophylogeography. Even unidentifiable material can provide useful data for dating geologic units if radiocarbon dating is possible. As such, common fossils (especially vertebrates) may be scientifically important, and therefore considered highly significant.

The paleontological sensitivity of the project area was evaluated according to the following SVP (2010) categories:

- I. **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 which may contain new vertebrate deposits, traces, or trackways are also classified as significant.
- II. **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, phylogenetic species 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. However, as excavation for construction gets underway it is possible that significant and unanticipated paleontological resources might be encountered and require a change of classification from Low to High Potential and, thus, require monitoring and mitigation if the resources are found to be significant.
- III. **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.

**IV. No Potential.** Rock units of metamorphic or igneous origin are commonly classified as having no potential for containing significant paleontological resources.

In general terms, for geologic units with high sensitivity, full-time monitoring typically is recommended during any project-related ground disturbance. For geologic units with low sensitivity, protection or salvage efforts typically are not required. For geologic units with undetermined sensitivity, field surveys by a qualified paleontologist are usually recommended to specifically determine the paleontological potential of the rock units present within the study area. For geologic units with no sensitivity, a paleontological monitor is not required.

### Paleontological Resource Potential of the Plan Area

A search of the paleontological locality records on the UCMP online database resulted in no previously recorded vertebrate fossil localities within Holocene sedimentary deposits in the Plan Area or vicinity. Holocene sedimentary deposits, particularly those younger than 5,000 years old, are generally too young to contain fossilized material. Therefore, the Holocene deposits (Qhaf) mapped in the project site have been assigned a low paleontological sensitivity, in accordance with SVP (2010) guidelines.

#### 4.3.3 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
3. Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature
4. Disturb any human remains, including those interred outside of 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 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)]. Where the significance of a site is unknown, it is presumed to be significant for the purpose of the EIR investigation.

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 Specific Plan would be significant if the project would:

5. 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)
- 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 Measures

**Threshold 1:** Would the Specific Plan cause a substantial adverse change in the significance of a historical resource as defined in *CEQA Guidelines* §15064.5?

**IMPACT CR-1** THE PLAN AREA CONTAINS 25 KNOWN HISTORICAL RESOURCES AND THREE POTENTIAL HISTORIC DISTRICTS. DEVELOPMENT IN THE PLAN AREA COULD IMPACT THE IDENTIFIED HISTORICAL RESOURCES AND HISTORIC DISTRICTS AND HAS THE POTENTIAL TO IMPACT UNKNOWN HISTORICAL RESOURCES. HOWEVER, ADHERENCE TO THE CITY'S GENERAL PLAN POLICIES, EXISTING CITY REQUIREMENTS, AND TO THE STRATEGIES AND VISION OF THE PROPOSED SPECIFIC PLAN WOULD REDUCE IMPACTS TO LESS THAN SIGNIFICANT.

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## Built Environment Resources

Development activities resulting from implementation of the proposed Specific Plan would have a significant impact on historical resources if they would cause a substantial adverse change in the significance of a historical resource. As shown in Table 4.3-2, 25 built-environment resources in the Plan Area are listed on or appear eligible for inclusion on a federal, state, or local resources list. For built environment resources, activities that cause a substantial adverse effect on the significance of a historical resource constitute an effect on the environment. Demolition of historic resources would likely result in a significant impact under CEQA and would require mitigation. No demolition of historic or potentially historic resources is proposed under the proposed Specific Plan; however, the Specific Plan would facilitate new development that could involve partial or full demolition of historic resources. In addition, new development under the proposed Specific Plan may impact historic resources by affecting the properties' integrity of setting, feeling, or association. Integrity of setting refers to the physical environment of a historic property as it relates to the character of a place. Integrity of feeling is the ability to evoke the "aesthetic or historic sense of a past period of time," and integrity of association is the link between a property and the event or person, event, or trend for which it is significant. For example, projects implemented under the plan might cause an adverse effect if new buildings with different size, shape, massing, or materials impacted the historic feeling of a block or group of buildings by introducing new and contrasting aesthetics. Therefore, development under the proposed Specific Plan could have an effect upon known or unknown historic resources even if such development would not involve a direct impact such as demolition of a historic building.

Future development projects in the Plan Area would be required to adhere to the City of Berkeley General Plan policies, the proposed Adeline Corridor Specific Plan policies, and

other City programs related to reducing impacts to historic resources. In particular, General Plan Policies UD-1 and UD-6 require the identification and protection of historically significant resources and encourage adaptive re-use of historic structures when feasible. Specific Plan Chapter 3, Land Use, Strategy 3.6 calls for the active preservation, adaptation, and reuse of historic structures and resources throughout the Adeline Area, particularly landmarked structures of merit and those in historic districts. This strategy includes zoning incentives for adaptive reuse of historic resources, and encourages the City to consider seeking grant funding to prepare an area-wide Historic Resources Evaluation for the Plan Area to identify remaining historical resources not yet identified that should be protected.

The City's Landmarks Preservation Commission has regulatory authority over City-designated historic properties and is responsible to review applications for the alteration or demolition of Landmark and Structures of Merit and new construction in designated historic districts (BMC Chapter 3.24). The City requires project applicants to prepare Historic Resources Evaluations for projects involving demolition or major alteration to a structure or building that is more than 40 years old. For projects over 40 years of age that are not known historic resources, the Landmark Preservation Commission provides advisory comments if the City staff reviewing the project believes additional exploration of potential historical or architectural significance is needed. In considering the appropriateness of modifications or new construction, the Landmarks Preservation Commission assesses a full range of construction and design variables for the property (e.g., architectural style, appearance, height, materials, color) and the suitability of the proposed work for the setting. Therefore, with adherence to existing City policies and procedures and proposed Specific Plan policies, impacts to historical resources would be less than significant.

## Historic Districts

Three potential historic districts are present in the Plan Area, illustrated in Figure 4.3-2. The City of Berkeley has not formally established these areas as historic districts, but they have been determined to be eligible as historic districts and are, thus, considered historical resources under CEQA. The potential historic districts include the group of commercial buildings at the intersection of Ashby Avenue and Adeline Street and the residential and commercial buildings bounded by the south side of Ashby Avenue, the west side of Shattuck Avenue, the north side of Woolsey Street, and the east side of Adeline Street (illustrated in pink and green, respectively, on Figure 4.3-2); these are in the North Adeline subarea of the proposed Specific Plan. The potential historic district located at 3250-3286 Adeline Street (illustrated in blue on Figure 4.3-2) is in the South Adeline subarea of the proposed Specific Plan.

According to Chapter 3, Land Use and Character, of the proposed Specific Plan, "the role of historic preservation is particularly important in the South Adeline area – which includes large portions of the Lorin District – as well as the North Adeline area, particularly in the Antiques District and other historic buildings oriented around the intersection of Adeline Street and Ashby Street." Accordingly, the land use strategy of the proposed Specific Plan includes preservation of the character-defining features of these areas. For the North Adeline area, the land use strategy involves "historic preservation and the reuse of culturally and historically valuable buildings." For the South Adeline area, the vision includes "reinforcing existing uses, historic preservation, and context-sensitive infill development." Land Use Strategy 3.6 states, "preserving historical and cultural resources is a critical strategy for preserving neighborhood character and identity, promoting sustainability, and preserving community spaces and institutions." Further, as stated above, the City's Landmarks Preservation Commission has regulatory authority over new construction in

historic districts. As described in BMC Chapter 3.24, the Landmarks Preservation Commission may designate, after public hearings, a historic district and may control standards as the commission deems necessary or desirable to preserve the historic features of such districts. These controls may include façade, setback, height controls, signs, and public improvements. Because the Specific Plan and BMC include strategies to preserve the features of the potential historic districts, and implementation of the Specific Plan would adhere to these strategies, it would not significantly affect these resources.

## Mitigation Measures

None required.

**Threshold 2:** Would the Specific Plan cause a substantial adverse change in the significance of an archaeological resource pursuant to *CEQA Guidelines* Section 15064.5?

**IMPACT CR-2** THE PLAN AREA DOES NOT CONTAIN KNOWN ARCHAEOLOGICAL RESOURCES. NONETHELESS, DEVELOPMENT FACILITATED BY THE PROPOSED SPECIFIC PLAN HAS THE POTENTIAL TO IMPACT UNRECORDED ARCHAEOLOGICAL RESOURCES. HOWEVER, WITH COMPLIANCE WITH CITY OF BERKELEY STANDARD CONDITIONS OF APPROVAL, IMPACTS WOULD BE LESS THAN SIGNIFICANT.

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Actual effects on archaeological resources are known only when a particular project is proposed because those effects depend highly on both the individual project site conditions and the characteristics of the proposed ground-disturbing activity. As discussed under Section 4.3.2, Existing Conditions, the Plan Area has been identified as one with low sensitivity for buried prehistoric or historic archaeological resources due to the past disturbance. Therefore, development associated with Specific Plan implementation has a low likelihood to affect previously unrecorded archaeological resources.

Ground-disturbing activities associated with development facilitated by the proposed Specific Plan, particularly in areas that have not been studied through a cultural resources investigation or when excavation depths exceed those previously attained, do have the potential to damage or destroy previously-unrecorded historic or prehistoric archaeological resources that may be present on or below the ground surface. Consequently, damage to or destruction of previously-unrecorded sub-surface cultural resources could occur as a result of development under the proposed Specific Plan. This is a potentially significant impact. However, the City of Berkeley implements the following standard condition of approval for all projects in Berkeley:

Archaeological Resources (Ongoing throughout demolition, grading, and/or construction). Pursuant to CEQA Guidelines section 15064.5(f), “provisions for historical or unique archaeological resources accidentally discovered during construction” should be instituted. Therefore:

- A. In the event that any prehistoric or historic subsurface cultural resources are discovered during ground disturbing activities, all work within 50 feet of the resources shall be halted and the project applicant and/or lead agency shall consult with a qualified archaeologist, historian or paleontologist to assess the significance of the find.
- B. If any find is determined to be significant, representatives of the project proponent and/or lead agency and the qualified professional would meet to determine the appropriate avoidance measures or other appropriate measure, with the ultimate determination to be made by the City of Berkeley. All significant cultural materials

recovered shall be subject to scientific analysis, professional museum curation, and/or a report prepared by the qualified professional according to current professional standards.

- C. In considering any suggested measure proposed by the qualified professional, the project applicant shall determine whether avoidance is necessary or feasible in light of factors such as the uniqueness of the find, project design, costs, and other considerations.
- D. If avoidance is unnecessary or infeasible, other appropriate measures (e.g., data recovery) shall be instituted. Work may proceed on other parts of the project site while mitigation measures for cultural resources is carried out.
- E. If significant materials are recovered, the qualified professional shall prepare a report on the findings for submittal to the Northwest Information Center.

Adherence to this standard condition of approval would ensure that development carried out under the proposed Specific Plan would have a less than significant impact from potential adverse changes in the significance of archeological resources.

### Mitigation Measures

No mitigation is required beyond compliance with City of Berkeley standard conditions of approval for all projects.

**Threshold 3:** Would the Specific Plan directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?

**IMPACT CR-3** GROUND-DISTURBING ACTIVITIES ASSOCIATED WITH DEVELOPMENT FACILITATED BY THE PROPOSED SPECIFIC PLAN COULD RESULT IN DAMAGE TO OR DESTRUCTION OF PALEONTOLOGICAL RESOURCES. HOWEVER, WITH COMPLIANCE WITH CITY OF BERKELEY STANDARD CONDITIONS OF APPROVAL, IMPACTS WOULD BE LESS THAN SIGNIFICANT.

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The Holocene alluvial fan and fluvial deposits mapped in the Plan Area are determined to have a low paleontological resource potential because they are likely too young to contain fossilized material. At an unknown depth, the Holocene deposits may grade into Pleistocene alluvial deposits of sufficient age to contain fossilized remains. Development under the Specific Plan would occur in previously disturbed land along the Adeline Corridor and it is unlikely that construction would disturb previously undisturbed Pleistocene strata with buried paleontological resources. Impacts to paleontological resources are not anticipated. Nonetheless, fossils may be unexpectedly encountered during ground disturbance facilitated by the Specific Plan. This is a potentially significant impact. However, the City of Berkeley implements the following standard condition of approval for all projects in Berkeley:

Paleontological Resources (Ongoing throughout demolition, grading, and/or construction). In the event of an unanticipated discovery of a paleontological resource during construction, excavations within 50 feet of the find shall be temporarily halted or diverted until the discovery is examined by a qualified paleontologist (per Society of Vertebrate Paleontology standards [SVP 1995,1996]). The qualified paleontologist shall document the discovery as needed, evaluate the potential resource, and assess the significance of the find. The paleontologist shall notify the appropriate agencies to determine procedures that would be followed before construction is allowed to resume at the location of the find. If the City determines that avoidance is not feasible, the paleontologist shall prepare an excavation plan for mitigating the effect of the project on

the qualities that make the resource important, and such plan shall be implemented. The plan shall be submitted to the City for review and approval.

Adherence to this standard condition of approval would ensure that development carried out under the proposed Specific Plan would have a less than significant impact with respect to impacts to paleontological resources.

### Mitigation Measure

No mitigation is required beyond compliance with City of Berkeley standard conditions of approval for all projects.

**Threshold 4:** Would the Specific Plan disturb any human remains, including those interred outside of dedicated cemeteries?

**Impact CR-4** GROUND-DISTURBING ACTIVITIES ASSOCIATED WITH DEVELOPMENT UNDER THE PROPOSED SPECIFIC PLAN COULD RESULT IN DAMAGE TO OR DESTRUCTION OF HUMAN BURIALS. HOWEVER, ADHERENCE TO EXISTING REGULATIONS REGARDING THE DISCOVERY OF HUMAN REMAINS AND TO CITY OF BERKELEY STANDARD CONDITIONS OF APPROVAL WOULD REDUCE POTENTIAL IMPACTS TO A LESS THAN SIGNIFICANT LEVEL.

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Human burials outside of formal cemeteries often occur in prehistoric archeological contexts. Although the Plan Area is built out, the potential still exists for these resources to be present. Excavation during construction activities in the Plan Area would have the potential to disturb these resources, which could include Native American burial sites.

Human burials, in addition to being potential archaeological resources, have specific provisions for treatment in Section 5097 of the California PRC. The California Health and Safety Code (§§7050.5, 7051, and 7054) has specific provisions for the protection of human burial remains. Existing regulations address the illegality of interfering with human burial remains, and protect them from disturbance, vandalism, or destruction. They also include established procedures to be implemented if Native American skeletal remains are discovered. PRC §5097.98 also addresses the disposition of Native American burials, protects such remains, and established the NAHC to resolve any related disputes. In addition, the City requires the following standard condition of approval for all projects in Berkeley:

Human Remains (Ongoing throughout demolition, grading, and/or construction). In the event that human skeletal remains are uncovered at the project site during ground-disturbing activities, all work shall immediately halt and the Alameda County Coroner shall be contacted to evaluate the remains, and following the procedures and protocols pursuant to Section 15064.5 (e)(1) of the CEQA Guidelines. If the County Coroner determines that the remains are Native American, the City shall contact the California Native American Heritage Commission (NAHC), pursuant to subdivision (c) of Section 7050.5 of the Health and Safety Code, and all excavation and site preparation activities shall cease within a 50-foot radius of the find until appropriate arrangements are made. If the agencies determine that avoidance is not feasible, then an alternative plan shall be prepared with specific steps and timeframe required to resume construction activities. Monitoring, data recovery, determination of significance and avoidance measures (if applicable) shall be completed expeditiously.

Adherence to this standard condition of approval and implementation of these regulations would ensure that development carried out under the proposed Specific Plan would have a

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less than significant impact from potential disturbance of human remains, including those interred outside of formal cemeteries.

### Mitigation Measures

No mitigation measures are required with required adherence to existing regulation and City of Berkeley standard conditions of approval.

<p><b>Threshold 5:</b> Would the Specific Plan 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:</p> <p>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</p> <p>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?</p>
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**Impact CR-5** SITE PREPARATION AND CONSTRUCTION ASSOCIATED WITH DEVELOPMENT AND RIGHT-OF-WAY IMPROVEMENTS UNDER THE PROPOSED SPECIFIC PLAN COULD ADVERSELY IMPACT TRIBAL CULTURAL RESOURCES (TRC). HOWEVER, WITH COMPLIANCE WITH CITY OF BERKELEY STANDARD CONDITIONS OF APPROVAL, IMPACTS WOULD BE LESS THAN SIGNIFICANT.

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Effects on TRCs are only known once a specific project has been proposed because the effects depend highly on both the individual project site conditions and the characteristics of the proposed ground-disturbing activity. Future projects completed under the Specific Plan, as projects subject to CEQA, must comply with the requirements of AB 52, including consultation with California Native American tribes when each project is proposed, where it may result in the identification of TRCs. As described in the project setting, the Bay Area has a long history of Native American occupation, and development activities associated with the implementation of the proposed Specific Plan have the potential to significantly impact TRCs. Impacts are considered potentially significant. However, the City of Berkeley implements the following standard condition of approval for all projects in Berkeley:

Halt Work/Unanticipated Discovery of Tribal Cultural Resources. In the event that cultural resources of Native American origin are identified during construction, all work within 50 feet of the discovery shall be redirected. The project applicant and project construction contractor shall notify the City Planning Department within 24 hours. The City will again contact any tribes who have requested consultation under AB 52, as well as contact a qualified archaeologist, to evaluate the resources and situation and provide recommendations. If it is determined 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 Native American groups. If the

resource cannot be avoided, additional measures to avoid or reduce impacts to the resource and to address tribal concerns may be required.

Adherence to this standard condition of approval would ensure that development carried out under the proposed Specific Plan would have a less than significant impact to tribal cultural resources.

### **Mitigation Measures**

No mitigation is required beyond compliance with City of Berkeley standard conditions of approval for all projects.

### **c. Cumulative Impacts**

Cumulative development in the Plan Area would disturb areas that may contain cultural, tribal cultural, and paleontological resources. While there is the potential for significant cumulative impacts to cultural, tribal cultural, and paleontological resources in the City, it is anticipated that potential impacts associated with individual development projects would be addressed on a case-by-case basis and would be subject to City policies and local and state regulations regarding the protection of such resources. With compliance with existing policies and regulations, future development in the City and region would be required to avoid or mitigate the loss of these resources. The proposed Specific Plan's impacts can be reduced to below a level of significance with the standard conditions of approval described above. Therefore, significant cumulative resource impacts would not occur.

## 4.4 Geology and Soils

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This section assesses potential impacts related to geologic and soil hazards.

### 4.4.1 Setting

#### a. Topography and Geology

Berkeley is located on the East Bay Plain (the Plain), a flat area that extends 50 miles from Richmond in the north to San Jose in the south. The Plain is about three miles wide in the Berkeley area. At its eastern edge, the plain transitions into hills, rising to approximately 1,683 feet at Barberr Peak, the highest point in Berkeley's Claremont Hills neighborhood. On its western edge, the Plain slopes down to San Francisco Bay, the largest estuary on the California coast (City of Berkeley 2001c; Elevation.maplogs.com 2018).

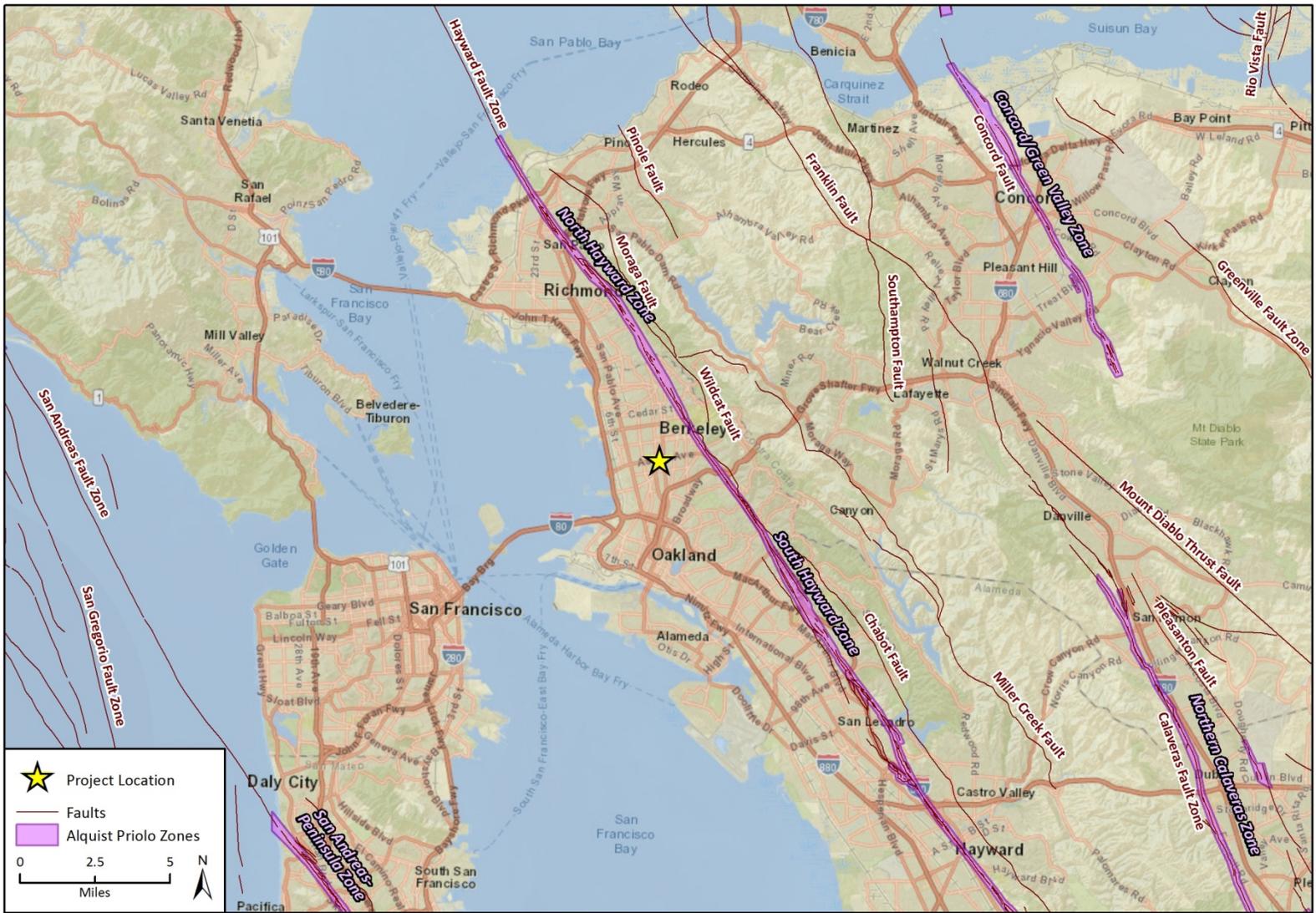
Berkeley's rich alluvial soils and temperate climate support a wide variety of plants and animals. Wetlands in the western part of Berkeley provide habitat for the salt marsh harvest mouse and other special status species. Strawberry Creek and Cordonices Creek remain two of the few waterways in the urbanized East Bay that retains their natural character along most of their respective courses (City of Berkeley 2001c).

Berkeley is located in the United States Geological Survey's (USGS) Richmond and Oakland West Quadrangle 7.5-minute topographic map areas. The area is typified by low topographic relief, with gentle slopes to the west in the direction of San Francisco Bay. By contrast, the Berkeley Hills that lie directly east of Berkeley have more pronounced topographic relief, with elevations that exceed 1,000 feet above mean sea level (City of Berkeley 2001b).

The geology in the vicinity of Berkeley has been mapped by a variety of organizations, including the USGS. In its 2000 geologic map and map database for the Oakland, California area, the shallow geology underlying much of Berkeley is shown to consist of Holocene alluvium with fluvial deposits frequently composed of medium dense to dense, gravelly sand or sandy gravel that often grade upward to sandy or silty clay. Close to the bay shoreline along the west edge of Berkeley, the shallow geology is dominated by artificial fill and, in places, Bay Mud. The bedrock geology beneath Berkeley is best expressed in the hills that flank the east side of Berkeley that are directly underlain by highly altered Jurassic metamorphic and plutonic rocks. Some of these rocks include pillow basalts and keratophyres (a type of silica-rich volcanic rock) that have been mapped as members of the Coast Range Ophiolite complex, a rock assemblage that is widely believed to represent oceanic crustal material that was tectonically emplaced along the west margin of the North American (tectonic) Plate (Case 1968).

Additionally, the Plan Area is located near the San Andreas and Hayward fault zones, one of the most seismically active regions in the United States, but it is not located in an Earthquake Fault Zone as defined by the Alquist-Priolo Earthquake Fault Zoning Act of 1972 (Department of Conservation 2018). Plan Area faults are discussed in greater detail below under part (d). Figure 4.4-1 shows faults near the Plan Area.

Figure 4.4-1 Fault Lines in the Vicinity of the Plan Area



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Additional data provided by USGS, 2010; California Department of Conservation, California Geological Survey, 2015.

Fig X Regional Faults

**b. Soils**

As mapped by the U.S. Department of Agriculture (USDA), Natural Resource Conservation Service (NRCS), the Plan Area features three soil types (USDA 2017). The Plan Area is made up primarily of Tierra complex slopes that have from two to five percent slopes. The remainder of the Plan Area is composed of Clear Lake complex, zero to two percent. Figure 4.4-2 shows Plan Area soils. Table 4.4-1 presents soil characteristics related to water holding capacity, permeability, shrink-swell potential, rate of surface runoff, and erosion hazard.

**Table 4.4-1 Plan Area Soil Parameters**

Map Unit #	Name	Water Holding Capacity (in.)	Permeability (in/hr)	Shrink-Swell Potential	Rate of Surface Runoff	Erosion Hazard
148	Clear Lake clay, 0 to 2 percent slopes, drained	8.4	Moderately low to Moderately high	High	Medium	None
150	Tierra complex, 2 to 5 percent slopes	1.8	Very low/ Moderately low	High	High	Slight

Sources: USDA 2017, USDA 1981

**c. Geologic Hazards**

Similar to much of California, the Plan Area is located in a seismically active region. The seismic hazards relevant to the Plan Area are described below.

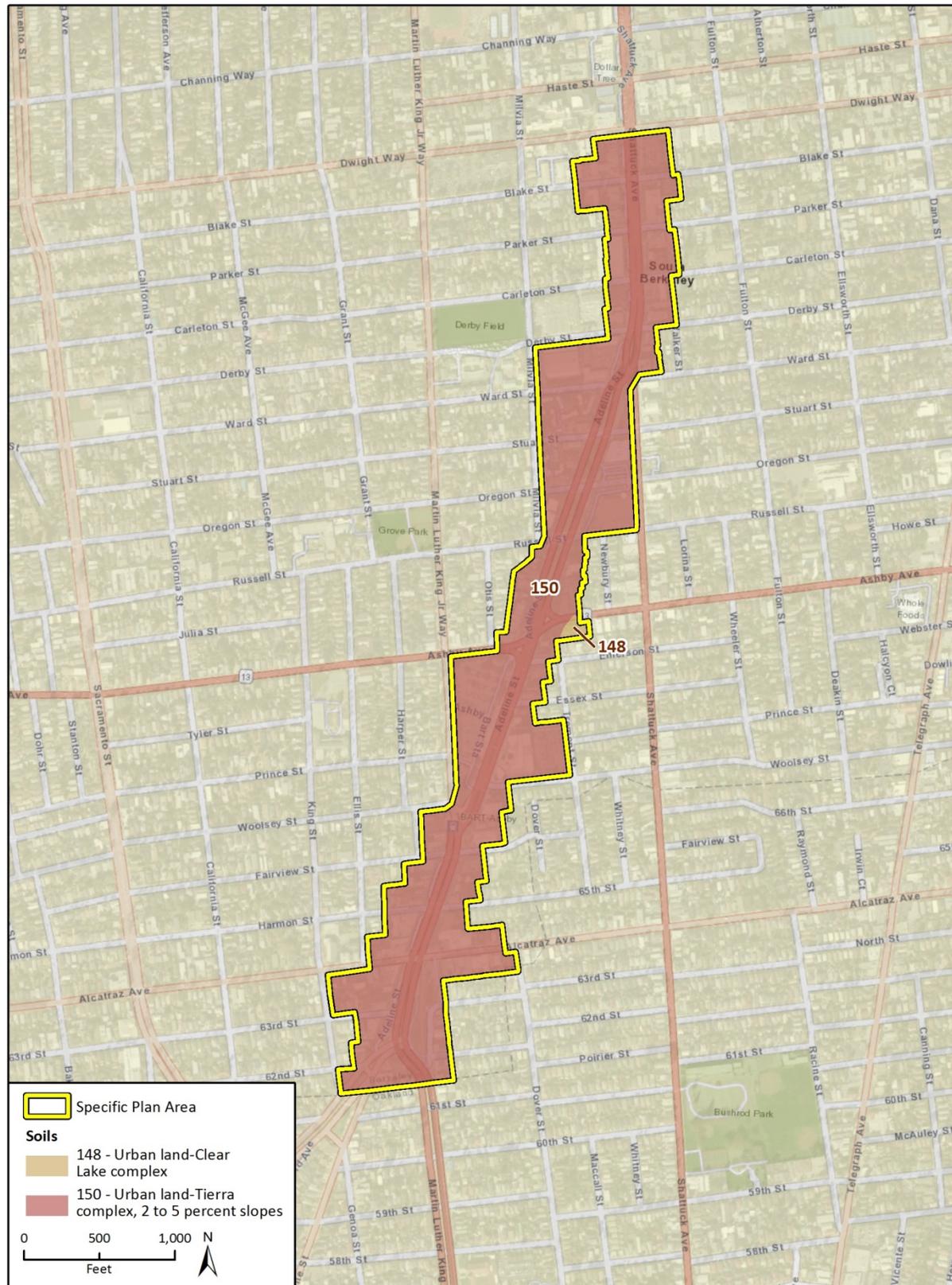
**Faulting and Seismically Induced Ground Shaking**

The USGS defines active faults as those that have had surface displacement within the Holocene period (about the last 11,000 years). Surface displacement can be recognized by the existence of cliffs in alluvium, terraces, offset stream courses, fault troughs and saddles, the alignment of depressions, sag ponds, and the existence of steep mountain fronts. Potentially active faults are those that have had surface displacement during the last 1.6 million years, and inactive faults have not had surface displacement within that period. Several faults are near the Plan Area (Figure 4.4-1). These major faults and fault zones are described in the paragraphs below:

*San Andreas Fault*

The San Andreas Fault, the most likely source of a major earthquake in California, is located approximately 15 miles west of Berkeley. 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. In general, the San Andreas Fault is likely capable of producing a Maximum Credible Earthquake of 8.0.

Figure 4.4-2 Plan Area Soils Map



Imagery provided by Esri and its licensors © 2018.  
 Additional data provided by USDA NRCS SSURGO, 2018.

FigX Soils

### *Hayward Fault*

The Hayward Fault, one of ten major faults that make up the San Andreas Fault Zone, runs east of the Plan Area and links with the Rodgers Creek Fault to the north. Although the last major earthquake generated by the Hayward Fault was in 1868, pressure is slowly building again and will begin to overcome the friction and other forces that cause the fault zone to stick. According to a study of earthquake probabilities by the USGS, the fault system that includes the Hayward and Rodgers Creek faults has a 31 percent probability of generating an earthquake with a magnitude greater than or equal to 6.7 on the Mercalli Richter Scale in the next 20 years (City of Berkeley 2014). The Hayward Fault would likely cause extensive damage throughout the Plan Area due to its close proximity to urban communities and infrastructure. The Hayward Fault and surrounding area is a designated Alquist-Priolo Zone, an area that lies approximately 1.5 miles east of the Plan Area (Figure 4.4-1).

Other active faults near the Plan Area include the Wildcat and the Miller Creek faults and several potentially active faults and unnamed secondary faults adjacent to these. There are few or no studies pertaining to these additional secondary faults, and it is unknown whether they may or may not experience secondary ground rupture during a large earthquake.

In addition to the primary hazard of surface rupture, earthquakes often result in secondary hazards that can cause widespread damage. The most likely secondary earthquake hazards in the Plan Area are ground shaking, liquefaction, and settlement (City of Berkeley 2001b).

### **Surface Rupture**

Faults generally produce damage in two ways: ground shaking and surface rupture. Surface rupture is limited to very near the fault. As discussed above, the Hayward Fault runs northeast of the Plan Area. Since the fault zone is outside the Plan Area, surface rupture in the Plan Area is not expected to occur (Figure 4.4-1).

### **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 Plan Area assumes a 6.9 magnitude earthquake on the Hayward Fault system. The predicted ground-shaking from such an earthquake would be “very violent” or “violent” throughout the Plan Area (ABAG 2016).

Hazards associated with seismically induced ground shaking include liquefaction, seismically induced settlement, and earthquake-triggered landslides. Movement along any of the faults shown in Figure 4.4-1 could potentially generate substantial ground shaking in the Plan Area leading to these secondary hazards, as discussed below.

### **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.

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.

Earthquake hazard maps produced by ABAG indicate that a large Hayward Fault quake would trigger violent shaking throughout Berkeley and a high risk of liquefaction across the city, including in the Plan Area (City of Berkeley 2001b). The Plan Area is in an area identified by the California Geologic Survey, California Department of Conservation (2006), as having low to medium susceptibility and therefore is in a Zone of Required Investigation for liquefaction potential (Figure 4.4-3). The identified seismic hazard zone is due to the area having historical occurrence of liquefaction, or where local geological geotechnical and ground-water conditions indicate a potential for permanent ground displacements such that mitigation as defined in Public Resources Code Section 2693(c). However, seismic hazard zones identified by the California Geologic Survey may include developed land where delineated hazards have already been mitigated to city or county standards.

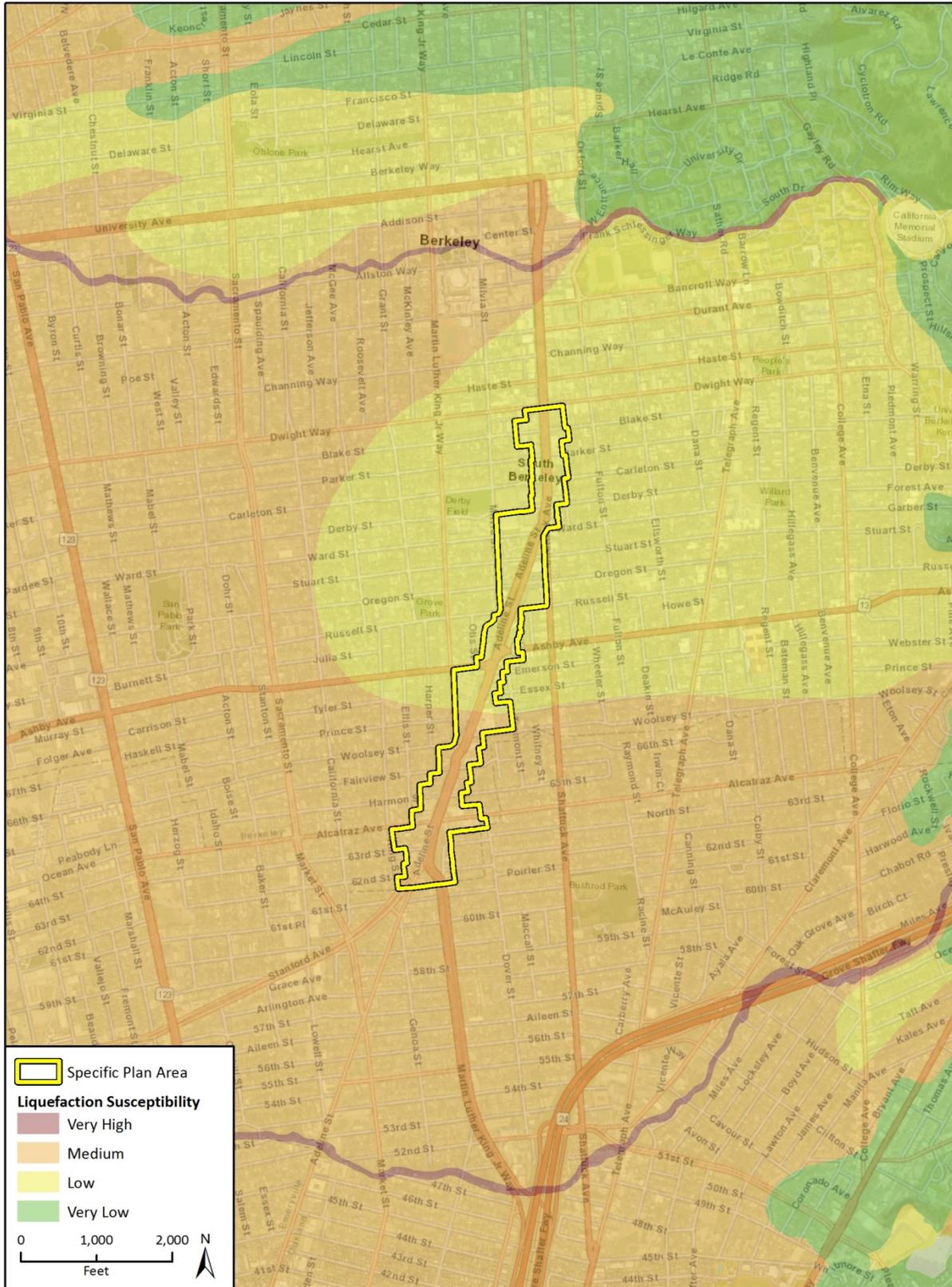
## **Landslides**

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.

According to the Disaster Preparedness and Safety Element of the City of Berkeley General Plan (2001b), landslide risk is low throughout the majority of Berkeley. However, localized areas of instability exist throughout the Berkeley Hills (Figure 4.4-4). The Plan Area is generally flat and not located in the Berkeley hills. Therefore, landslides in the Plan Area are unlikely.

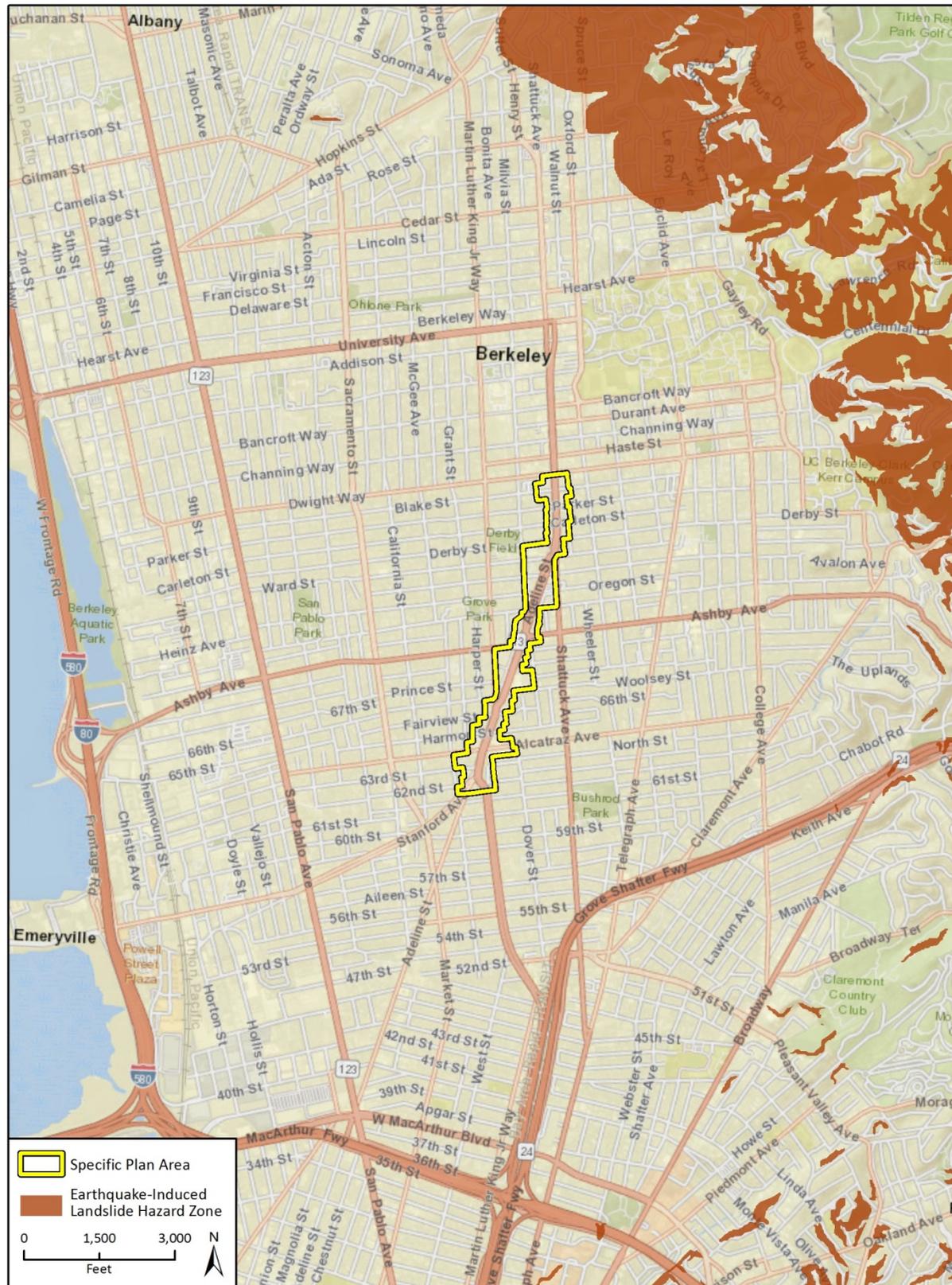
Figure 4.4-3 Liquefaction Susceptibility Map



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Additional data provided by USGS, CGS, 2006.

Fig 19 Liquefaction

Figure 4.4-4 Landslide Hazard Map



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Additional data provided by CGS, 2016.

Fig 20 Landslide Hazard

## 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. As shown in Table 4.4-1, the USGS has mapped soils in the Plan Area as having high potential for shrink-swell. Areas characterized by moderate shrink-swell potential may pose a geologic hazard in the Plan Area.

## 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.

The Plan Area lies in a generally flat area, sitting at approximately 100 feet above mean sea level and the Plan Area is characterized by having “none” or a “slight” potential for erosion-related hazards. Additionally, the majority of on-site soils have “none” or a “slight” potential for erosion-related hazards.

## d. Regulatory Setting

### Federal

#### *Clean Water Act*

Congress enacted the Clean Water Act (CWA), formerly the Federal Water Pollution Control Act of 1972, with the intent of restoring and maintaining the chemical, physical, and biological integrity of the waters of the United States. The CWA requires states to set standards to protect, maintain, and restore water quality through the regulation of point source and non-point source discharges to surface water. Those discharges are regulated by the National Pollutant Discharge Elimination System (NPDES) permit process (CWA Section 402). NPDES permitting authority is administered by the California State Water Resources Control Board (SWRCB) and its nine Regional Water Quality Control Boards (RWQCB). Berkeley is in a watershed administered by the Bay Area RWQCB. Individual projects within Berkeley that disturb more than one acre would be required to obtain NPDES coverage under the California General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities (Construction General Permit). The Construction General Permit requires the development and implementation of a storm water pollution prevention plan describing best management practices (BMP) the discharger would use to prevent and retain stormwater runoff and to prevent soil erosion.

## State

### *California Building Code*

The CBC, Title 24, Part 2 provides building codes and standards for the design and construction of structures in California. It requires, among other things, seismically resistant construction and foundation and soil investigations prior to construction. The CBC also establishes grading requirements that apply to excavation and fill activities and requires the implementation of erosion control measures. The City is responsible for enforcing the 2016 CBC, or most current CBC version, within the Plan Area.

### *Alquist-Priolo Earthquake Fault Zoning Act*

The Alquist-Priolo Earthquake Fault Zoning Act of 1972 was passed into law following the destructive February 9, 1971 M6.6 San Fernando earthquake. The Act provides a mechanism for reducing losses from surface fault rupture on a statewide basis. The intent of the Act is to ensure public safety by prohibiting the siting of most structures for human occupancy across traces of active faults that constitute a potential hazard to structures from surface faulting or fault creep. This Act groups faults into categories of active, potentially active, and inactive. Historic and Holocene age faults are considered active, Late Quaternary and Quaternary age faults are considered potentially active, and pre-Quaternary age faults are considered inactive. There are no Earthquake Hazards Zones in the Plan Area.

### *Seismic Hazards Mapping Act*

The Seismic Hazards Mapping Act addresses geo-seismic hazards, other than surface faulting, and applies to public buildings and most private buildings intended for human occupancy. The Seismic Hazards Mapping Act identifies and maps seismic hazard zones to assist cities and counties in preparing the safety elements of their general plans and encourages land use management policies and regulations that reduce seismic hazards. The Act mandated the preparation of maps delineating “Liquefaction and Earthquake-Induced Landslide Zones of Required Investigation.” The Plan Area contains land designated as liquefaction risk areas according to the California Geologic Survey (2003).

## Local

### *Berkeley Municipal Code*

Chapter 21, Section 40, Grading, erosion and sediment control requirements of the Berkeley Municipal Code (BMC) requires projects to comply with all grading, erosion and sediment control regulations on file in the Public Works Department.

### *City of Berkeley General Plan: A Guide to Public Decision-Making (2003).*

The following goal, policies, and actions in the Safety Element of the City’s General Plan relate to geology and soils:

**Policy S-13: Hazards Identification.** Identify, avoid and minimize natural and human-caused hazards in the development of property and the regulation of land use.

**Action S-13A.** Maintain and make publicly available up-to-date hazards maps identifying areas subject to heightened risk from potential seismic hazards (including

fault rupture, ground failure, ground shaking, and liquefaction), and fire, flood, landslide, and other hazards, such as toxic contamination and radioactive release.

**Action S-13B.** Improve the understanding of identified hazards and mitigation needs via area-specific studies such as microzonation studies.

**Policy S-14: Land Use Regulation.** Require appropriate mitigation in new development, in redevelopment/reuse, or in other applications.

**Action S-14B.** Require soil investigation and/or geotechnical reports in conjunction with development/redevelopment on sites within designated hazard zones such as areas with high potential for soil erosion, landslide, fault rupture, liquefaction and other soil-related constraints.

**Action S-14 C.** Place structural design conditions on new development to ensure that recommendations of the geotechnical/soils investigations are implemented.

**Action S-14 D.** Encourage owners to evaluate their buildings' vulnerability to earthquake hazards, fire, landslides, and floods and to take appropriate action to minimize risk.

**Action S-14E.** Develop criteria for disaster-resistant land use regulations to ensure that new construction reduces rather than increases risk of all kinds.

**Policy S-15: Construction Standards.** Maintain construction standards that minimize risks to human lives and property from environmental and human-caused hazards for new and existing buildings.

**Action S-15A.** Periodically update and adopt the California Building Standards Code with local amendments to incorporate the latest knowledge and design standards to protect people and property against known fire, flood, landslide, and seismic risks in both structural and non-structural buildings and site components.

**Action S-15B.** Ensure proper design and construction of hazard-resistant structures through careful plan review/ approval and thorough and consistent construction inspection.

**Policy S-17: Residential Seismic Retrofitting Incentive Program.** Maintain existing program such as the Residential Seismic Retrofitting Incentive Program to facilitate retrofit of potentially hazardous structures.

**Action S-17A.** Expand public awareness of the program and take other actions to publicize and improve the effectiveness of the program.

**Policy S-19: Risk Analysis.** Understand and track changes in seismic risk utilizing the best available information and tools.

**Action S-19A.** Make maximum use of new available information to update maps to depict seismic hazards.

**Action S-19B.** Encourage building owners (including public sector agencies and local jurisdictions) to install instruments to record earthquake shaking in conjunction with the State's Strong Motion Instrumentation Program.

*South Berkeley Area Plan*

The planning area for the City's 1990 South Berkeley Area Plan encompasses a portion of the Plan Area (see Figure 2-2 in Section 2, *Project Description*) and includes the following goals and policies related to seismic safety:

**Goal 1:** Reduce the risk of earthquake damage to people and property.

**Policy 1.1:** Develop a community awareness program to ensure that seismic safety information is widely available and effectively utilized.

**Policy 1.1:** Encourage residents to reduce earthquake hazards within their own buildings.

**Policy 1.3:** Ensure that wherever possible the reduction of earthquake hazards does not create undue economic hardship for the residents of the area.

#### 4.4.2 Impact Analysis

##### a. Methodology and Significance Thresholds

Assessment of impacts is based on review of Plan Area information and conditions and General Plan information regarding geologic issues. In accordance with Appendix G of the *CEQA Guidelines*, a project would result in a significant impact if it would:

1. Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:
  - i. Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault
  - ii. Strong seismic ground shaking
  - iii. Seismic-related ground failure, including liquefaction
  - iv. 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 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

## b. Project Impacts and Mitigation Measures

**Threshold 1:** Would the Specific Plan expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:

- i. Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault
- ii. Strong seismic ground shaking
- iii. Seismic-related ground failure, including liquefaction
- iv. Landslides

**Threshold 3:** Would the Specific Plan 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?

**IMPACT GEO-1** THE PLAN AREA IS NEAR THE HAYWARD FAULT ZONE AND OTHER FAULTS. THEREFORE, THE PLAN AREA IS SUBJECT TO SEISMICALLY-INDUCED GROUND SHAKING AND OTHER SEISMIC HAZARDS, INCLUDING LIQUEFACTION, WHICH COULD DAMAGE STRUCTURES IN THE PLAN AREA AND RESULT IN LOSS OF PROPERTY AND RISK TO HUMAN HEALTH AND SAFETY. HOWEVER, INCORPORATION OF STATE-MANDATED BUILDING STANDARDS AND COMPLIANCE WITH GENERAL PLAN POLICIES WOULD ENSURE IMPACTS WOULD BE LESS THAN SIGNIFICANT.

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### Ground Rupture

The Plan Area is located in a seismically active region of California and is subject to potential ground shaking associated with seismic activities. Specifically, the Hayward Fault runs approximately 1 miles east of the Plan Area (Figure 4.4-1). However, the Plan Area is not located in an Alquist-Priolo Earthquake Fault Zone, as delineated by the USGS. Therefore, implementation of the Specific Plan would not directly expose persons or structures to substantial risk of surface rupturing in the event of an earthquake. Impacts related to ground rupture would be less than significant.

### Seismic Shaking

The Hayward fault system near the Plan Area has been assessed to have a 31 percent probability of generating an earthquake with a magnitude greater than or equal to 6.7 on the Mercalli Richter Scale in the next 30 years (Alameda County 2013). A seismic event with magnitude 6.7 or greater would be substantial and would have potential to damage structures and result in loss of property and risk to human health and safety. These risks exist throughout the Plan Area, regardless of development proposed under the Specific Plan. The area is currently developed and populated. Full implementation of the proposed Specific Plan would increase population of the area, structural development, and infrastructure that would be exposed to these hazards.

The proposed Specific Plan would promote infill development, which would in many cases replace older buildings subject to seismic damage with newer structures built to current seismic standards that could better withstand the adverse effects of strong ground shaking. New development that would occur within the Plan Area would be required to conform to the CBC (as amended at the time of permit approval) as required by law. The City of Berkeley

has adopted the CBC by reference pursuant to Title 19, Chapter 28 of the BMC. Chapter 38 of the CBC contains specific requirements for structural design, including seismic loads and Chapter 21, Section 40, of the BMC includes requirements for soil testing, excavation and grading, and foundation design (City of Berkeley 2016). As discussed above under *Regulatory Environment*, the CBC requires that structures be designed and constructed to resist seismic hazards, including through foundation design and the completion of soil investigations prior to construction. The City would ensure that any development occurring under the proposed Specific Plan will be consistent with the current CBC, thereby ensuring that appropriate investigations and design measures have been employed to effectively minimize or avoid potential hazards associated with redevelopment and/or new building construction. Proper engineering, including compliance with the CBC, would minimize the risk to life and property associated with potential seismic activity in the area. Impacts related to seismic shaking would be less than significant with no mitigation required.

### Unstable Soils and Liquefaction

A portion of the Plan Area south of Alcatraz Avenue is located in an area of medium liquefaction hazard potential (Figure 4.4-3) (California Geological Survey 2003). As such, the Plan Area has been identified as an area where historical liquefaction has occurred, or local geological, geotechnical and ground-water conditions indicate a potential for permanent ground displacement. Unstable soils in the Plan Area also introduce potential risks to existing or proposed infrastructure, and/or to human health and safety. Unstable soils may include any materials not capable of supporting a selected land use.

As required by the Public Resources Code (PRC) Section 2690-2699.6, *Seismic Hazards Mapping Act* and CBC requirements as adopted in the BMC, site-specific geotechnical evaluations would be conducted for individual development projects with the Plan Area to identify the degree of potential hazards, design parameters for the project based on the hazard, and describe appropriate mitigation measures. These geotechnical studies customarily include recommendations for foundation design, as well as soil improvement techniques, both of which help mitigate these unstable soils and liquefaction hazards. In addition, *Action S-13A: Hazards Identification and Action S-14B: Land Use Regulation* of the City's General Plan Disaster Preparedness and Safety Element would provide extra measures to identify and mitigate potential risks of seismic hazards for new development and renovation within the Plan Area. Future development included under the proposed Specific Plan would be reviewed for consistency with these policies, meaning that development located in areas with identified hazards such as those associated with liquefaction potential would be required to appropriately address and be designed to withstand associated hazards to the maximum extent feasible. In general, the proposed Specific Plan could facilitate projects that would replace older buildings subject to seismic damage with newer structures built to current seismic standards that could better withstand the adverse effects associated with unstable soils and liquefaction.

Compliance with the CBC, PRC Section 2690-2699.6, General Plan policies, and the City's Municipal Code would ensure that potential impacts associated with unstable soils and liquefaction are less than significant.

### Landslides

The Plan Area is generally flat and not located near hillsides or in a mapped landslide hazard zone (see Figure 4.4-4). Therefore, future development in the Plan Area would not expose people or structures to potential substantial adverse effects associated with landslides.

## Mitigation Measures

No mitigation measures are required.

**Threshold 2:** Would the Specific Plan result in substantial soil erosion or loss of topsoil?

**IMPACT GEO-2** WITH ADHERENCE TO APPLICABLE LAWS AND REGULATIONS, THE PROPOSED SPECIFIC PLAN WOULD NOT RESULT IN SUBSTANTIAL SOIL EROSION OR THE LOSS OF TOPSOIL. THEREFORE, IMPACTS WOULD BE LESS THAN SIGNIFICANT.

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As mapped by the NRCS, two soil types are located in the Plan Area (USDA 2017). The Plan Area is composed primarily of Tierra complex two to five percent slopes and Clear Lake complex zero to two percent slopes. Figure 4.4-2 shows Plan Area soils and Table 4.4-1 lists soil characteristics for the Plan Area soils related to water holding capacity, permeability, shrink-swell potential, rate of surface runoff, and erosion hazard. The Plan Area lies in a generally flat region, approximately 100 feet above mean sea level, and the Plan Area soils are characterized by having “none” or a “slight” potential for erosion-related hazards, which limits the potential for substantial soil erosion (refer to Section 4.7, *Hydrology and Water Quality*).

Construction activities that disturb one or more acres of land surface are subject to the NPDES General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities (Order No. 2012-0006-DWQ) adopted by the SWRCB. Compliance with the NPDES permit requires each qualifying development project to file a Notice of Intent with the SWRCB. Permit conditions require the development of a stormwater pollution prevention plan, which must describe the site, the facility, erosion and sediment controls, runoff water quality monitoring, means of waste disposal, implementation of approved local plans, control of construction sediment and erosion control measures, maintenance responsibilities, and non-stormwater management controls. Inspection of construction sites before and after storms is also required to identify stormwater discharge from the construction activity and to identify and implement erosion controls, where necessary. Compliance with the Construction General Permit is reinforced through the City’s Municipal Code in Chapter 21, Section 40, which requires applicants to comply with grading, erosion and sedimentation control plan regulations on file with the Public Works Department.

In addition, adherence to Action S-14B of the General Plan Environmental Hazards Element, which requires soil investigations or geotechnical reports in conjunction with development and redevelopment on sites in designated geologic hazards zones. These reports must address the degree of hazard and recommend design parameters for the project based on the hazard and appropriate mitigation measures as needed.

The existing soil composition of the overall Plan Area, along with required compliance with aforementioned policies, NPDES permit and regulations, ensures that impacts associated with substantial soil erosion or loss of topsoil would be less than significant.

## Mitigation Measures

No mitigation measures are required.

**Threshold 4:** Would the Specific Plan be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?

**IMPACT GEO-3** THE PLAN AREA IS LOCATED ON EXPANSIVE SOILS. PROPER SOIL ENGINEERING PRACTICES WOULD BE REQUIRED TO ENSURE THAT SOIL CONDITIONS WOULD NOT RESULT IN SIGNIFICANT ADVERSE IMPACTS. WITH REQUIRED IMPLEMENTATION OF STANDARD ENGINEERING PRACTICES, IMPACTS ASSOCIATED WITH UNSTABLE OR EXPANSIVE SOILS WOULD BE LESS THAN SIGNIFICANT.

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Expansive soils are characterized by high clay content which expands when saturated with water and shrinks when dry, potentially threatening the integrity of buildings and infrastructure foundations. Figure 4.4-2 shows that soil types in the proposed Plan Area include the following: Tierra complex (two to five percent slope) and Clear Lake clay (zero to two percent slopes). As indicated in Table 4.4-1, these soil types have high potential for shrink-swell behavior, or expansiveness. The presence of expansive soils throughout the proposed Plan Area would make it necessary to conduct geologic investigations for all future development projects and ensure that soils for foundation support are sound. Building on unsuitable soils would have the potential to create future subsidence or collapse issues that could result in the settlement of Specific Plan infrastructure, and/or the disruption of utility lines and other services.

Compliance with existing State and local laws and regulations, such as the CBC and General Plan Action S-14B, would ensure that the impacts from development associated with implementation of the Specific Plan on 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. The CBC includes requirements to address soil-related hazards. Typical measures to treat hazardous soil conditions involve removal of soil or fill materials, proper fill selection, and compaction. In cases where soil remediation is not feasible, the CBC requires structural reinforcement of foundations to resist the forces of expansive soils.

With adherence to CBC requirements and the City's requirements, potential impacts associated with expansive soils that could occur with implementation of future development under the proposed Specific Plan would be minimized or avoided because specified studies and design considerations would be employed as relevant and feasible at the individual project level. Impacts associated with expansive soils at the program level would be less than significant.

### **Mitigation Measures**

No mitigation measures are required.

**Threshold 5:** Would the Specific Plan have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for waste water disposal?

**IMPACT GEO-4** THE PROPOSED SPECIFIC PLAN WOULD NOT INCLUDE SEPTIC TANKS OR ALTERNATIVE WASTEWATER DISPOSAL SYSTEMS. NO IMPACT WOULD OCCUR.

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Future development in the Plan Area would be served by the East Bay Municipal Utilities District, which is responsible for wastewater collection, treatment and disposal of wastewater from all residential and commercial sources within its sewer service area. The proposed Specific Plan would not include septic tanks or alternative wastewater disposal systems; therefore, there is no potential for adverse effects due to soil incompatibility. No impact would occur.

### Mitigation Measures

No mitigation measures are required.

### c. Cumulative Impacts

All development in Berkeley is subject to geological hazards related to seismic activity, including strong ground shaking. Cumulative development in Berkeley would gradually increase population and therefore gradually increase the number of people exposed to potential geological hazards, including effects associated with seismic events such as ground rupture and strong shaking. However, conformance with the current CBC and City's General Plan policies and the other laws and regulations, would ensure that project-specific impacts associated with geology and soils would be less than significant; thereby reducing the potential cumulative impact associated with any single development project under the Specific Plan to less than significant. Development under the Specific Plan could also result in soil erosion or the loss of topsoil which could result in cumulative impacts when combined with other development in Berkeley and the region that might also cause erosion. However, compliance with existing regulations would reduce potential erosion impacts associated with new development. Potential impacts associated with geology and soils would not be cumulatively considerable, and cumulative impacts related to geologic hazards would be less than significant.

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## 4.5 Greenhouse Gas Emissions

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This section discusses the proposed Specific Plan's potential impacts related to greenhouse gases (GHG) emissions and climate change. The Specific Plan vehicle miles traveled (VMT) and trip distribution rates used to estimate emissions are based on the information included in Section 4.12, *Transportation and Traffic*, of this EIR.

### 4.5.1 Setting

#### a. Climate Change and Greenhouse Gas Emissions

Gases that absorb and re-emit infrared radiation in the atmosphere are called GHGs. The gases seen widely as the principal contributors to human-induced climate change include carbon dioxide (CO<sub>2</sub>), methane (CH<sub>4</sub>), nitrous oxides (N<sub>2</sub>O), fluorinated gases such as hydrofluorocarbons (HFC) and perfluorocarbons (PFC), and sulfur hexafluoride (SF<sub>6</sub>). Water vapor is excluded from the list because it is short-lived in the atmosphere and its atmospheric concentrations are determined largely by natural processes, such as oceanic evaporation.

GHGs are emitted by both natural processes and human activities. CO<sub>2</sub> and CH<sub>4</sub> are emitted in the greatest quantities from human activities. Emissions of CO<sub>2</sub> are largely by-products of fossil fuel combustion, and CH<sub>4</sub> results from off-gassing associated with agricultural practices and landfills.

Man-made GHGs, many of which have greater heat-absorption potential than CO<sub>2</sub>, include fluorinated gases and SF<sub>6</sub> (California Environmental Protection Agency [CalEPA] 2006). 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 (CO<sub>2</sub>) is used to relate the amount of heat absorbed to the amount of the gas emissions, referred to as "carbon dioxide equivalent" (CO<sub>2</sub>e), and is the amount of a GHG emitted multiplied by its GWP. Carbon dioxide has a 100-year GWP of one. By contrast, methane CH<sub>4</sub> has a GWP of 25, meaning its global warming effect is 25 times greater than carbon dioxide on a molecule per molecule basis (International Panel on Climate Change [IPCC] 2007).

#### b. Greenhouse Gas Emissions Inventory

##### Federal Emissions Inventory

Total U.S. GHG emissions were 6,586.7 million metric tons (MMT or gigatonne) CO<sub>2</sub>e in 2015 (U.S. Environmental Protection Agency [USEPA] 2017). Total U.S. emissions have increased by 3.5 percent since 1990; emissions decreased by 2.3 percent from 2014 to 2015. The decrease from 2014 to 2015 was a result of multiple factors, including (1) substitution from coal to natural gas consumption in the electric power sector; (2) warmer winter conditions in 2015 resulting in a decreased demand for heating fuel in the residential and commercial sectors; and (3) a slight decrease in electricity demand. Since 1990, U.S. emissions have increased at an average annual rate of 0.2 percent. In 2015, the industrial and transportation sectors accounted for 29 percent and 27 percent of CO<sub>2</sub>e emissions (with electricity-related emissions distributed), respectively. Meanwhile, the residential and commercial sectors accounted for 16 percent and 17 percent of CO<sub>2</sub>e emissions.

## California Emissions Inventory

Based on the California Air Resources Board (CARB) California Greenhouse Gas Inventory for 2000-2016, California produced 429 MMT CO<sub>2</sub>e in 2016 (CARB 2018). The largest single source of GHG in California is transportation, contributing 41 percent of the State's total GHG emissions. Industrial sources are the second largest source of the state's GHG emissions, contributing 23 percent of the state's GHG emissions. California emissions are due in part to its large size and large population compared to other states. However, the state's mild climate reduces California's per capita fuel use and GHG emissions as compared to other states. CARB has projected statewide unregulated GHG emissions for the year 2020 will be 509.4 MMT CO<sub>2</sub>e. These projections represent the emissions that would be expected to occur in the absence of any GHG reduction actions.

### c. Potential Effects of Climate Change

Globally, climate change has the potential to affect numerous environmental resources through 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. Long-term trends have found that 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 global combined land and ocean temperature data show an increase of about 0.89 degrees Celsius (°C) (0.69°C–1.08°C) over the period 1901–2012 and about 0.72°C (0.49°C–0.89°C) over the period 1951–2012 when described by a linear trend. Several independently analyzed data records of global and regional Land-Surface Air Temperature, obtained from station observations, agree that these have increased, as have sea surface temperatures. In addition to these findings, identifiable signs indicate global warming is taking place; these include but are not limited to substantial ice loss in the Arctic over the past two decades (IPCC 2014).

Potential impacts of climate change in California may include loss in snow pack, sea level rise, more extreme heat days per year, more high ozone days, more large forest fires, and more drought years (CalEPA 2010). A summary follows of some of the potential effects that could be experienced in California as a result of climate change.

### Air Quality

Higher temperatures, conducive to air pollution formation, could worsen air quality in California. Climate change may increase the concentration of ground-level ozone, but the magnitude of the effect, and therefore its indirect effects, are uncertain. If higher temperatures are accompanied by drier conditions, the potential for large wildfires could increase, which, in turn, would further worsen air quality. However, if higher temperatures are accompanied by wetter, rather than drier conditions, the rains would tend to temporarily clear the air of particulate pollution and reduce the incidence of large wildfires, thereby ameliorating the pollution associated with wildfires. Additionally, 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 (California Energy Commission [CEC] 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 water supplies in California. However, the average early spring snowpack in the Sierra Nevada decreased by about 10 percent during the last century, a loss of 1.5 million acre-feet of snowpack storage. During the same period, sea level rose eight inches along California's coast. California's temperature has risen 1 degree Fahrenheit (°F), or 0.55°C, mostly at night and during the winter, with higher elevations experiencing the highest increase. Many southern California cities have experienced their lowest recorded annual precipitation twice in the past decade. In a span of only two years, Los Angeles experienced both its driest and wettest years on record (California Department of Water Resources [DWR] 2008; CCCC 2009).

This uncertainty 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 Sierra snowpack provides the majority of California's water supply by accumulating snow during the state's wet winters and releasing it slowly during the state's dry springs and summers. Based on historical data and modeling, DWR projects the Sierra snowpack will experience a 25 to 40 percent reduction from its historic average by 2050. Climate change is also anticipated to bring warmer storms that result in less snowfall at lower elevations, reducing the total snowpack (DWR 2008).

## Hydrology and Sea Level Rise

As discussed above, climate change could potentially affect: the amount of snowfall, rainfall, and snow pack; the intensity and frequency of storms; flood hydrographs (flash floods, rain or snow events, coincidental high tide and high runoff events); sea level rise and coastal flooding; coastal erosion; and the potential for salt water intrusion. According to *The Impacts of Sea-Level Rise on the California Coast*, prepared by the California Climate Change Center (CCCC) (CCCC 2009), climate change has the potential to induce substantial sea level rise in the coming century. The rising sea level increases the likelihood and risk of flooding. The rate of increase of global mean sea levels over the 2001-2010 decade, as observed by satellites, ocean buoys and land gauges, was approximately 3.2 mm per year, double the observed 20th century trend of 1.6 mm per year (World Meteorological Organization 2013). As a result, sea levels averaged over the last decade were about eight inches higher than those of 1880. Sea levels are rising faster now than in the previous two millennia, and the rise is expected to accelerate, even with robust GHG emission control measures. The IPCC (2013) predicts a mean sea-level rise of 11-38 inches by 2100, more than 50 percent higher than earlier projections of 7-23 inches, when comparing the same emissions scenarios and time periods. A rise in sea levels could result in coastal flooding and erosion and could jeopardize California's water supply due to salt water intrusion. Increased CO<sub>2</sub> emissions can cause oceans to acidify due to the carbonic acid it forms. Increased storm intensity and frequency could affect the ability of flood-control facilities, including levees, to handle storm events.

## Agriculture

California has a \$30 billion annual agricultural industry that produces half of the country's fruits and vegetables. Higher CO<sub>2</sub> levels can stimulate plant production and increase plant water-use efficiency. However, if temperatures rise and drier conditions prevail, water demand could increase; crop-yield could be threatened by a less reliable water supply; and greater air pollution could render plants more susceptible to pest and disease outbreaks. In addition, temperature increases could change the time of year certain crops, such as wine grapes, bloom or ripen, and thereby affect their quality (CCCC 2006).

## Ecosystems and Wildlife

Climate change and the potential resulting changes in weather patterns could have ecological effects on a global and local scale. Increasing concentrations of GHGs are likely to accelerate the rate of climate change. Scientists project that the average global surface temperature could rise by 1.0-4.5°F (0.6-2.5°C) in the next 50 years, and 2.2-10°F (1.4-5.8°C) in the next century, with substantial regional variation. Soil moisture is likely to decline in many regions, and intense rainstorms are likely to become more frequent. Rising temperatures could have four major impacts on plants and animals: (1) timing of ecological events; (2) geographic range; (3) species' composition within communities; and (4) ecosystem processes, such as carbon cycling and storage (Parmesan 2006).

### d. Regulatory Setting

The following regulations address climate change and GHG emissions.

#### Federal Regulations

The U.S. Supreme Court in *Massachusetts et al. v. Environmental Protection Agency et al.* ([2007] 549 U.S. 05-1120) held that the USEPA has the authority to regulate motor-vehicle GHG emissions under the federal Clean Air Act. The USEPA 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 USEPA issued a Final Rule that establishes the GHG permitting thresholds that determine when Clean Air Act permits under the New Source Review Prevention of Significant Deterioration (PSD) and Title V Operating Permit programs are required for new and existing industrial facilities.

In 2014, the U.S. Supreme Court in *Utility Air Regulatory Group v. EPA* (134 S. Ct. 2427 [2014]) held that USEPA may not treat GHGs as an air pollutant for purposes of determining whether a source is a major source required to obtain a PSD or Title V permit. The Court also held that PSD permits that are 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.

#### California Regulations<sup>1</sup>

CARB is responsible for the coordination and oversight of state and local air pollution control programs in California. California has a 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, USEPA granted the waiver of Clean Air Act preemption to California for its greenhouse gas emission standards for motor vehicles beginning with the 2009 model year. Pavley I regulates model years from 2009 to 2016 and Pavley II, which is now referred to as

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<sup>1</sup> For more information on senate and assembly bills, executive orders, and reports discussed above, and to view reports and research referenced above, please refer to [www.climatechange.ca.gov](http://www.climatechange.ca.gov) and [www.arb.ca.gov/cc/cc.htm](http://www.arb.ca.gov/cc/cc.htm).

“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, when the rules will be fully implemented, new automobiles will emit 34 percent fewer GHGs and 75 percent fewer smog-forming emissions from their model year 2016 levels (CARB 2011).

#### *Assembly Bill 32*

California’s major initiative for reducing GHG emissions is outlined in AB 32, the “California Global Warming Solutions Act of 2006,” signed into law in 2006. 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 GHGs to meet the 2020 deadline. 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 limit of 427 MMT CO<sub>2e</sub>. The Scoping Plan was approved by CARB on December 11, 2008, and included measures to address GHG emission reduction strategies related to energy efficiency, water use, and recycling and solid waste, among other measures. 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 approval of the Scoping Plan.

In May 2014, CARB approved the first update to the AB 32 Scoping Plan. The 2013 Scoping Plan update defines CARB’s climate change priorities for the next five years and sets the groundwork to reach post-2020 statewide goals. The update highlights California’s progress toward meeting the “near-term” 2020 GHG emission reduction goals defined in the original Scoping Plan. It also evaluates how to align the State’s longer-term GHG reduction strategies with other State policy priorities, such as for water, waste, natural resources, clean energy and transportation, and land use (CARB 2014). SB 32, the law extending AB 32, was enacted in 2016 and is discussed in further detail on the following page.

#### *Senate Bill 97*

Senate Bill (SB) 97, signed in August 2007, acknowledges that climate change is an environmental issue that requires analysis in CEQA documents. In March 2010, the California Resources Agency (Resources Agency) adopted amendments to the *CEQA Guidelines* for the feasible mitigation of GHG emissions or the effects of GHG emissions. The adopted guidelines give lead agencies the discretion to set quantitative or qualitative thresholds for the assessment and mitigation of GHG and climate change impacts.

#### *Senate Bill 375*

SB 375, signed in August 2008, enhances the state’s ability to reach AB 32 goals by directing CARB to develop regional GHG emission reduction targets to be achieved from passenger vehicles for 2020 and 2035. SB 375 directs each of the state’s 18 major Metropolitan Planning Organizations (MPO) to prepare a “sustainable communities strategy” (SCS) that contains a growth strategy to meet these emission targets for inclusion in the Regional Transportation Plan (RTP). On September 23, 2010, CARB adopted final regional targets for reducing GHG emissions from 2005 levels by 2020 and 2035.

The Association of Bay Area Governments and Metropolitan Transportation Commission were assigned targets of a seven percent reduction in GHGs from transportation sources by 2020 and a 15 percent reduction by 2035. They adopted a RTP/SCS, called Plan Bay Area

that would meet the assigned targets when implemented, by achieving a 10 percent per capita GHG emissions reduction in 2020 and a 16 percent reduction in 2035. Plan Bay Area 2040 was adopted on July 26, 2017 and is a limited and focused update of Plan Bay Area report adopted in 2013. Plan Bay Area 2040 builds upon the growth pattern and strategies developed in the original Plan Bay Area but with updated planning assumptions that incorporate key economic, demographic and financial trends (ABAG and MTC 2017a).

#### *Senate Bill 32*

On September 8, 2016, the governor signed SB 32 into law, extending AB 32 by requiring the state to further reduce GHGs to 40 percent below 1990 levels by 2030 (the other provisions of AB 32 remain unchanged). On December 14, 2017, CARB adopted “California’s 2017 Climate Change Scoping Plan” (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 policies, such as SB 350 and SB 1383 (see below). 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 a statewide per capita goal of six metric tons (MT) CO<sub>2</sub>e by 2030 and two MT CO<sub>2</sub>e by 2050 (CARB 2017). As stated in the 2017 Scoping Plan, these goals may be appropriate for plan-level analyses (regional, sub-regional, county, city levels), but not for specific individual projects because they include all emissions sectors in the state (CARB 2017).

#### *Senate Bill 350*

Adopted on October 7, 2015, SB 350 supports the reduction of GHG emissions from the electricity sector through a number of measures, including requiring electricity providers to achieve a 50 percent renewables portfolio standard by 2030, a cumulative doubling of statewide energy efficiency savings in electricity and natural gas by retail customers by 2030.

#### *Senate Bill 1383*

Adopted in September 2016, SB 1383 requires the CARB to approve and begin implementing a comprehensive strategy to reduce emissions of short-lived climate pollutants. The bill 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

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

#### *Senate Bill 1477*

Enacted in September 2018, SB 1477 allocates \$50 million a year until 2023 from utility cap-and-trade auctions and directs the CPUC to develop two programs: Building Initiative for Low-Emissions Development (BUILD) and Technology and Equipment for Clean Heating

(TECH). These programs incentive low-emissions technologies such as energy storage, solar thermal, and other GHG-reducing technologies.

#### *Executive Order S-3-05*

Executive Order (EO) S-3-05 establishes statewide GHG emissions reduction targets. EO S-3-05 provides that, by 2010, emissions shall be reduced to 2000 levels; by 2020, emissions shall be reduced to 1990 levels; and, by 2050, emissions shall be reduced to 80 percent below 1990 levels.

#### *SB 100*

In September 2018, the governor signed SB 100, the 100 Percent Clean Energy Act of 2018, which commits to 100 percent renewable energy and “zero-carbon” energy resources in California by 2045. Under the law, 60 percent of power purchased by California utilities must come from renewable sources by 2030. The additional 40 percent must come from sources that do not emit carbon.

#### *Executive Order B-55-18*

At the same time Governor Jerry Brown signed SB 100 into law, he also issued Executive Order (EO) B-55-18, which establishes a new statewide policy of achieving net zero carbon emissions as soon as possible and no later than 2045 and to achieve and maintain net negative emissions thereafter. B-55-18 will be addressed in the next CARB scoping plan.

### **Regional Regulations**

The Bay Area Air Quality Management District (BAAQMD) is responsible for enforcing standards and regulating stationary sources in its jurisdiction. BAAQMD regulates GHG emissions through specific rules, regulations, and project and plan level emissions thresholds for GHGs to ensure that the Bay Area contributes to its fair share of emissions reductions. In 2013, BAAQMD adopted a resolution that builds on state and regional climate protection efforts by:

- Setting a goal for the Bay Area region to reduce GHG emissions by 2050 to 80 percent below 1990 levels
- Developing a Regional Climate Protection Strategy to make progress towards the 2050 goal, using BAAQMD’s Clean Air Plan to initiate the process
- Developing a 10-point work program to guide the BAAQMD’s climate protection activities in the near-term

The BAAQMD is developing the Regional Climate Protection Strategy, but has outlined the 10-point work program, which includes policy approaches, assistance to local governments, and technical programs that will help the region make progress toward the 2050 GHG emissions goal.

### **City of Berkeley**

The City of Berkeley adopted a Climate Action Plan in 2009 with the goal of reducing community GHG emissions by 80 percent below 2000 levels by 2050. The core recommendation strategies and actions of the CAP center around the following topics:

1. Sustainable Transportation and Land Use

2. Building Energy Use
3. Waste Reduction and Recycling
4. Community Outreach and Empowerment
5. Preparing for Climate Change Impacts

While the Climate Action Plan is not considered a “qualified greenhouse gas reduction plan” it is actively used by the City for GHG reductions. In a recent 2018 Climate Action Plan Update, the City outlined several climate commitments:

- 80 percent GHG reductions by 2050 (from 2000)
- 100 percent renewable electricity by 2035
- Net-Zero Carbon Emissions by 2050
- Become a Fossil Fuel Free City

Furthermore, the City’s General Plan Environmental Management Element contains the following policies specific to GHG emissions:

**Policy EM-5 “Green” Buildings.** Promote and encourage compliance with “green” building standards

**Policy EM-8 Building Reuse and Construction Waste.** Encourage rehabilitation and reuse of buildings whenever appropriate and feasible in order to reduce waste, conserve resources and energy, and reduce construction costs.

**Policy EM-18 Regional Air Quality Action.** Continue working with the Bay Area Air Quality Management District and other regional agencies to:

1. Improve air quality through pollution prevention methods.
2. Ensure enforcement of air emission standards.
3. Reduce local and regional traffic (the single largest source of air pollution in the city) and promote public transit.
4. Promote regional pollution prevention plans for business and industry.
5. Promote strategies to reduce particulate pollution from residential fireplaces and wood-burning stoves.
6. Locate parking appropriately and provide signage to reduce unnecessary “circling” and searching for parking.

#### 4.5.2 Impact Analysis

##### a. Methodology and Significance Thresholds

###### Significance Thresholds for GHG Emissions

Based on Appendix G of the *CEQA Guidelines*, impacts related to GHG emissions from the proposed Specific Plan would be significant if it would:

1. Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment
2. Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases

The majority of individual projects do not generate sufficient GHG emissions to directly influence climate change. However, physical changes caused by a project can contribute incrementally to cumulative effects that are significant, 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, CEQA analyses of GHG impacts for projects can tier from a "qualified" GHG reduction plan. This 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 its 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 impact on the environment (2016). The CEQA Guidelines define the requirements necessary to qualify as a comprehensive plan for the reduction of GHG emissions (CEQA Guidelines, Section 15183.5):

1. Quantify existing and projected GHG emissions within the plan area
2. Establish a reduction target based on substantial evidence, where GHG emissions are not cumulatively considerable)
3. Identify and analyze sector specific GHG emissions from Plan activities
4. Specify policies and actions (measures) that local jurisdictions will enact and implement over time to achieve the specified reduction target
5. Establish a tool to monitor progress and amend if necessary
6. Adopt in a public process following environmental review

A key aspect of a "qualified" GHG reduction plan's ability to provide "substantial evidence" is that the identified reduction target establishes a threshold at which GHG emissions would not be cumulatively considerable. The AEP Beyond Newhall white paper identifies this criterion as being a local target that aligns with statewide legislative targets. The City of Berkeley adopted a Climate Action Plan (CAP) that sets a 2020 year target to achieve a 33 percent absolute reduction below 2000 community-wide emissions and identifies actions to achieve the target with the ultimate goal of 80 percent emissions reductions by 2050 (City of Berkeley 2009). The City of Berkeley's CAP is not a qualified GHG reduction strategy pursuant to the BAAQMD's *CEQA Air Quality Guidelines* because the CAP does not establish a level below which the contribution to GHG emissions from activities covered by the plan would not be cumulatively considerable (BAAQMD 2017). Therefore, the CAP does not qualify as a GHG reduction plan for projects with horizon years beyond 2020 and consistency with the CAP cannot be used as the basis of the CEQA analysis for the proposed Specific Plan.

Since Berkeley does not have a "qualified" GHG reduction plan that achieves the goals of SB 32, this EIR evaluates the Specific Plan for consistency with the 2017 Scoping Plan. According to the 2017 Scoping Plan, "absent conformity with an adequate geographically-specific GHG reduction plan...CARB recommends that projects incorporate design features and GHG reduction measures, to the degree feasible, to minimize GHG emissions." Furthermore, the 2017 Scoping Plan states that "achieving no net additional increase in GHG emissions, resulting in no contribution to GHG impacts, is an appropriate overall objective for new development" but continues "Achieving net zero increases in GHG

emissions, resulting in no contribution to GHG impacts, may not be feasible or appropriate for every project, however, and the inability of a project to mitigate its GHG emissions to net zero does not imply the project results in a substantial contribution to the cumulatively significant environmental impact of climate change under CEQA.” Demonstrating consistency with the 2017 Scoping Plan can show that the proposed Specific Plan is consistent with the most recent codified GHG reduction targets established by SB32.

Further, because the Specific Plan’s operational year (horizon year of 2040) is later than the SB 32 target year of 2030, this EIR also evaluates the Specific Plan’s consistency with EO B-55-18, which established a long-term goal of zero net carbon by 2045. Therefore, to determine if the Specific Plan may generate GHG emissions that would contribute to a significant impact on the environment (threshold 1) or conflict with adopted GHG reduction plan (threshold 2), the proposed Specific Plan will be evaluated for consistency with the 2017 Scoping Plan goals as well as with the Plan’s ability to demonstrate progress towards achieving the long-term goals set forth in EO B-55-18.

## b. Project Impacts and Mitigation Measures

<b>Threshold 1:</b>	Would the Specific Plan generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?
<b>Threshold 2:</b>	Would the Specific Plan conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases?

**IMPACT GHG –1** A PROJECT THAT IS CONSISTENT WITH A QUALIFIED GHG REDUCTION PLAN AS DESCRIBED IN THE CEQA GUIDELINES SECTION 15183.5 IS CONSIDERED TO HAVE A LESS THAN SIGNIFICANT IMPACT. THE PROPOSED SPECIFIC PLAN WOULD BE CONSISTENT WITH THE 2017 SCOPING PLAN WITH MITIGATION. THEREFORE, THIS IMPACT WOULD BE SIGNIFICANT BUT MITIGABLE TO A LESS THAN SIGNIFICANT LEVEL.

Under the consistency analysis methodology described in Section 4.5.2(a) above, GHG emissions associated with development of future projects constructed under the proposed Specific Plan would be considered cumulatively considerable and would therefore result in a significant impact if the Specific Plan was found to be inconsistent with the 2017 Scoping Plan or if it would not demonstrate progress towards achieving the goals set forth in EO B-55-18.

The 2017 Scoping Plan provides GHG reduction goals that can be incorporated at both the plan and project level. The 2017 Scoping Plan states that projects should aim to incorporate as many GHG reduction features as is feasible and states that “achieving no net additional increase in GHG emissions, resulting in no contribution to GHG impacts, is an appropriate overall objective for new development”.

Table 4.5-1 lists GHG reduction features that could feasibly be included at the plan level and project level and provides discussions of the Specific Plan’s consistency with each goal and supporting policies, prior to implementation of mitigation. The Specific Plan does not have to be consistent with each and every policy to be generally supportive of the overall goal.

**Table 4.5-1 Specific Plan Consistency with the 2017 Scoping Plan (Prior to Mitigation)**

Goals, Policies, and Actions	Project Consistency
Plan Level Policies	
Transportation & Land Use Actions	
<p><b>1. Goal: Decrease VMT</b></p> <ul style="list-style-type: none"> <li>a. Adopt general plan policies and diagram designations and zone map and standards that are consistent with the Sustainable Communities Strategy</li> <li>b. In appropriate locations, adopt: 1) as-of-right zoning, and 2) design standards and guidelines, to enable mixed use, walkable, compact, infill development that includes a range of housing types and affordability levels</li> <li>c. Adopt an urban growth boundary</li> <li>d. Streamline permitting and environmental review and reduce fees for construction of secondary units to promote infill in targeted areas</li> <li>e. Adopt a jurisdiction-wide transportation demand management plan which sets numeric targets or caps for the proportion of non-single occupancy vehicle (SOV) trips associated with new development, and/or an overall VMT target</li> <li>f. Require employer-based trip reduction programs and provide funding to support them if feasible</li> </ul>	<p><b>Consistent</b> - As shown in Table 4.12-12 in Section 4.12, <i>Transportation and Traffic</i>, of this EIR, the proposed Specific Plan would reduce per capita VMT in the Plan Area and in Berkeley compared to future (2040) conditions without implementation of the proposed Specific Plan. Further, the Specific Plan would support mixed-use, transit-oriented development as well as allow for improvements to alternative transportation infrastructure. The vision of the Specific Plan as it relates to housing is to add new affordable and market rate housing for a range of income levels to the Plan Area. The vision of the Specific Plan as it relates to transportation is to “provide safe, equitable transportation options that meet the mobility needs of all residents, regardless of age, means, and abilities, and that further the attainment of the City’s greenhouse gas emission reduction goals.”</p>
<p><b>2. Goal: Support Electric Vehicle (EV), Hydrogen and Biogas Vehicle Use</b></p> <ul style="list-style-type: none"> <li>a. Streamline local permitting and siting for hydrogen fueling and electric vehicle (EV) charging infrastructure</li> <li>b. Adopt and implement EV and hydrogen readiness plans</li> <li>c. Adopt green building standards that exceed minimum State building standards for EV-capable parking spaces (e.g., by requiring installation of EV chargers and/or a larger number of EV-capable parking spaces) or match local climate action plan goals</li> <li>d. Support biogas use in the transportation sector</li> <li>e. Adopt a Transportation Management Ordinance to require carpool, electric vehicle, and/or vanpool preferential parking spaces close to the major employment areas</li> <li>f. Promote use of alternative fuel or high-fuel efficient vehicles by public agencies and private businesses</li> </ul>	<p><b>Not Consistent</b> – While future development under the Specific Plan would be required to comply with applicable state laws and local regulations supporting EV or other alternative fuel infrastructure, the proposed Specific Plan does not include additional measures or require EV infrastructure.</p>

Goals, Policies, and Actions	Project Consistency
<p><b>3. Goal: Manage parking more effectively to minimize driving demand and to encourage and support alternatives to driving</b></p> <p>a. Adopt a Transportation Management Ordinance to require carpool, electric vehicle, and/or vanpool preferential parking spaces close to the major employment areas</p>	<p><b>Consistent</b> – As described in Specific Plan Chapter 3, Land Use, the Specific Plan would require that future development in the Ashby BART subarea include Transportation Demand Management (TDM) strategies to reduce parking demand and single-use automobile trips (Section 3.8, Ashby BART, Objective 6). Further, as described in Specific Plan Chapter 6, Transportation, the Specific Plan includes strategies to reduce demand for additional parking and allows future development projects to reduce the amount of parking provided if TDM strategies are implemented (Section 6.8, Parking).</p>
<p><b>4. Goal: Accelerate Implementation of Bicycle &amp; Pedestrian Plans</b></p> <p>a. Adopt and implement a bicycle and pedestrian master plan which includes targets for trips taken by bicycle and on foot</p> <p>b. Adopt complete streets policies and active design guidelines</p> <p>c. Provide incentives for certifying development plans and projects using LEED for Neighborhood Development or similar third-party certification system</p> <p>d. Promote a Safe Routes to School Program that encourages youth to walk or ride bicycles to schools</p> <p>e. Promote Safe Routes to transit programs for pedestrians and bicyclists</p>	<p><b>Consistent</b> – As described in Section 2, <i>Project Description</i>, of this EIR, the Transportation chapter of the Specific Plan proposes interim and long-term improvements to the transportation network. Consistent with the City’s “Complete Streets” policy, the Specific Plan focuses on providing safe and convenient travel for all modes. The Specific Plan would enhance the transportation network for pedestrians, cyclists, and transit riders, while continuing to accommodate automobile traffic in the Plan Area. The Specific Plan would implement multiple improvements to bicycle and pedestrian access to the Adeline Street Corridor.</p>
<p><b>5. Goal: Make public transit more frequent, reliable, integrated and accessible</b></p> <p>a. Partner with local/regional transit agencies to enhance transit ridership</p> <p>b. Expand transit and rail services and clean-fueled transit vehicles</p>	<p><b>N/A</b> – This policy is not applicable to the Specific Plan since the City of Berkeley does not have control over public transit service provided by the regional bus service provider, AC Transit, or the regional rail service provider, BART. However, the Plan Area includes the Ashby BART station which would allow for additional access to public transportation and is supported by multiple AC Transit routes in the area.</p>
<p><b>6. Goal: Enhance and expand car sharing and ridesharing programs</b></p> <p>a. Require local specific plans for rideshare-designated parking spaces, new bus stops, employment centers, and commercial areas</p> <p>b. Promote ridesharing and last-mile connections</p>	<p><b>Consistent</b> – As described in Specific Plan Chapter 3, Land Use, the Specific Plan would require that future development in the Ashby BART subarea include Transportation Demand Management (TDM) strategies to reduce parking demand and single-use automobile trips (Section 3.8, Ashby BART, Objective 6).</p>
<p><b>7. Goal: Support municipal EV fleet adoption</b></p> <p>a. Require local public agencies to contract with fleets that set targets and policies for lowering the average GHG emissions of their fleet vehicles</p> <p>b. Require clean vehicles be purchased as part of municipal vehicle fleet procurement</p> <p>c. Adopt regional joint-purchase agreements to facilitate local fleets to purchase EVs, hybrids, telematics, and other technology that can reduce GHG emissions</p>	<p><b>N/A</b> – Municipal purchases are outside the scope of the Specific Plan.</p>

Goals, Policies, and Actions	Project Consistency
<p><b>8. Goal: Implement transportation demand management to reduce congestion</b></p> <ul style="list-style-type: none"> <li>a. Promote intelligent traffic management systems to improve traffic flow</li> </ul>	<p><b>Consistent</b> – The Specific Plan would implement several improvements to the Adeline Street Corridor to both traffic flow and pedestrian/bicycle safety such as a new cycletrack as well as sidewalk improvements. Further, as described above, the Specific Plan would require that future development in the Ashby BART subarea include TDM strategies to reduce parking demand and single-use automobile trips.</p>
<p><b>9. Goal: Support electrification of buildings and equipment</b></p> <ul style="list-style-type: none"> <li>a. Create incentives for electric landscaping power tools and off-road equipment</li> </ul>	<p><b>N/A</b> – Creating incentives for electric landscaping power tools and off-road equipment is outside of the scope and control of the proposed Specific Plan. However, as those programs are put in place, they would be used within the Plan Area.</p>
<p><b>10. Goal: Adopt behavioral change programs</b></p> <ul style="list-style-type: none"> <li>a. Promote smart driving strategies through public education and outreach</li> <li>b. Promote a Safe Routes to School Program that encourages youth to walk or ride bicycles to schools</li> <li>c. Promote Safe Routes to transit programs for pedestrians and bicyclists</li> <li>d. Restrict idling for all vehicles, especially in sensitive areas such as near schools</li> </ul>	<p><b>N/A</b> – It is outside the scope of the Specific Plan to create behavioral change programs. However, the Specific Plan does support several of these initiatives by improving bicycling and pedestrian safety and safer routes to transit.</p>
<b>Energy Actions</b>	
<p><b>11. Goal: Facilitate growth of renewable energy</b></p> <ul style="list-style-type: none"> <li>a. Streamline permitting and environmental review and reduce fees for small-scale renewable energy systems</li> <li>b. Adopt a community solar program to help realize economies of scale and help residents without appropriate rooftop space to participate in clean energy generation</li> <li>c. Incorporate renewable energy and energy efficiency into public facilities’ capital improvements</li> <li>d. Permit renewable energy generation facilities as of right in zones with compatible uses</li> <li>e. Require new residential and commercial construction to install solar or be solar ready</li> <li>f. Encourage the development of brightfields – brownfields that are used to develop solar energy – through tax incentives, streamlining, and use of locally-owned land</li> <li>g. Require on-site renewable energy generation by large-scale residential and commercial projects</li> </ul>	<p><b>Not Consistent</b> – The proposed Specific Plan would not mandate renewable energy beyond Title 24. However, a vast majority, if not all, of the projected developed under the Specific Plan would begin after 2020. This means that each project would need to comply with the next version of Title 24, which requires solar power on residential buildings of three or fewer stories.</p>
<p><b>12. Goal: Facilitate energy efficiency in new and existing buildings</b></p> <ul style="list-style-type: none"> <li>a. Promote property-assessed clean energy financing districts or other financing mechanisms to fund permanent energy-efficiency, water-efficiency, and renewable energy improvements in the residential and commercial sectors</li> <li>b. Adopt local ordinances to require energy-efficiency upgrades for existing buildings at the time of a major</li> </ul>	<p><b>Not Consistent</b> – For new buildings in the Plan Area, the proposed Specific Plan would not increase energy efficiency or GHG reductions beyond those reductions required by applicable regulations. Energy efficiency related to existing buildings is out of the scope of the proposed Specific Plan.</p>

Goals, Policies, and Actions	Project Consistency
<ul style="list-style-type: none"> <li>remodel or change of ownership</li> <li>c. Reduce permit fees and streamline permitting requirements for energy-efficiency and renewable energy-related building renovations</li> <li>d. Implement building energy audit and retrofit programs and residential solar programs</li> <li>e. Adopt residential and commercial energy conservation, renewable energy, and/or zero net energy ordinances (consider requirements for audits or upgrades at major renovation or time of sale)</li> <li>f. Incentivize energy-efficiency upgrades to existing buildings, where appropriate, upon issuing a permit for substantial modification</li> <li>g. Create incentive programs to promote building energy-efficiency projects</li> </ul>	
<p><b>13. Goal: Facilitate development of renewable energy storage</b></p> <ul style="list-style-type: none"> <li>a. Implement large-scale energy storage in commercial and industrial buildings to control peak loads</li> </ul>	<p><b>N/A</b> – This is outside the scope of the proposed Specific Plan.</p>
<p><b>14. Goal: Promote renewable energy sourcing on municipal buildings and property</b></p> <ul style="list-style-type: none"> <li>a. Pursue renewable energy development on municipal buildings or purchase renewable energy to power municipal operations</li> </ul>	<p><b>N/A</b> – This is outside the scope of the proposed Specific Plan.</p>
<p><b>15. Goal: Utilize energy-efficient equipment and systems on municipal buildings and property</b></p> <ul style="list-style-type: none"> <li>a. Replace public lighting with energy-efficient lighting</li> <li>b. Incorporate renewable energy and energy efficiency into public facilities’ capital improvements</li> </ul>	<p><b>N/A</b> – This is outside the scope of the proposed Specific Plan.</p>
<b>Water Actions</b>	
<p><b>16. Goal: Facilitate water efficiency</b></p> <ul style="list-style-type: none"> <li>a. Adopt water-efficient landscaping ordinances, including the use of compost and mulch, to reduce water use and encourage use of greywater for landscaping, when available</li> <li>b. Develop a plan requiring water recycling, and greywater and rain water reuse and provide funding for incentives and other program delivery mechanisms if feasible</li> <li>c. Develop a residential water efficiency auditing program</li> <li>d. Create an incentive program to promote efficient water use projects</li> <li>e. Eliminate Homeowner Association requirements for lawns and landscaping</li> </ul>	<p><b>Consistent</b> – As described in Section 4.13, <i>Utilities and Service System</i>, of this EIR, development in the Plan Area would be subject to the City’s Bay-Friendly Landscape Ordinance and other state and local requirements for water-efficient landscapes. Further, the proposed Specific plan includes a policy to promote water-efficient landscaping for public spaces in the Plan Area. Although the Plan Area is not currently a candidate for recycled water, future recycled water pipeline expansion toward the City could potentially serve a portion of the Plan Area.</p>
<p><b>17. Goal: Reduce emissions from water supply and treatment</b></p> <ul style="list-style-type: none"> <li>a. Develop a plan to quantify and reduce GHG emissions at publicly operated treatment works (POTWs)</li> </ul>	<p><b>N/A</b> – This is outside the scope of the proposed Specific Plan.</p>
<p><b>18. Goal: Facilitate groundwater recharge and maintained supply</b></p> <ul style="list-style-type: none"> <li>a. Work with local water agencies to evaluate the impact of proposed new developments and land use plans on groundwater and long-term water supply</li> </ul>	<p><b>N/A</b> – This is outside the scope of the proposed Specific Plan.</p>

Goals, Policies, and Actions	Project Consistency
<b>Waste Management Actions</b>	
<p><b>19. Goal: Reduce waste disposal to landfills</b></p> <ul style="list-style-type: none"> <li>a. Adopt ordinances to meet zero waste goals by 2020</li> <li>b. Adopt a construction &amp; demolition waste recycling ordinance</li> <li>c. Adopt an ordinance for zero waste from construction and demolition waste</li> <li>d. Adopt green building standards that include targets to exceed minimum State building standards for new construction, including requiring new construction to include bin space for organics recycling</li> <li>e. Require zero waste public events</li> <li>f. Create an effective solid waste management plan to reduce source generation and to divert waste from landfills to achieve emission reductions</li> </ul>	<p><b>Consistent</b> – The Plan Area residents and tenants would be able to take advantage of composting and recycling services through the City of Berkeley Zero Waste Programs and Services.</p>
<p><b>20. Goal: Reduce organic waste disposal to landfills and promote organic waste reuse</b></p> <ul style="list-style-type: none"> <li>a. Prohibit disposal of organic materials at landfills and/or prohibit the jurisdictions’ hauler(s) and self-haulers from taking organic material to landfills</li> <li>b. Adopt green building standards that include targets to exceed minimum State building standards for new construction, including requiring new construction to include bin space for organics recycling</li> <li>c. Require that collected organic materials be used in edible food recovery programs or as feedstock for composting and anaerobic digestion; include assessment of 15 years organics recycling capacity needs in the General Plan; and provide appropriate zoning in compatible areas for large and community-scale composting and digestion operations</li> <li>d. Require implementation of residential and commercial recycling, organics collection, and edible food recovery programs</li> <li>e. Require generators of edible food to have contracts/agreements with food rescue organizations and prohibit edible food from being disposed or destroyed</li> <li>f. Implement a green-waste and/or food waste collection program</li> <li>g. Require that landfills incorporate the financial impact of organics disposal reductions pursuant to SB 1383 into their Financial Assurance plans</li> <li>h. Ensure compost materials meet standards to be used in rural lands application for carbon sequestration</li> <li>i. Expand anaerobic digestion capacity at existing wastewater treatment plants to allow them to accept food waste</li> <li>j. Require food waste reduction at commercial facilities such as restaurants, hotels, hospitals, etc., including food donations</li> <li>k. Require large commercial landscapers to use compost-based nutrients and soil amendments on landscaping and plants instead of artificial fertilizers and soil amendments</li> </ul>	<p><b>Consistent</b> – The proposed Specific Plan would not inhibit composting and recycling services provided to Berkeley residents by the City of Berkeley Zero Waste Programs and Services. Berkeley Municipal Code Chapter 19.37 (Berkeley Green Code) requires that 100% of asphalt, concrete, excavated soil and land-clearing debris and a minimum of 65% of other nonhazardous construction and demolition waste must be diverted from disposal at subject building projects by recycling, reuse, or salvage.</p>

Goals, Policies, and Actions	Project Consistency
<p><b>21. Goal: Reduce emissions from waste operations</b></p> <ul style="list-style-type: none"> <li>a. Adopt ordinances requiring hauling routes and fuels that minimize vehicle emissions compared to current practices (e.g., through use of renewable fuels, route optimization plan, etc.)</li> </ul>	<p><b>N/A</b> – This is outside the scope of the proposed Specific Plan.</p>
<p><b>Short-Lived Climate Pollutant Actions</b></p>	
<p><b>22. Goal: Reduce potential black carbon emissions from biomass</b></p> <ul style="list-style-type: none"> <li>a. Promote alternative disposal options for woody biomass wastes and prohibit open pile burning</li> <li>b. Support hazardous fuel reduction, defensible space clearing and forest fuel reduction in rural forested areas with high tree mortality and unnaturally high fuel loads to reduce the size and severity of catastrophic wildfires which reduces the release non-anthropogenic black carbon and methane</li> </ul>	<p><b>N/A</b> – This is outside the scope of the proposed Specific Plan.</p>
<p><b>23. Goal: Reduce refrigerant usage and utilize best management practices</b></p> <ul style="list-style-type: none"> <li>a. Require that air conditioning and refrigeration units in new construction (and at major renovation) rely on refrigerants with low global warming potential (e.g., they use CO2 or ammonia instead of hydrofluorocarbons)</li> <li>b. Adopt use of low global warming potential (GWP) alternative refrigerants</li> <li>c. Work with local utility and waste management agencies to adopt a curbside program for old refrigerators, air-conditioning units, and automobiles to ensure proper disposal of refrigerants</li> </ul>	<p><b>Consistent</b> - The California Cooling Act, which took effect on January 1, 2019, prohibits HFC refrigerants with high global warming potential for supermarket systems, condensing units, and self-contained unit. Manufacturers cannot sell equipment using prohibited refrigerants that are manufactured after January 1, 2019. Therefore, air conditioning and refrigeration units in new construction (and major renovation) in the Plan Area would not utilize refrigerants with high global warming potential. In addition, as alternative refrigerants are developed over time, they may be used in future development.</p>
<p><b>24. Goal: Facilitate reduction of residential wood smoke</b></p> <ul style="list-style-type: none"> <li>a. Adopt programs, ordinances, or regulations to reduce wood smoke from residents, commercial, and recreational activities</li> <li>b. Require alternatives to wood heating such as heat pumps or gas heating devices in new developments, in appropriate climate zones, where infrastructure is available</li> <li>c. Provide incentives to reduce wood smoke by changing out uncertified wood heating devices to gas, electric, or pellet devices</li> </ul>	<p><b>Consistent</b> – In accordance with BAAQMD Regulation 6, Rule 3, Wood-Burning Devices, new building construction may no longer include the installation of wood-burning devices, including fireplaces, EPA certified wood stoves or inserts, or pellet-fueled devices. Future development under the Specific Plan would be required to comply with BAAQMD rules and regulations and would not be allowed to include wood-burning devices.</p>
<p><b>Green Building Actions</b></p>	
<p><b>25. Goal: Facilitate building energy efficiency, electrification, and energy storage technology</b></p> <ul style="list-style-type: none"> <li>a. When determined to be feasible and achievable within the local jurisdiction, adopt “Tier 2” residential and commercial green building standards of the 2016 California Green Building Standards (CALGreen Code), or a third party green building certification such as the LEED or GreenPoint rating systems</li> <li>b. Incentivize or require electrification of residential heating for new construction, and provide incentives to convert existing residences from natural gas to</li> </ul>	<p><b>Not Consistent</b> – The proposed Specific Plan would not require electrification of new construction or require any advanced green building techniques beyond the applicable regulations.</p>

Goals, Policies, and Actions	Project Consistency
<p>electricity</p> <p>c. Adopt Guidelines for incentivizing new buildings to maximize energy conservation designs to promote passive solar energy generation, natural ventilation, effective use of daylight, or other on-site electricity generation</p> <p>d. Encourage the use of renewable energy and storage</p>	
<p><b>26. Goal: Minimize waste and emissions from building construction and materials</b></p> <p>a. Incentivize or require implementation of CALGreen Code building code requirements to divert and recycle construction and demolition waste, and use locally-sourced building materials and recycled content building materials, including mulch/compost, to the extent possible</p>	<p><b>Consistent</b> – Berkeley Municipal Code Chapter 19.37 (Berkeley Green Code) requires that 100% of asphalt, concrete, excavated soil and land-clearing debris and a minimum of 65% of other nonhazardous construction and demolition waste must be diverted from disposal at subject building projects by recycling, reuse, or salvage. Development under the Specific Plan would be subject to these requirements and therefore new development would minimize waste from building construction and materials to the extent feasible.</p>
<p><b>27. Goal: Implement planning that reduces emissions from on-going operation of new developments</b></p> <p>a. Link green building with transportation planning to encourage lowest possible transportation impacts</p>	<p><b>Consistent</b> – The Specific Plan would allow for denser transit-oriented development around Ashby BART Station.</p>
<p><b>28. Goal: Facilitate urban heat reduction in building design and planning</b></p> <p>a. Develop strategies and goals to reduce urban heat islands through cool roofs, urban forestry (shade trees) and cool non-roof surfaces, including covered parking areas with PV systems to provide shading</p> <p>b. Require cool roofs and/or green roofs on new construction, for all buildings or a subset (commercial, multi-family, etc.) of building types</p> <p>c. Require cool paving and/or light reflective permeable surfaces in sidewalks, patios, driveways, parking lots, or other paved areas</p>	<p><b>Not Consistent</b> – The proposed Specific Plan would not require additional cool roof designs beyond the requirements set forth by the building energy code (Title 24).</p>
<b>Project Level Measures</b>	
<b>Construction Actions</b>	
<p><b>29. Goal: Minimize waste and emissions from construction and materials</b></p> <p>a. Divert and recycle construction and demolition waste, and use locally-sourced building materials with a high recycled material content to the greatest extent feasible</p> <p>b. Utilize existing grid power for electric energy rather than operating temporary gasoline/diesel powered generators</p>	<p><b>Consistent</b> - Berkeley Municipal Code Chapter 19.37 (Berkeley Green Code) requires that 100% of asphalt, concrete, excavated soil and land-clearing debris and a minimum of 65% of other nonhazardous construction and demolition waste must be diverted from disposal at subject building projects by recycling, reuse, or salvage.</p>
<p><b>30. Goal: Promote use of lower-emission construction equipment and vehicles</b></p> <p>a. Enforce idling time restrictions for construction vehicles</p> <p>b. Require construction vehicles to operate with the highest tier engines commercially available</p> <p>c. Increase use of electric and renewable fuel powered</p>	<p><b>Consistent</b> – As required by Mitigation Measure AQ-2, in Section 4.1, <i>Air Quality</i>, development under the proposed Specific Plan would be required to implement the BAAQMD Basic Construction Mitigation Measures which includes limiting idling times and ensuring all equipment is properly</p>

Goals, Policies, and Actions	Project Consistency
<p>construction equipment and require renewable diesel fuel where commercially available</p> <p>d. Require diesel equipment fleets to be lower emitting than any current emission standard</p>	<p>maintained and tuned.</p>
<p><b>31. Goal: Promote carbon sequestration and mitigate on-site sequestration impacts</b></p> <p>a. Minimize tree removal, and mitigate indirect GHG emissions increases that occur due to vegetation removal, loss of sequestration, and soil disturbance</p>	<p><b>Consistent</b> – The City of Berkeley has an Urban Forestry Unit which plants, maintains, and manages trees within the City. As part of their duties, the Urban Forestry Unit would continue to manage trees in the Plan Area promoting tree planting and maintenance and working toward higher carbon sequestration.</p>
<p><b>Operational Actions</b></p>	
<p><b>32. Goal: Support EV, Hydrogen and Biogas Vehicle Use</b></p> <p>a. Require on-site EV charging capabilities for parking spaces serving the project to meet jurisdiction-wide EV proliferation goals</p> <p>b. Require the design of the electric boxes in new residential unit garages to promote electric vehicle usage</p> <p>c. Require electric vehicle charging station (conductive/ inductive) and signage for non-residential developments</p>	<p><b>Not Consistent</b> - The proposed Specific Plan would not require additional electric vehicle or other alternative vehicle infrastructure beyond what is required under current legislation.</p>
<p><b>33. Goal: Decrease VMT</b></p> <p>a. Comply with lead agency’s standards for mitigating transportation impacts under SB 743</p> <p>b. Develop a rideshare program targeting commuters to major employment centers</p> <p>c. Require a transportation management plan for specific plans which establishes a numeric target for non-SOV travel and overall VMT</p> <p>d. Require the design of bus stops/shelters/express lanes in new developments to promote the usage of mass-transit</p>	<p><b>Consistent</b> – As described under Goal 1, the proposed Specific Plan would decrease VMT through supporting transit-oriented development as well as improving pedestrian and bicycle safety and infrastructure.</p>
<p><b>34. Goal: Manage parking more effectively to minimize driving demand and to encourage and support alternatives to driving</b></p> <p>a. Allow for new construction to install fewer on-site parking spaces than required by local municipal building code, if appropriate</p> <p>b. Dedicate on-site parking for shared vehicles</p> <p>c. Require preferential parking spaces for park and ride to incentivize carpooling, vanpooling, commuter bus, electric vehicles, and rail service use</p>	<p><b>Consistent</b> - The site development standards included in the Specific Plan (Chapter 3, Section 3.3) would have no minimum parking requirements for commercial developments and for residential developments in the Ashby BART area. Residential developments in the other areas would have a minimum parking requirement of one space per three units. Developments that provide more affordable housing than required and/or a robust TDM Plan would be able to further reduce their parking supply.</p>
<p><b>35. Goal: Accelerate Implementation of Bicycle &amp; Pedestrian Plans</b></p> <p>a. Provide adequate, safe, convenient, and secure on-site bicycle parking and storage in multi-family residential projects and in non-residential project</p> <p>b. Provide on- and off-site safety improvements for bike, pedestrian, and transit connections, and/or implement relevant improvements identified in an applicable</p>	<p><b>Consistent</b> – The proposed Specific Plan would support safe and convenient bicycle and pedestrian movement by improving infrastructure and providing bicycle parking requirements.</p>

Goals, Policies, and Actions	Project Consistency
<p>bicycle and/or pedestrian master plan</p> <p>c. Require the design of bike lanes to connect to the regional bicycle network</p>	
<p><b>36. Goal: Support electrification of buildings and equipment</b></p> <p>a. Require the installation of electrical outlets on the exterior walls of both the front and back of residences to promote the use of electric landscape maintenance equipment</p> <p>b. Provide electric outlets to promote the use of electric landscape maintenance equipment to the extent feasible on parks and public/quasi-public lands</p>	<p><b>Not Consistent</b> – The proposed Specific Plan would not require electrification of buildings and equipment.</p>
<p><b>37. Goal: Facilitate energy efficiency in new and existing buildings</b></p> <p>a. Require cool roofs and “cool parking” that promotes cool surface treatment for new parking facilities as well as existing surface lots undergoing resurfacing</p> <p>b. Require new construction, including municipal building construction, to achieve third-party green building certifications, such as the GreenPoint Rated program or the LEED rating system</p> <p>c. Achieve Zero Net Energy performance targets prior to dates required by CALGreen</p> <p>d. Require the installation of energy conserving appliances such as on-demand tank-less water heaters and whole-house fans</p> <p>e. Require each residential and commercial building equip buildings with energy efficient AC units and heating systems with programmable thermostats/timers</p> <p>f. Require large-scale residential developments and commercial buildings to report energy use, and set specific targets for per-capita energy use</p>	<p><b>Not Consistent</b> – The proposed Specific Plan would not require energy efficiency beyond the required regulations.</p>
<p><b>38. Goal: Encourage off-site carbon offset projects and purchasing of carbon credits</b></p> <p>a. Require the development project to propose an off-site mitigation project which should generate carbon credits equivalent to the anticipated GHG emission reductions. This would be implemented via an approved protocol for carbon credits from California Air Pollution Control Officers Association (CAPCOA), the California Air Resources Board, or other similar entities determined acceptable by the local air district</p> <p>b. Require the project to purchase carbon credits from the CAPCOA GHG Reduction Exchange Program, American Carbon Registry (ACR), Climate Action Reserve (CAR) or other similar carbon credit registry determined to be acceptable by the local air district</p> <p>c. Encourage the applicant to consider generating or purchasing local and California-only carbon credits as the preferred mechanism to implement its offsite mitigation measure for GHG emissions and that will facilitate the State’s efforts in achieving the GHG emission reduction goal</p>	<p><b>Not Consistent</b> – The proposed Specific Plan would not require the use of carbon offsets for construction emissions.</p>

Goals, Policies, and Actions	Project Consistency
<p><b>39. Goal: Facilitate reduction of residential wood smoke</b></p> <p>a. Prohibit wood-burning fireplaces in new development, and require replacement of wood-burning fireplaces for renovations over a certain size developments</p>	<p><b>Consistent</b> –In accordance with BAAQMD Regulation 6, Rule 3, Wood-Burning Devices, new building construction may no longer include the installation of wood-burning devices, including fireplaces, EPA certified wood stoves or inserts, or pellet-fueled devices. Future development under the Specific Plan would be required to comply with BAAQMD rules and regulations and would not be allowed to include wood-burning devices.</p>
<p><b>40. Goal: Support water efficient appliances and design</b></p> <p>a. Require low-water landscaping in new developments.</p> <p>b. Require water efficient landscape maintenance to conserve water and reduce landscape waste.</p> <p>c. Incorporate water retention in the design of parking lots and landscaping</p> <p>d. Require each residential and commercial building to utilize low flow water fixtures such as low flow toilets and faucets</p>	<p><b>Consistent</b> – The proposed Specific Plan would need to be consistent with the City of Berkeley Model Landscaping Efficiency Ordinance and code compliance checklist which requires low flow fixtures.</p>
<p><b>41. Goal: Facilitate urban heat reduction in building design and planning</b></p> <p>a. Require the landscaping design for parking lots to utilize tree cover</p>	<p><b>N/A</b> – The proposed Specific Plan does not include the development of parking and would generally reduce parking requirements.</p>
<p><b>42. Goal: Enhance and expand urban forests and gardens</b></p> <p>a. Expand urban forestry and green infrastructure in new land development</p>	<p><b>Consistent</b> – The City of Berkeley has an Urban Forestry Unit which plants, maintains, and manages trees within the City. As part of their duties, the Urban Forestry Unit would continue to manage trees in the Plan Area, promoting tree planting and maintenance and working toward higher carbon sequestration.</p>
<p><b>43. Goal: Reduce organic waste disposal to landfills and promote organic waste reuse</b></p> <p>a. Require organic collection in new developments</p>	<p><b>Consistent</b> – The proposed Specific Plan would provide composting and recycling services for all new and existing buildings pursuant to City of Berkeley Zero Waste Programs and Services.</p>

Source: CARB 2017

As shown above in Table 4.5-2 the proposed Specific Plan incorporates many of the mitigation suggestions outlined in Appendix B of the 2017 Scoping Plan. However, the Specific Plan would be inconsistent with the 2017 Scoping Plan in the areas of energy efficiency, electric vehicles, and electrification as outlined in Table 4.5-2. Because the Scoping Plan sets forth strategies the state will implement to achieve the 2030 emissions target and put the state on the trajectory of achieving the 2050 target of reducing emission to 80% below 1990 levels, if the Specific Plan is inconsistent with the 2017 Scoping Plan it would also not make progress towards achieving long-term goals under EO B-55-18, Therefore, impacts are potentially significant and mitigation is required.

**Table 4.5-2 2017 Scoping Plan Areas Found to be Inconsistent**

Goals, Policies, and Actions	Specific Plan Consistency
Goal 2: Support EV, Hydrogen and Biogas Vehicle Use	Not Consistent
Goal 11: Facilitate growth of renewable energy	Not Consistent
Goal 12: Facilitate energy efficiency in new and existing buildings	Not Consistent
Goal 25: Facilitate building energy efficiency, electrification, and energy storage technology	Not Consistent
Goal 28: Facilitate urban heat reduction in building design and planning	Not Consistent
Goal 32: Support EV, Hydrogen and Biogas Vehicle Use	Not Consistent
Goal 36: Support electrification of buildings and equipment	Not Consistent
Goal 37: Facilitate energy efficiency in new and existing buildings	Not Consistent
Goal 38: Encourage off-site carbon offset projects and purchasing of carbon credits to further mitigate construction emissions	Not Consistent

## Mitigation Measures

To be consistent with the 2017 Scoping Plan and on a path towards achieving long-term goals of EO B-55-18 and the City of Berkeley clean energy goals, the following mitigation measures are required:

### *Mitigation Measure GHG-1 All-Electric New Construction*

All new buildings constructed in the Plan Area shall be built as all-electric with no natural gas connection to the building. This includes all appliances such as electric cooking, clothes drying, water heating, space heating, and air conditioning.

Projects which cannot be built as all-electric due to demonstrable technological constraints for specific components shall demonstrate an equivalent GHG reduction through other means. Project proponents shall model the annual GHG emissions from natural gas from the proposed project and then reduce GHG emissions by an equivalent amount through one of the following:

- Purchase of verified, California based, carbon credits for 20 years
- Payment for the replacement of natural gas equipment with electric in existing building(s) as identified and administered by City of Berkeley staff

For projects involving low-income housing participating in the Low-Income Housing Tax Credit Program, project proponents may utilize the Low-income Housing Tax Credit Program ZNE Calculation in California Tax Credit Allocation Committee’s (CTCAC) Sustainable Building Methods Workbook to show 100% Zero Net Energy Offset for the project.

For projects that involve natural gas components, the City of Berkeley shall review and approve plans for reducing equivalent GHG emissions prior to issuance of building permit.

*Mitigation Measure GHG-2 Electric Vehicle (EV) Readiness and EV Chargers*

All new development projects in the Plan Area shall conform to the following EV infrastructure requirements or an equivalent City of Berkeley adopted ordinance which meets or exceeds those standards:

- Single Family Homes and Duplexes
  - One Level 2<sup>2</sup> EV ready<sup>3</sup> circuit per parking space or dwelling unit (whichever is less)
- Multi-Family Buildings
  - Small/medium buildings (3-40 units):
    - One Level 2 circuit per dwelling unit
  - Large buildings (Over 40 units):
    - One circuit per dwelling unit
      - 25 percent Level 2 circuits
      - 75 percent Level 1<sup>4</sup> circuits or Level 2 circuits with load management
- Non-Residential Buildings
  - Mixture of EVSE<sup>5</sup> and EV Capable<sup>6</sup>:
    - 10 percent of spaces with Level 2 EVSE installed
    - 10 percent of spaces with Level 1 outlets and with Level 2 conduits
  - Conduits through inaccessible areas to support future Level 1 or Level 2 with power sharing. Percentage depends on parking structure type:
    - On-grade parking: 50 percent Level 2 EV Capable; Panel Capacity, average 2kW per EV space
    - Underground or deck parking: 100 percent Level 2 EV Capable; Panel Capacity, average 1kW per EV space

*Mitigation Measures GHG-3 Solar Photovoltaic Power*

All new buildings, with the exception of accessory buildings and structures, proposed in the Plan Area shall install solar photovoltaic energy systems or purchase 100% carbon neutral or renewable energy through East Bay Community Energy. Solar photovoltaic equipment shall be shown on all plans submitted for individual projects in the Plan Area.

*Mitigation Measures GHG-4 Cool Roof Technologies*

All new buildings, with the exception of accessory buildings and structures, proposed in the Plan Area shall incorporate cool roof materials or the functional equivalent (such as vegetated roofs) which meet or exceed the requirements in the most recent CALGreen Tier

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<sup>2</sup> Level 2 circuit: 40+ Amp, 208/240v AC (standard household washer/dryer outlet), charges approximately 25-30 mile driving distance per hour

<sup>3</sup> EV ready: Raceway (conduit), overcurrent protection devices, wire and outlet (i.e. full circuit) have been installed, electrical service capacity (breaker space) has been provided, Electric outlet is fully ready to charge a vehicle.

<sup>4</sup> Level 1 circuit: 15-20 Amp, 120v AC (standard household outlet), charges approximately 3-4 mile driving distance per hour

<sup>5</sup> EVSE: Electric vehicle supply equipment, equipment used to charge an EV. Includes Level 1 household wall charging equipment, Level 2 charging stations and equipment, and Level 3 direct current fast charge stations and equipment (usually found at public and commercial installations).

<sup>6</sup> EV capable: Raceway (conduit) has been installed and electrical capacity (breaker space) provided. Electric outlet has been partially prepared for future EVSE.

1 code as applied to the specific proposed building type. Cool roof materials shall be shown on all plans submitted for individual projects in the Plan Area.

### Significance After Mitigation

The following discussion explains the proposed Specific Plan's consistency with Scoping Plan goals after implementation of mitigation measures GHG-1 through GHG-4. This information is summarized in Table 4.5-3.

#### *GHG-1 All-Electric New Construction*

This mitigation measure addresses 2017 Scoping Plan Goals 12, 25, 36, and 37 relating to energy efficiency and electrification.

While it may not be feasible to require buildings to achieve net-zero GHG emissions, buildings can feasibly be built to use only electricity for their energy demands. Requiring electrification of buildings developed within the Plan Area would effectively result in building energy use becoming carbon neutral by 2045 due to the renewable electricity and carbon neutrality requirements imposed by SB 100. In order to achieve the deep greenhouse gas reductions required to achieve net-zero carbon by 2045, it is imperative that natural gas infrastructure is kept to a minimum in new construction. Therefore, with implementation of Mitigation Measure GHG-1, new buildings constructed in the Plan Area would be required to be built as all-electric. Projects which cannot be built as all-electric would need to show an equivalent GHG reduction through other means as described in the measure.

All electric buildings have been shown to be cost effective in California especially for new construction (Point Energy Innovations 2017). It is not always cost effective to renovate existing buildings because the benefit of not installing natural gas infrastructure is lost. Therefore, it is critical that the amount of new natural gas infrastructure is limited. Furthermore, building electrification, while not yet mandatory, is not dis-incentivized in the upcoming 2019 Energy Code and may become mandatory in the following code cycle.

With the all-electric mitigation measure, the Specific Plan can reduce its GHG emissions associated with building energy to zero by 2045 and be consistent with the 2017 Scoping Plan Goals 12, 37, 25, and 36.

#### *GHG-2 EV Readiness and EV Chargers*

While the proposed Specific Plan limits parking requirements in order to incentivize alternative forms of transportation, it is expected that many projects would include private vehicle parking (albeit at lower rates than outside the Plan Area). Therefore, to be consistent with the 2017 Scoping Plan Goals 2 and 32, Mitigation Measure GHG-2 requires a significant increase in spaces that have conduit access to at least a 240v (Level 2) power source. While any single development cannot require all vehicles be electric, they can provide the infrastructure to support the City's and State's long term electrification goals.

#### *GHG-3 Solar PV*

To be consistent with the 2017 Scoping Plan, 100 percent of new construction within the Plan Area must be constructed to be consistent with the solar PV requirements of the upcoming 2019 Energy Code (Title 24 2019) or future Energy Code requirements that are in effect at the time of development. Future Title 24 Energy Code requirements will likely be more stringent than current requirements. This mitigation measure satisfies the goals of 2017 Scoping Plan Goal 11.

*GHG-4 Cool Roof Technologies*

All buildings constructed in the Plan Area would be required to incorporate a cool roof material which meets or exceeds the requirements of CALGreen Tier 1 building code as applied to the building type in question. This mitigation measure shows consistency with Goal 28.

*Goals Not Addressed*

The remaining goal, Goal 38, is not specifically addressed by the proposed Specific Plan. However, due to the project characteristics and mitigation measures listed above, the project is expected to approach carbon neutrality as the State progresses on its implementation of the 2017 Scoping Plan and long-term carbon neutrality goals. Specifically, as the grid becomes carbon neutral under SB 100 and the vehicle sector becomes predominantly electric, the buildings constructed in the Plan Area and vehicles used by Plan Area residents would also approach carbon neutrality due to their reliance on clean electric power. Therefore, off-site carbon credits to offset emissions would not be necessary and further mitigation to achieve consistency with Goal 38 is not required.

**Table 4.5-3 2017 Scoping Plan Consistency After Mitigation**

<b>Goals, Policies, and Actions</b>	<b>Mitigation Measure</b>	<b>Consistency After Mitigation</b>
Goal 2: Support EV, Hydrogen and Biogas Vehicle Use	GHG-2	Consistent
Goal 11: Facilitate growth of renewable energy	GHG-3	Consistent
Goal 12: Facilitate energy efficiency in new and existing buildings	GHG-1	Consistent
Goal 25: Facilitate building energy efficiency, electrification, and energy storage technology	GHG-1	Consistent
Goal 28: Facilitate urban heat reduction in building design and planning	GHG-4	Consistent
Goal 32: Support EV, Hydrogen and Biogas Vehicle Use	GHG-2	Consistent
Goal 36: Support electrification of buildings and equipment	GHG-1	Consistent
Goal 37: Facilitate energy efficiency in new and existing buildings	GHG-1	Consistent

### c. Cumulative Impacts

GHG emissions and climate change are by definition cumulative impacts, as they affect the accumulation of greenhouse gases in the atmosphere. As indicated above in Impact GHG-1 emissions associated with the project would be less than significant with mitigation.

Under the consistency analysis methodology, the proposed Specific Plan would be considered cumulatively considerable and have a significant impact if it was found to be inconsistent with the 2017 Scoping Plan and the goals of EO B-55-18.

The proposed Specific Plan with required mitigation would be consistent with nearly all of the Scoping Plan suggestions for GHG mitigation measures as outlined in Table 4.5-3 and discussed in the “significance after mitigation” discussion. The result would be a Specific Plan which creates infrastructure capable of capitalizing on the states GHG reduction strategies over time through electrification, waste reduction, transit-oriented development, trip reduction, and renewable energy. Through these project features and mitigation measures the Specific Plan related development would have the project features to allow for carbon neutrality over time in a manner that is cost effective today.

Therefore, the impacts associated with the proposed Specific Plan can be mitigated to being less than significant and not cumulatively considerable.

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## 4.6 Hazards and Hazardous Materials

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This section evaluates potential impacts relating to hazards and hazardous materials in the soil, groundwater, and existing structures in and around the Plan Area. Geologic hazards are discussed in Section 4.4, *Geology and Soils*, of this EIR.

### 4.6.1 Setting

#### a. Plan Area Setting

The Plan Area consists of commercial and residential land uses and includes a BART station. Approximately 60 percent of the Plan Area is composed of commercial and residential development and 40 percent is public right-of-way. The most common hazards in and around the Plan Area are earthquakes, fires and release of hazardous materials. The City of Berkeley Fire Department provides fire and emergency medical service to the Plan Area. Emergency evacuation routes in the Plan Area and emergency response plans for the Plan Area are identified in the City's Multi-Hazard Functional Operations Plan. The Plan Area is not located in an airport land use plan area; the nearest public airport is Oakland International Airport, approximately 12 miles south of the Plan Area.

The most common industrial hazardous materials in and around the Plan Area are those associated with automotive mechanics and auto body repair shops. Most of these hazardous materials are petroleum-based or hydrocarbon hazardous waste and include cleaning and paint solvents, lubricants, and oils. Moreover, medical wastes, defined as potentially infectious waste from sources such as laboratories, clinics and hospitals, are adjacent to the Plan Area at existing medical offices.

In addition to existing uses, there are properties in the Plan Area where past uses could have produced localized contamination or concentrations of hazardous substances. Residues of hazardous materials in soils or groundwater could expose people to those substances if the site were to be redeveloped or excavated. A search of the California Department of Toxic Substance Control's (DTSC) EnviroStor database and the State Water Resources Control Board's (SWRCB) GeoTracker database (conducted on September 4, 2018), which contain information on properties in California where hazardous substances have been released or where the potential for a release exists, identified 10 "closed" Leaking Underground Fuel Tank (LUFT) sites in the Plan Area. An additional 12 sites were located close to but outside of the Plan Area, all of which were closed. SWRCB regulates LUFT sites. Three Cleanup Program Sites were identified outside the Plan Area. Table 4.6-1 lists DTSC and SWRCB listed cleanup sites in the Plan Area and Figure 4.6-1 shows the locations of the cleanup sites in the Plan Area.

The EnviroStor Database did not identify any Superfund or State Response sites in the Plan Area. It did identify one inactive site in need of evaluation.<sup>1</sup> The Mosen Plating and Silversmiths site, at 3370 Adeline Street, completed a Phase I Environmental Site Assessment in 1997.

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<sup>1</sup> Inactive – Needs Evaluation: identifies non-active sites where DTSC has determined a PEA or other evaluation is required.

**Table 4.6-1 Cleanup Sites in the Plan Area**

Project Type	Name	Address	Status
<b>Sites in the Plan Area</b>			
LUST Cleanup Site <sup>1</sup>	Kalmar Property	2034 Blake Street	Completed-Case Closed
LUST Cleanup Site	Shield Health Care	2567 Shattuck Avenue	Completed-Case Closed
LUST Cleanup Site	Toyota Flynn Trust	2555 Shattuck Avenue	Completed-Case Closed
LUST Cleanup Site	Berkley Honda	2600 Shattuck Avenue	Completed-Case Closed
LUST Cleanup Site	Berkeley Fire Station #5	2680 Shattuck Avenue	Completed-Case Closed
LUST Cleanup Site	Bekins Van Storage	2721 Shattuck Avenue	Completed-Case Closed
LUST Cleanup Site	McKevitt Volvo	2700 Shattuck Avenue	Completed-Case Closed
LUST Cleanup Site	Former Shell Service Station	2747 Adeline Street	Completed-Case Closed
LUST Cleanup Site	California Cunocar	2020 Stuart Street	Completed-Case Closed
LUST Cleanup Site	Hub Paint Center	2917 Adeline Street	Completed-Case Closed
Tiered Permit <sup>2</sup>	Mosen PLTG and Silversmiths	3370 Adeline Street	Inactive – in need of evaluation
<b>Sites Outside of the Plan Area<sup>3</sup></b>			
LUST Cleanup Site	Herrick Hospital Alta Bates	2001 Dwight Way	Completed-Case Closed
LUST Cleanup Site	Unknown	2167-2183 Dwight Way	Completed-Case Closed
LUST Cleanup Site	Commercial Property	2201 Dwight Way	Completed-Case Closed
Cleanup Program Site <sup>3</sup>	2107 Dwight (aka The Dwight)	2707 Dwight Way	Completed-Case Closed
LUST Cleanup Site	UC Berkeley Physical Plant	2000 Carleton Street	Completed-Case Closed
LUST Cleanup Site	Newberry Station	2929 Shattuck Avenue	Completed-Case Closed
LUST Cleanup Site	Southwick Chrysler Plymouth	2900 Shattuck Avenue	Completed-Case Closed
LUST Cleanup Site	Former Shell	2996 Shattuck Avenue	Completed-Case Closed
LUST Cleanup Site	ARCO #00414	3000 Shattuck Avenue	Completed-Case Closed
LUST Cleanup Site	Enterprise Car Rental	3001 Shattuck Avenue	Completed-Case Closed
Cleanup Program Site	Newberry Station Office Park	2929 Shattuck Avenue	Completed-Case Closed
Cleanup Program Site	U.S. Smog and Gas	3000 Shattuck Avenue	Completed-Case Closed

<sup>1</sup> A LUST site is an undergoing cleanup due to an unauthorized release from an UST system. An underground storage tank system (UST) is a tank and any underground piping connected to the tank that has at least 10 percent of its combined volume underground. UST regulations apply only to underground tanks and piping storing either petroleum or certain hazardous substances.

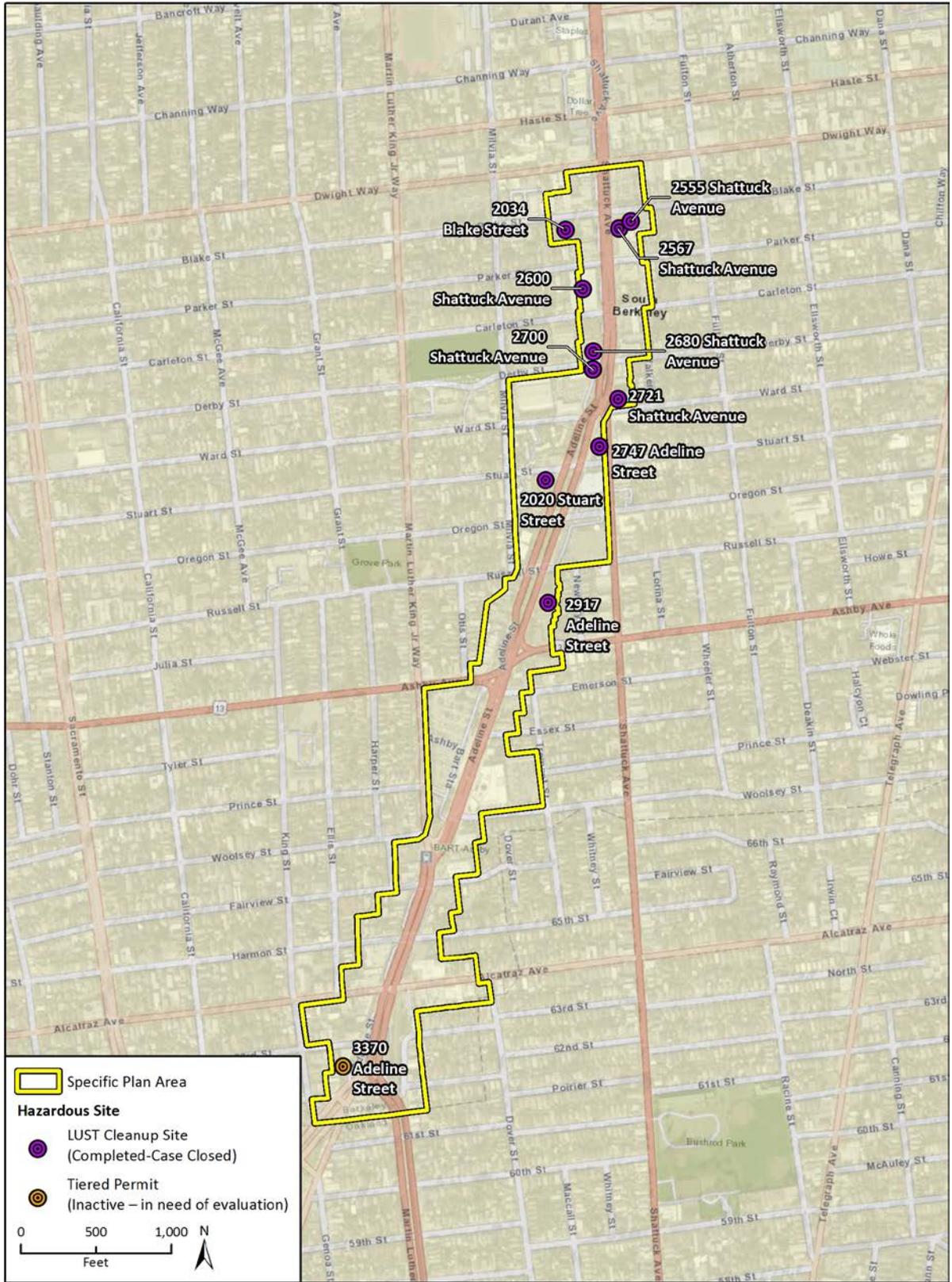
<sup>2</sup> A corrective action cleanup project on a hazardous waste facility that either was eligible to treat or permitted to treat waste under the Tiered Permitting system. Facilities in this category fall under the Permit by Rule tier or Conditionally Authorized or Exempt tiers.

<sup>3</sup> A Cleanup Program Site is a includes all "non-federally owned" sites that are regulated under the State Water Resources Control Board's Site Cleanup Program and/or similar programs conducted by each of the nine Regional Water Quality Control Boards. Cleanup Program Sites are also commonly referred to as "Site Cleanup Program sites". Cleanup Program Sites are varied and include but are not limited to pesticide and fertilizer facilities, rail yards, ports, equipment supply facilities, metals facilities, industrial manufacturing and maintenance sites, dry cleaners, bulk transfer facilities, refineries, mine sites, landfills, Resource Conservation and Recovery Act /CERCLA cleanups, and some brownfields.

<sup>4</sup> Site is outside the Plan Area but within 1,000 feet of the Plan Area Boundary

Source: DTSC 2018 and SWRCB 2015

Figure 4.6-1 Cleanup Sites in the Plan Area



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 Additional data provided by EnviroStor Database 2018.

Fig 4. Cleanup Sites in the Plan Area

In addition to hazardous materials used and generated in the Plan Area, hazardous materials and waste also pass through the community en route to other destinations via the railroads and major regional routes, including Shattuck Avenue and Ashby Avenue/State Route 13. The City does not have direct authority over the transport of hazardous materials on the major roads and rail lines in the Plan Area. Instead, the US Department of Transportation (DOT) regulates transportation of hazardous materials by truck and rail.

## **b. Regulatory Setting**

The management of hazardous materials and hazardous wastes is regulated at the federal, state, and local levels through programs administered by the U.S. Environmental Protection Agency (USEPA), agencies under the California Environmental Protection Agency (CalEPA), such as the DTSC, federal and state occupational safety agencies, the Bay Area Air Quality Management District (BAAQMD), and Alameda County Department of Environmental Health.

### **Federal**

At the federal level, the USEPA is the principal regulatory agency. The Occupational Safety and Health Administration 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 DOT regulates transportation of hazardous materials.

#### *Resource Conservation and Recovery Act of 1974*

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

#### *The Hazardous and Solid Waste Amendments*

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.

#### *Comprehensive Environmental Response, Compensation, and Liability Act of 1980*

Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), also known as Superfund, was enacted in 1980 to ensure that funds were available to clean up abandoned hazardous waste sites, compensate victims, address releases of hazardous materials, and establish liability standards for responsible parties.

#### *The Superfund Amendments and Reauthorization Act of 1986*

The Superfund Amendments and Reauthorization Act amended CERCLA in 1986 to increase Superfund budget, modify contaminated site cleanup criteria and schedules, and revise settlement procedures. Superfund Amendments and Reauthorization Act also provides a regulatory program and fund for UST clean ups.

## State

At the state level, agencies such as Cal/OSHA, the Office of Emergency Services (OES), and the Department of Health Services (DHS) have rules governing the use of hazardous materials that parallel federal regulations and are sometimes more stringent. 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. DTSC has oversight of Annual Work Plan sites (commonly known as State Superfund sites), sites designated as having the greatest potential to affect human health and the environment.

The California Department of Public Health (CDPH, formerly California Department of Health Services) regulates the generation, handling, storage, treatment, and disposal of medical waste in accordance with the California Medical Waste Management Act (California Health and Safety Code, Sections 117600–118360). This law requires medical waste generators to register with the CDPH, Medical Waste Management Program, and submit a medical waste management plan to the local enforcement agency.

The primary California State laws for hazardous waste are the California Hazardous Waste Control Law, which is the state equivalent of Resource Conservation and Recovery Act, and the Carpenter-Presley-Tanner Hazardous Substance Account Act, which is the state equivalent of CERCLA. State hazardous materials and waste laws are in the California Code of Regulations, Titles 22 and 26. The state regulation concerning the use of hazardous materials in the workplace is included in Title 8 of the California Code Regulations.

Government Code Section 65962.5 requires the California Environmental Protection Agency 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 CEQA requirements in providing information about the location of hazardous materials release sites.

### *California Fire Code*

California Code of Regulations, Title 24, also known as the California Building Standards Code, contains the California Fire Code (CFC), included as Part 9 of that Title. Updated every three years, the CFC includes provisions and standards for emergency planning and preparedness, fire service features, fire protection systems, hazardous materials, fire flow requirements, and fire hydrant locations and distribution.

## Regional and Local

The RWQCB is authorized by the SWRCB to enforce provisions of the Porter-Cologne Water Quality Control Act of 1969. This act gives the RWQCB authority to require groundwater investigations when the quality of groundwater or surface waters of the State is threatened and to require remediation of the site, if necessary. Both of these agencies are part of the California EPA. In the Bay Area, BAAQMD may impose specific requirements on remediation activities to protect ambient air quality from dust or other airborne contaminants.

Administration and enforcement of the major environmental programs were transferred to local agencies as Certified Unified Program Agencies (CUPA) 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. The City of Berkeley Toxics Management Division (TMD) is the CUPA for

Berkeley. It is responsible for regulating the storage, use, treatment, and disposal of hazardous materials and wastes in Berkeley.

The TMD manages a map of areas in Berkeley known or suspected to have contamination issues, known as Environmental Management Areas (EMA), to advise permit applicants of potential health and environmental concerns that may be encountered during construction involving excavation or dewatering. The TMD reviews proposed development projects in an EMA to determine if special requirements should apply to reduce exposure to contaminants (City of Berkeley 2010).

#### *City of Berkeley 2014 Local Hazard Mitigation Plan*

The City of Berkeley 2017 Local Hazard Mitigation Plan (LHMP) 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. In general, the LHMP includes guiding objectives and actions, organized into high, medium, and low priority actions for emergency preparedness (City of Berkeley 2014).

#### *City of Berkeley General Plan*

The Berkeley General Plan Disaster Preparedness and Safety Element includes goals and policies to reduce the risk of death, injuries, and property damage in the city. Relevant goals and policies are listed below:

**Policy S-1 Response Planning.** Ensure that the City’s emergency response plans are current and incorporate the latest information on hazards, vulnerability, and resources.

**Policy S-10 Mitigation of Potentially Hazardous Buildings.** Pursue all feasible methods, programs, and financing to mitigate potentially hazardous buildings.

**Policy S-12 Utility and Transpiration Systems.** Improve the disaster-resistance of utility and transportation systems to increase public safety and to minimize damage and service disruption following a disaster.

**Policy S-13 Hazards Identification.** Identify, avoid and minimize natural and human-caused hazards in the development of property and the regulation of land use.

**Policy S-14 Land Use Regulation.** Require appropriate mitigation in new development, in redevelopment/reuse, or in other applications.

**Policy S-15 Construction Standards.** Maintain construction standards that minimize risks to human lives and property from environmental and human-caused hazards for both new and existing buildings.

**Policy S-21 Fire Preventative Design Standards.** Develop and enforce construction and design standards that ensure new structures incorporate appropriate fire prevention features and meet current fire safety standards.

**Policy S-22 Fire Fighting Infrastructure.** Reduce fire hazard risks in existing developed areas.

**Policy S-23 Property Maintenance.** Reduce fire hazard risks in existing developed areas by ensuring that private property is maintained to minimize vulnerability to fire hazards.

**Policy S-24 Mutual Aid.** Continue to fulfill legal obligations and support mutual aid efforts to coordinate fire suppression in Alameda and Contra Costa Counties, Oakland,

the East Bay Regional Park District, and the State of California to prevent and suppress major wildland and urban fire destruction.

#### *South Berkeley Area Plan*

The planning area for the City's 1990 South Berkeley Area Plan encompasses a portion of the Plan Area (see Figure 2-2 in Section 2, *Project Description*) and includes the following goals related to hazards and hazardous materials:

**Goal 1:** Identify the nature and extent of hazardous materials use, storage, and disposal in Berkeley.

**Goal 2:** Develop a comprehensive hazardous materials management plan.

### 4.6.2 Impact Analysis

#### a. Methodology and Significance Thresholds

Based on Appendix G of the *CEQA Guidelines*, a significant impact would occur 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, would create a significant hazard to the public or the environment
5. Be 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, and result in a safety hazard for people residing or working in the project area
6. Be located within the vicinity of a private airstrip, and result in a safety hazard for people 6.residing or working in the project area
7. Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan
8. Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands

## b. Project Impacts and Mitigation Measures

<b>Threshold 1:</b>	Would the Specific Plan create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?
<b>Threshold 2:</b>	Would the Specific Plan 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** IMPLEMENTATION OF THE PROPOSED SPECIFIC PLAN WOULD INCLUDE DEVELOPMENT OF RESIDENTIAL OR COMMERCIAL LAND USES THAT COULD INVOLVE THE USE, STORAGE, DISPOSAL, OR TRANSPORTATION OF HAZARDOUS MATERIALS. UPSET OR ACCIDENT CONDITIONS IN THE PLAN AREA COULD INVOLVE THE RELEASE OF HAZARDOUS MATERIALS INTO THE ENVIRONMENT. REQUIRED ADHERENCE TO EXISTING REGULATIONS, PROGRAMS, AND BERKELEY GENERAL PLAN POLICIES WOULD ENSURE THAT IMPACTS WOULD BE LESS THAN SIGNIFICANT.

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### Construction Activities

Although no specific development projects are proposed in the Specific Plan, implementation of the Specific Plan could facilitate demolition of existing buildings in the Plan Area and construction of new buildings, as well as improvements in the public realm such as street, sidewalk and open space reconfiguration. The following discussion addresses the use of hazardous materials during construction activities; the potential for release of existing contaminated materials during construction; and the potential for release of lead-based paint or asbestos containing materials (ACM) during demolition or construction.

#### *Use of Hazardous Materials during Construction*

Construction associated with future development in the Plan Area may include the temporary transport, storage, and use of potentially hazardous materials including fuels, lubricating fluids, cleaners, or solvents. If spilled, these substances could pose a risk to the environment and to human health. However, the transport, storage, use, or disposal of hazardous materials would be subject to federal, State, and local regulations pertaining to the transport, use, storage, and disposal of hazardous materials, which would assure that risks associated with hazardous materials are minimized. The transport of any hazardous materials would be subject to federal, State, and local regulations, which would assure that risks associated with the transport of hazardous materials are minimized. Impacts associated with the use of hazardous materials during construction would be less than significant.

#### *Release of Contaminated Materials during construction*

Most of the Plan Area is in an Environmental Management Area (EMA) as identified by the City's TMD that identifies areas in the city known or suspected to have groundwater contamination (City of Berkeley 2010). Potential health and environmental concerns related to contaminated groundwater and soil may occur during excavation and dewatering for new construction. Development in the EMA requires project review by the TMD prior to issuance of permits. Upon project review, the TMD will determine if any special requirements apply based on site conditions. Typically, projects in the EMA must include preparation of a Phase I Environmental Site Assessment, implementation of a soil and groundwater management

plan, and/or a dewatering and monitoring plan to ensure the discharge of clean water. In addition, future development under the Specific Plan would be subject to regulatory programs such as those overseen by the RWQCB and the DTSC. These agencies require applicants for development of potentially contaminated properties to perform investigation and cleanup if the properties are contaminated with hazardous substances.

Grading or excavation on sites with existing contamination may also result in the transport and disposal of hazardous materials if they are unearthed and removed from the site. However, the transport, storage, use, or disposal of hazardous materials would be subject to federal, state, and local regulations pertaining to the transport, use, storage, and disposal of hazardous materials, which would assure that risks associated with hazardous materials are minimized. In addition, construction activities that transport hazardous materials would be required to transport such materials along designated roadways in the city, thereby limiting risk of upset. Impacts would be less than significant.

#### *Asbestos and Lead*

The Plan Area contains numerous residential and commercial buildings that, due to their age, may contain asbestos and/or lead-based paint. Structures built before the 1970s typically contained asbestos containing materials (ACM). Demolition or redevelopment of these structures could result in health hazard impacts to workers if not remediated prior to construction activities. However, future projects in the Plan Area would be subject to City of Berkeley standard conditions of approval. This includes the following standard condition of approval from the City's TMD:

Building Materials Survey: Prior to approving any permit for partial or complete demolition and renovation activities involving the removal of 20 square or lineal feet of interior or exterior walls, a building materials survey shall be conducted by a qualified professional. The survey shall include, but not be limited to, identification of any lead-based paint, asbestos, polychlorinated biphenyl (PBC) containing equipment, hydraulic fluids in elevators or lifts, refrigeration systems, treated wood and mercury containing devices (including fluorescent light bulbs and mercury switches). The Survey shall include plans on hazardous waste or hazardous materials removal, reuse or disposal procedures to be implemented that fully comply state hazardous waste generator requirements (22 California Code of Regulations 66260 et seq). The Survey becomes a condition of any building or demolition permit for the project. Documentation evidencing disposal of hazardous waste in compliance with the survey shall be submitted to TMD within 30 days of the completion of the demolition. If asbestos is identified, Bay Area Air Quality Management District Regulation 11-2-401.3 a notification must be made and the J number must be made available to the City of Berkeley Permit Service Center.

This standard condition of approval requires that a building materials survey be conducted by a qualified professional. The survey must include plans on hazardous waste or hazardous materials removal, reuse or disposal procedures to be implemented that fully comply state hazardous waste generator requirements. Future projects in the Plan Area would also be required to adhere to BAAQMD Regulation 11, Rule 2, which governs the proper handling and disposal of ACM for demolition, renovation, and manufacturing activities in the Bay Area, and California Occupational Safety and Health Administration (CalOSHA) regulations regarding lead-based materials. The California Code of Regulations, §1532.1, requires testing, monitoring, containment, and disposal of lead-based materials, such that exposure levels do not exceed CalOSHA standards. With adherence to standard

conditions of approval, BAAQMD, and CalOSHA policies regarding ACM and lead-based paint, impacts at the program level would be less than significant.

### **Operational Activities**

The proposed Specific Plan would facilitate the construction of new residential and commercial land uses that could involve the use, storage, disposal, or transportation of hazardous materials. The potential residential and most of the potential commercial uses do not generally involve the use, storage, disposal, or transportation of significant quantities of hazardous materials. They may involve use and storage of some materials considered hazardous, though these materials would be primarily limited to solvents, paints, chemicals used for cleaning and building maintenance, and landscaping supplies. These materials would not be different from household chemicals and solvents already in wide use throughout the Plan Area. Residents and workers are anticipated to use limited quantities of products routinely for periodic cleaning, repair, and maintenance or for landscape maintenance/pest control that could contain hazardous materials. Those using such products would be required to comply with all applicable regulations regarding the disposal of household waste.

The current and proposed zoning for properties in the Plan Area prohibit industrial uses. The proposed Specific Plan would not establish new industrial, warehouse, auto-service, or manufacturing zones in the Plan Area. Land use strategies for each subarea within the Specific Plan prioritize commercial and residential land uses on privately parcels and a mix of those uses and public space on public parcels. Therefore, the proposed Specific Plan would not introduce new manufacturing, warehouse, or industrial uses that would sell, use, store, transport, or release substantial quantities of hazardous materials.

Goal 3.1 of the proposed Specific Plan is to encourage mixed-use development in the Specific Plan Area. New residential uses in mixed-use or commercial areas could be exposed to the transport of hazardous materials through area roadways. Certain allowed uses close to mixed residential uses may use or create hazardous materials. For example, commercial development in the Plan Area may result in the transport of hazardous materials. However, the numerous hazardous material regulations detailed in the Regulatory Setting section would minimize impacts related to hazardous materials in the Plan Area. Hazardous materials would be required to be transported under DOT regulations. In addition, the City's Toxics Management Division has substantial regulations concerning hazardous materials under its CUPA jurisdiction and related Unified Programs. Compliance with existing laws and regulations governing the transport, use, storage, disposal, or release of hazardous materials and wastes would reduce impacts related to exposure of the public or environment to the routine use or accidental release of hazardous materials to less than significant.

### **Mitigation Measures**

No mitigation measures are required.

**Threshold 3:** Would implementation of the proposed the Specific Plan result in land uses that 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** IMPLEMENTATION OF THE PROPOSED SPECIFIC PLAN WOULD NOT INVOLVE FACILITIES THAT WOULD PRODUCE OR EMIT HAZARDOUS MATERIALS NEAR SCHOOLS. THIS IMPACT WOULD BE LESS THAN SIGNIFICANT.

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No schools are located in the Plan Area, but Sylvia Mendez Elementary School is approximately 0.25 mile east of the Plan Area; Herold E. Jones Child Study Center is approximately 0.2 miles northeast of the Plan Area. The proposed Specific Plan would not involve new industrial or manufacturing uses. The potential residential uses and most of the potential commercial uses would not involve the use, storage, disposal, or transportation of significant quantities of hazardous materials. They may involve use and storage of some materials considered hazardous, though primarily these would be limited to solvents, paints, chemicals used for cleaning and building maintenance, and landscaping supplies. These materials would not be different from household chemicals and solvents already in general and wide use throughout the Plan Area. Uses in the Plan Area that sell, use, store, generate, or release hazardous materials must adhere to applicable federal, State, and local safety standards, ordinances, and regulations.

As mentioned in Impact HAZ-1 above, construction associated with future development in the Plan Area may include the temporary transport, storage, and use of potentially hazardous materials including fuels, lubricating fluids, cleaners, or solvents. Specifically, demolition of existing buildings and grading and excavation activities associated with new construction within the Plan Area may result in emissions and transport of hazardous materials within one-quarter mile of existing schools. However, adherence to applicable policies regarding emission and transport of hazardous materials would ensure impacts at the program level would be less than significant.

### Mitigation Measures

No mitigation measures are required.

**Threshold 4:** Would the Specific Plan 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 create a significant hazard to the public or the environment?

**Impact HAZ-3** THERE IS ONE PROPERTY IN THE PLAN AREA WITH POTENTIALLY LOCALIZED CONTAMINATION OR CONCENTRATIONS OF HAZARDOUS SUBSTANCES IN THE PLAN AREA. HOWEVER, PROJECTS IN THE PLAN AREA WOULD BE REQUIRED TO COMPLY WITH EXISTING REGULATIONS RELATED TO HAZARDOUS MATERIALS AND WASTES. THEREFORE, WORKERS OR RESIDENTS IN THE PLAN AREA WOULD NOT BE EXPOSED TO HAZARDS RESULTING FROM DEVELOPMENT OF A HAZARDOUS MATERIALS SITE AND THIS IMPACT WOULD BE LESS THAN SIGNIFICANT.

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There are numerous permitted hazardous waste generators and sites with USTs or above ground storage tanks in Berkeley. Table 4.6-1 lists DTSC listed cleanup sites in and around the Plan Area. As shown, there are no Superfund or other State Response sites in the Plan Area. There are 10 "completed-case closed" LUFT sites in the Plan Area. Closed sites are

those where all appropriate corrective action requirements have occurred. These properties can be released for reuse, with restrictions to prevent inappropriate land uses.

One inactive site in the Plan Area has been identified by DTSC as a Tiered Permit in need of evaluation. A Phase I Environmental Site Assessment was completed in 1997 for the Mosen Plating and Silversmiths site located at 3370 Adeline. The Phase I checklist indicated that no releases of hazardous materials were identified. New development on the site may be exposed to hazards from active plating and cleaning activities. Future development that may be proposed at 3370 Adeline Street would be subject to DTSC regulations, City review and other existing environmental laws related to cleanup of hazardous wastes. Cleanup of the site would have to be certified by DTSC before new development could occur.

Because development, including grading and excavation, would be contingent on cleanup of existing hazards on this site, no significant impacts related to hazardous materials would occur with implementation of the proposed Specific Plan.

### Mitigation Measures

No mitigation measures are required.

<b>Threshold 5:</b>	Would the Specific Plan be 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, and result in a safety hazard for people residing or working in the project area?
<b>Threshold 6:</b>	Would the Specific Plan be located within the vicinity of a private airstrip, and result in a safety hazard for people 6.residing or working in the project area?

**Impact HAZ-4** THE PLAN AREA IS NOT LOCATED IN AN AIRPORT LAND USE PLAN OR IN THE VICINITY OF A PRIVATE AIRSTRIP. IMPACTS RELATED TO AIRPORTS WOULD NOT OCCUR.

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The nearest airport to the Plan Area is the Oakland International Airport approximately 8.5 miles south of the Plan Area. The Plan Area is not in the land use plan for the airport (Alameda County 2010). There are no private airstrips near the Plan Area. The Specific Plan would not result in a safety hazard for people residing or working in the project area because there are no airports near the Plan Area. There would be no impact.

### Mitigation Measures

No mitigation measures are required.

<b>Threshold 7:</b>	Would the Specific Plan impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?
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**Impact HAZ-5** IMPLEMENTATION OF THE PROPOSED SPECIFIC PLAN 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.

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Figure 14 of the Berkeley General Plan identifies existing emergency access and evacuation routes in the Plan Area. Adeline Avenue is designated as an emergency access route to move people and emergency response equipment in a disaster. General Plan Policy T-28 identifies actions for emergency access. These include not installing diverters or

speed humps on streets identified as Emergency Access and Evacuation Routes. While traffic increases associated with buildout of the Specific Plan would affect streets within the Plan Area, Adeline Street, Ashby Avenue, and Shattuck Avenue would still serve as evacuation routes in case of emergency.

As discussed in Section 4.12, *Transportation and Traffic*, although the Specific Plan envisions narrowing through lanes along the corridor to 10 or 11 feet, and elimination of travel lanes along some segments of Adeline Street, the corridor would continue to accommodate fire equipment and emergency response vehicles sufficiently that the effectiveness of the streets as Emergency Access and Evacuation Routes would be maintained. The Specific Plan would continue to provide multiple access points throughout the Plan Area for emergency vehicles.

The Specific Plan does not include policies or programs that would impair or interfere with emergency response or emergency evacuation. As discussed in Section 4.11, *Public Services and Recreation*, development in the Plan Area would be required to conform to the latest fire code requirements, including provisions for emergency access. With adherence to existing General Plan policies and other regulations, the proposed Specific Plan would not impair or interfere with an emergency response or evacuation plan. Impacts would be less than significant.

### Mitigation Measures

No mitigation measures are required.

**Threshold 8:** Would the Specific Plan expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?

**Impact HAZ-6** IMPLEMENTATION OF THE PROPOSED SPECIFIC PLAN WOULD NOT EXPOSE PEOPLE OR STRUCTURES TO A SIGNIFICANT RISK FROM WILDLAND FIRES BECAUSE THE PLAN AREA IS LOCATED IN AN URBANIZED SETTING. NO IMPACT WOULD OCCUR.

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The Plan Area is surrounded by urban land uses that are not mixed with or adjacent to wildlands. Surrounding land uses include commercial and residential development and are not located in an area subject to wildland fire hazards. The project site is not located in a Very High Fire Hazard Severity Zone and would not be exposed to an increased risk of wildfires (CAL FIRE 2008). Therefore, the project would not expose people or structures to a significant risk from wildland fires. There would be no impact.

### Mitigation Measures

No mitigation measures are required.

### c. Cumulative Impacts

Cumulative development in Berkeley has potential to expose future area residents, employees, and visitors to current and historical use of hazardous materials. Continued urban development in Berkeley 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, 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. Compliance with regulatory requirements and General Plan policies would avoid potential hazard impacts associated with cumulative development in Berkeley.

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. 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. With adherence to existing General Plan emergency evacuation policies and other federal, state, regional, and local regulations, no significant cumulative human health impacts would occur.

## 4.7 Hydrology and Water Quality

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This section evaluates the potential environmental effects related to hydrology and water quality associated with implementation of the proposed Specific Plan.

### 4.7.1 Setting

#### a. Hydrology

##### Regional Watershed

The California Department of Water Resources divides surface watersheds in California into 10 hydrologic regions. Berkeley lies in San Francisco Bay Hydrologic Region (Bay Region), which contains 33 alluvial groundwater basins, covers approximately 4,500 square miles, and includes all of San Francisco County and portions of Marin, Sonoma, Napa, Solano, San Mateo, Santa Clara, Contra Costa, and Alameda counties. The Bay Region comprises numerous watersheds that drain directly into San Francisco Bay, downstream of the Sacramento-San Joaquin River Delta and coastal creek watersheds in Marin and San Mateo counties that drain directly to the Pacific Ocean. Within the San Francisco Bay Hydrologic Region, the Plan Area is in the Bay Bridges Hydrologic Unit, Berkeley Hydrologic Area, undefined Hydrologic Sub-Area, undefined CDFW Super Planning Watershed, and Point Richmond CDFW Planning Watershed.

##### Local Watersheds

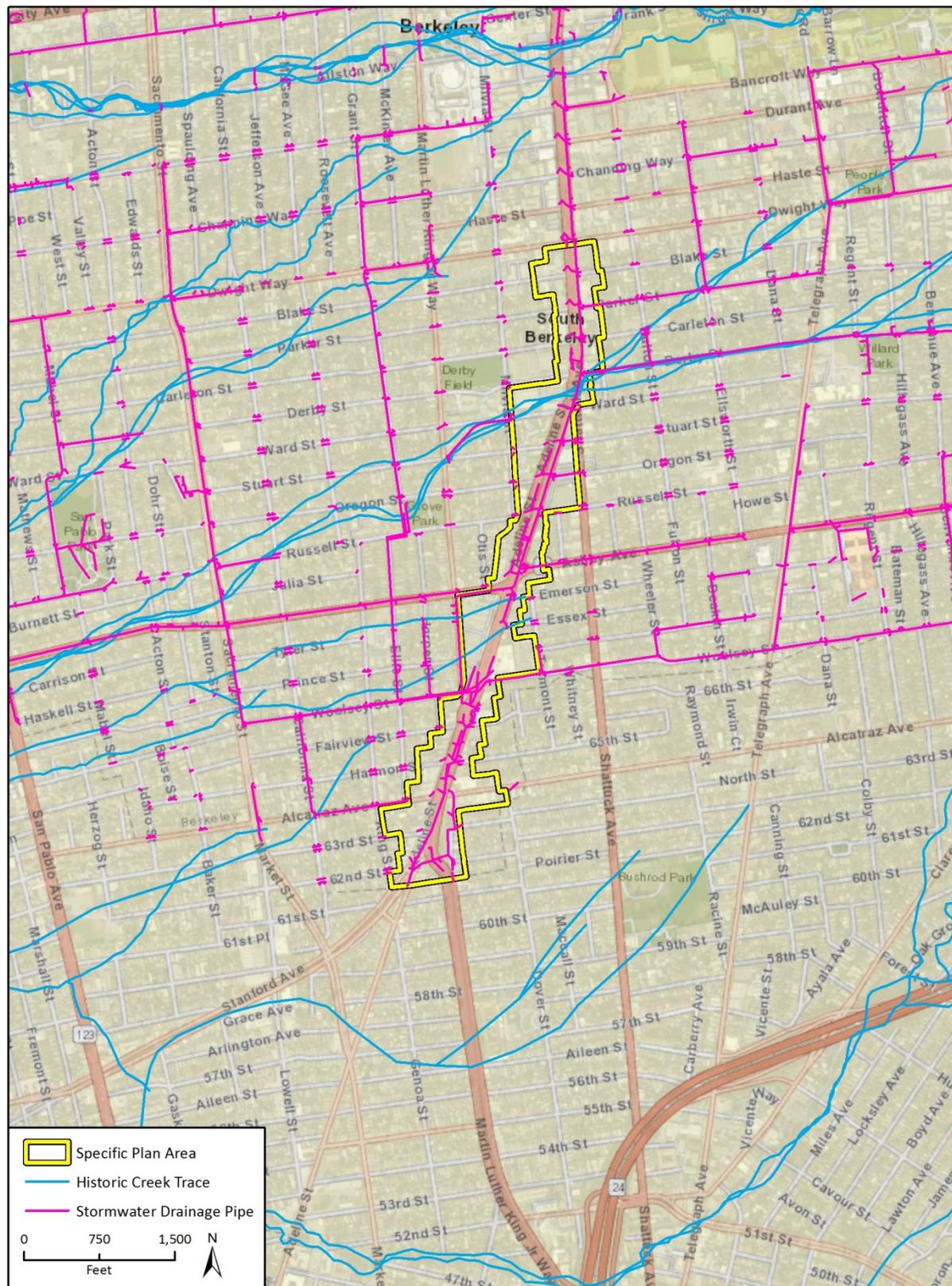
The Plan Area overlies the Temescal Watershed and the Potter Watershed (City of Berkeley 2011). Generally, areas in the Plan Area north of Alcatraz Avenue drain to the Potter/Derby Creeks Watershed and areas south of Alcatraz Avenue drain to the Temescal Watershed. Both watersheds drain to the San Francisco Bay.

The 6.7-square-mile Temescal Creek Watershed spans the northernmost section of the Oakland Hills. South of Highway 24, two of the watershed's four creeks drain the Montclair residential district and flow into Lake Temescal. North of the Highway 24, the other two creeks drain the Claremont hills residential area and Claremont Canyon Regional Preserve. Both of these join the main channel of Temescal Creek below Lake Temescal, from which point water flows primarily through culverts to the Emeryville Crescent State Marine Preserve (ACFCD 2017).

The Potter Watershed is the largest watershed in the city, encompassing approximately one-third of the land area from the southern bank of the Strawberry Creek in the north to the Berkeley city limit in the south, and from Claremont Canyon in the east to the San Francisco Bay shore in the west. This watershed begins in the Claremont Canyon and directs flows to the west through a network of canals and underground culverts in residential and commercial areas, towards San Francisco Bay. Unlike other watersheds in the city, water draining through the Potter Watershed is directed entirely through the City's municipal stormwater sewer system and does not flow through natural (open) waterways before reaching San Francisco Bay (City of Berkeley 2011).

Figure 4.7-1 shows drainages and historic creek traces in the vicinity of the Plan Area. The historic creek traces that travel through the Plan Area are underground in pipes and are not open or culverted through the Plan Area.

Figure 4.7-1 Drainage and Historic Creek Traces in the Vicinity of the Plan Area



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 Additional data provided by City of Berkeley 2019. U. S. Fish and Wildlife Service 2017.

Fig 4.7-1 Stormwater Drainage

## Groundwater

As discussed in Section 4.13, *Utilities and Service Systems*, water supply in the Plan Area would be provided by the East Bay Municipal Utility District (EBMUD). The majority of the water delivered by EBMUD originates from the Mokelumne River watershed, and the remaining water originates as runoff from the protected watershed lands and reservoirs in the East Bay Hills. Supplemental groundwater projects would allow EBMUD to be flexible in response to changing external conditions, such as single-year or multiple-year droughts. For example, the Bayside Groundwater Project will allow EBMUD to bank water during wet years for extraction, treatment, and use during dry years. Construction of the project was completed in 2010, but subsequent dry conditions and the need to obtain the necessary approvals have prevented EBMUD from injecting water into the project (EBMUD 2015).

### b. Water Quality

#### Regional Stormwater and Urban Runoff

The San Francisco Bay region's immediate watershed is highly urbanized, resulting in contaminant loads from point and nonpoint sources. Stormwater runoff pollutants vary with land use, topography, and the amount of impervious surface, as well as the amount and frequency of rainfall and irrigation practices. Typically, runoff in developed areas contains oil, grease, litter, and metals accumulated in streets, driveways, parking lots, and rooftop. It also contains pollutants applied to landscaped areas. All stormwater runoff generated in Berkeley eventually discharges into San Francisco Bay. Storm drains in the city limits drain to the Bay. The San Francisco Bay Regional Water Quality Control Board (SFBRWQCB) is the primary agency charged with protecting and enhancing surface and ground water quality in the region (City of Berkeley 2011).

The SFBRWQCB monitors surface water quality through implementation of the Basin Plan and designates beneficial uses for surface water bodies and groundwater. Since all of the waterways within the Potter Watershed are underground, the San Francisco Bay RWQCB has not designated beneficial uses for any of the waterways in the watershed (SFBRWQCB 2017).

#### Plan Area Stormwater and Urban Runoff

The majority of the Plan Area consists presently of impervious surfaces (i.e., structures, parking lots, roadways). Pervious surfaces include pockets of urban landscaping in residential yards, linear landscaping along roadways and undeveloped land in the upper portion of the watershed. The stormwater runoff generated by new development and redevelopment under the proposed Specific Plan would be collected by drainage inlets and conduits that discharge into San Francisco Bay. There are no surface water bodies in the Plan Area.

### c. Flood Hazards

#### FEMA Flood Hazard Zones

The Federal Emergency Management Agency (FEMA) establishes base flood elevations (BFE) for 100-year and 500-year flood zones and establishes Special Flood Hazard Areas (SFHA). SFHAs are those areas within 100-year flood zones or areas that will be inundated by a flood event having a one percent chance of being equaled or exceeded in any given year. The 500-year flood zone is defined as the area that could be inundated by the flood

which has a 0.2 percent probability of occurring in any given year, or once in 500 years, and is not considered an SFHA. Development in flood zones is regulated through the Berkeley Municipal Code Chapter 17.12 Flood Development. Figure 4.7-2 shows that the Plan Area is not located in an SFHA or 100-year flood zone.

## Dams and Levees

No dams are located in the Plan Area. In addition, there are no levees in the Plan Area.

## Tsunami and Seiches

A tsunami is a series of waves generated by an impulsive disturbance in the ocean or in a small, connected body of water. Tsunamis are produced when movement occurs on faults in the ocean floor, usually during very large earthquakes. Sudden vertical movement of the ocean floor by fault movement displaces the overlying water column, creating a wave that travels outward from the earthquake source. An earthquake anywhere in the Pacific Ocean can cause tsunamis around the entire Pacific basin.

Seiches are waves generated in an enclosed body of water, such as San Francisco Bay, from seismic activity. Seiches are related to tsunamis for enclosed bays, inlets, and lakes. These tsunami-like waves can be generated by earthquakes, subsidence or uplift of large blocks of land, submarine and onshore landslides, sediment failures and volcanic eruptions. The strong currents associated with these events may be more damaging than inundation by waves. The largest seiche wave ever measured in San Francisco Bay, following the 1906 earthquake, was four inches high.

## d. Regulatory Setting

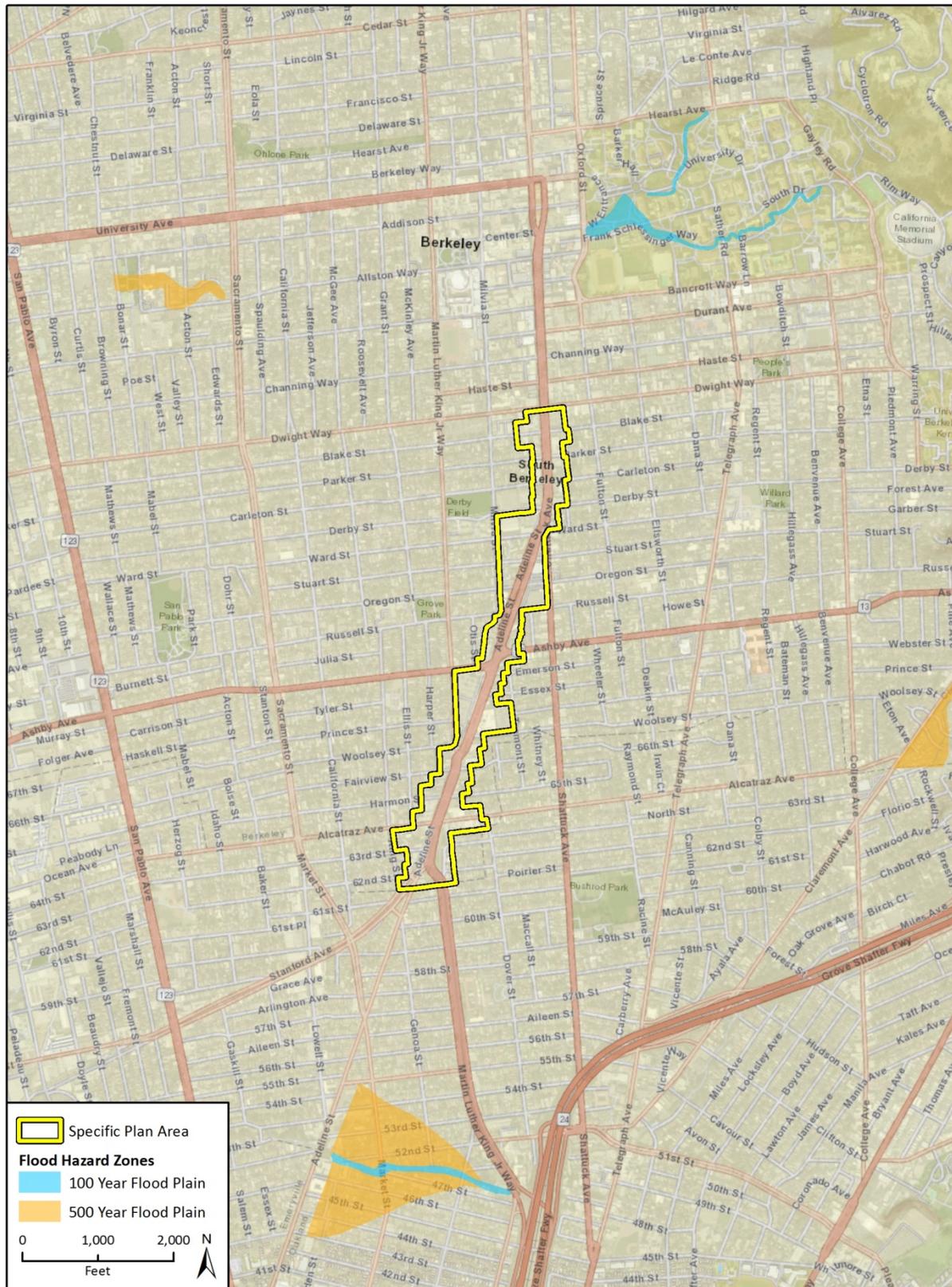
### Federal

#### *Federal Clean Water Act*

In 1972, Congress passed the Federal Water Pollution Control Act, commonly known as the Clean Water Act (CWA), with the goal of “restor[ing] and maintain[ing] the chemical, physical, and biological integrity of the Nation’s waters” (33 U.S.C. § 1251(a)). The CWA directs states to establish water quality standards for all “waters of the United States” and to review and update such standards on a triennial basis. Section 319 mandates specific actions for the control of pollution from non-point sources. The EPA has delegated responsibility for implementation of portions of the CWA, including water quality control planning and control programs, such as the National Pollutant Discharge Elimination System (NPDES) Program, to the State Water Resources Control Board (SWRCB) and the Regional Water Quality Control Boards (RWQCBs).

Section 303(c)(2)(b) of the CWA requires states to adopt water quality standards for all surface waters of the United States based on the water body’s designated beneficial use. Water quality standards are typically numeric, although narrative criteria based upon biomonitoring methods may be employed where numerical standards cannot be established or where they are needed to supplement numerical standards. Water quality standards applicable to the Plan Area are contained in the Water Quality Control Plan for the San Francisco Bay Basin (Basin Plan).

Figure 4.7-2 Flood Hazard Zones in the Vicinity of the Plan Area



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Additional data provided by FEMA, 2017.

FigX Flood Plains

Section 303(d) of the CWA bridges the technology-based and water quality-based approaches for managing water quality. Section 303(d) requires that states make a list of waters that are not attaining standards after the technology-based limits are put into place. For waters on this list (and where the USEPA administrator deems they are appropriate), states are to develop total maximum daily loads (TMDL). TMDLs are established at the level necessary to implement the applicable water quality standards. A TMDL must account for all sources of the pollutants that caused the water to be listed.

Section 404 of the CWA prohibits the discharge of any pollutants into “waters of the United States,” except as allowed by permit. 33 Code of Federal Resources § 328.3(a)(3). Section 404 of the CWA authorizes the U.S. Army Corps of Engineers to issue permits for and regulate the discharge of dredged or fill materials into wetlands or other waters of the United States. Under the CWA and its implementing regulations, “waters of the United States” are broadly defined to consist of rivers, creeks, streams, and lakes extending to their headwaters, including adjacent wetlands.

#### *National Pollutant Discharge Elimination System (NPDES)*

In California, the National Pollutant Discharge Elimination System (NPDES) program is administered by the SWRCB through the nine RWQCBs. The City of Berkeley lies within the jurisdiction of SFBRWQCB (Region 2) and is subject to the waste discharge requirements of the Municipal Regional Stormwater Permit (MRP) (Order No. R2-2015-0049) and NPDES Permit No. CAS612008, which was issued on November 19, 2015 and went into effect on January 1, 2016.

Under Provision C.3 of the MRP, Berkeley is required to use its planning authority to include appropriate source control, site design, and stormwater treatment measures in new development and redevelopment projects to address stormwater runoff pollutant discharges and address increases in runoff flows from new development and redevelopment projects. These requirements are generally reached through the implementation of Low Impact Development (LID) techniques (City of Berkeley 2011).

The NPDES permit requires appropriate LID and Stormwater Treatment technologies in new development and redevelopment projects, in order to mimic the natural hydrology of the lands prior to disturbance. The objective of LID and post-construction BMPs for stormwater is to reduce runoff and mimic a site’s predevelopment hydrology by minimizing disturbed areas and impervious cover and then infiltrating, storing, detaining, evapotranspiring, and/or biotreating stormwater runoff close to its source. LID employs principles such as preserving and recreating natural landscape features and minimizing imperviousness to create functional and appealing site drainage that treats stormwater as a resource, rather than a waste product. Practices used to adhere to these LID principles include measures such as rain barrels and cisterns, green roofs, permeable pavement, preserving undeveloped open space, and biotreatment through rain gardens, bioretention units, bioswales, and planter/tree boxes.

## **State**

#### *State Water Resources Control Board General Construction Permit*

The SWRCB is responsible for developing statewide water quality policy and exercise the powers delegated to the state by the federal government under the Clean Water Act. Construction activities that disturb one or more acres of land that could impact hydrologic resources must comply with the requirements of the SWRCB Construction General Permit

(Order 2012-0006-DWQ). Under the terms of the permit, applicants must file Permit Registration Documents (PRD) with the SWRCB prior to the start of construction. The PRDs include a Notice of Intent, risk assessment, site map, Stormwater Pollution Prevention Plan (SWPPP), annual fee, and a signed certification statement. The PRDs are submitted electronically to the SWRCB via the Storm Water Multiple Application and Report Tracking System website.

Applicants must also demonstrate conformance with applicable BMPs and prepare a Storm Water Pollution Prevention Plan (SWPPP) with a site map that shows the construction site perimeter, existing and proposed buildings, lots, roadways, stormwater collection, and discharge points, general topography before and after construction, and drainage patterns across the city. The SWPPP must list BMPs that would be implemented to prevent soil erosion and discharge of other construction-related pollutants that could contaminate nearby water resources. Additionally, the SWPPP must contain a visual monitoring program, a chemical monitoring program for nonvisible pollutants if there is a failure of the BMPs, and a sediment-monitoring plan if the site discharges directly to a water body listed on the 303(d) list for sediment. Some sites also require implementation of a Rain Event Action Plan. The updated Construction General Permit (2012-0006-DWQ) went into effect on July 17, 2012, and requires applicants to comply with post-construction runoff reduction requirements (SWRCB 2017a).

#### *Porter-Cologne Water Quality Act*

The Porter-Cologne Water Quality Control Act establishes the SWRCB and each RWQCB as the principal agencies for coordinating and controlling water quality in California. Specifically, the Porter-Cologne Act authorizes the SWRCB to adopt, review, and revise policies for all waters of the state (including both surface and groundwater) and directs the RWQCBs to develop regional basin plans.

The SFBRWQCB has the authority to implement water quality protection standards through the issuance of permits for discharges to waters in its jurisdiction. Water quality objectives for receiving waters within Alameda County are specified in the Water Quality Control Plan for the Basin Plan, prepared by the SFBRWQCB in compliance with the federal CWA and the Porter Cologne Act. The principal elements of the Basin Plan are a statement of beneficial water uses protected under the plan; water quality objectives necessary to protect the designated beneficial water uses; and strategies and time schedules for achieving the water quality objectives. Together, narrative and numerical objectives define the level of water quality that shall be maintained in the region. The water quality objectives are achieved primarily through the establishment and enforcement of waste discharge requirements (WDR).

The RWQCBs have primary responsibility for issuing WDRs. The RWQCBs may issue individual WDRs to cover individual discharges or general WDRs to cover a category of discharges. WDRs may include effluent limitations or other requirements that are designed to implement applicable water quality control plans, including designated beneficial uses and the water quality objectives established to protect those uses and prevent the creation of nuisance conditions. Violations of WDRs may be addressed by issuing Cleanup and Abatement Orders or Cease and Desist Orders, assessing administrative civil liability, or seeking imposition of judicial civil liability or judicial injunctive relief.

*State Updated Model Water Efficient Landscape Ordinance (Assembly Bill 1881)*

The updated Model Water Efficient Landscape Ordinance required cities and counties to adopt landscape water conservation ordinances by January 31, 2010 or to adopt a different ordinance that is at least as effective in conserving water as the updated Model Water Efficient Landscape Ordinance (WELO). The City of Berkeley adopted the Bay-Friendly Landscape Ordinance in accordance with this requirement. The ordinance incorporates landscape protocols developed by the Alameda County Waste Management Authority and all parameters in the WELO. The ordinance became effective as of February 1, 2010. In May of 2015, the governor issued Executive Order B-29-15 requiring the state to revise the model WELO to increase water efficiency standards for new and retrofitted landscapes through more efficient irrigation systems, greywater usage, onsite stormwater capture, and by limiting the portion of landscapes that can be covered in turf. The last update to the City's Water Efficient Landscape Ordinance occurred on December 1, 2015.

## Local

*San Francisco Bay Regional Water Quality Control Board*

Regional authority for planning, permitting, and enforcement is delegated to the nine RWQCBs. The regional boards are required to formulate and adopt water quality control plans for all areas in the region and establish water quality objectives in the plans. Berkeley is within the jurisdiction of SFBRWQCB (Region 2).

The SFBRWQCB addresses region-wide water quality issues through the Basin Plan, updated most recently in March 2017. This Basin Plan designates beneficial uses of the state waters in Region 2, describes the water quality that must be maintained to support such uses, and provides programs, projects, and other actions necessary to achieve the standards established in the Basin Plan (SFBRWQCB 2017). The Water Quality Control Policy for the Enclosed Bays and Estuaries of California, as adopted by the SWRCB in 1995, also provides water quality principles and guidelines to prevent water quality degradation and protect the beneficial uses of waters of enclosed bays and estuaries.

*Alameda County Clean Water Program*

The City of Berkeley, along with 13 other incorporated cities in Alameda County has joined with the ACFCD, the Zone 7 Water Agency, and Alameda County in the Clean Water Program (CWP) initiative. Members of the program are regulated waste dischargers under the 2015 NPDES Permit issued by the SFBRWQCB and are responsible for municipal storm drain systems that they own or operate. As part of the permitting process, dischargers must submit a Stormwater Management Plan that describes a framework for management of stormwater discharges during the term of the permit (City of Berkeley 2011).

The City of Berkeley, as a co-permittee under the NPDES permit, is subject to the Provision C.3 requirements for new development and redevelopment projects, including post-construction stormwater management requirements. Provision C.3 requirements are separate from, and in addition to, requirements for erosion and sediment control and for pollution prevention measures during construction. All new development or redevelopment projects that create or replace 10,000 square feet of impervious surfaces or 5,000 square feet or more of impervious surface for special land use categories (i.e., uncovered parking lots, restaurants, auto service facilities, and gasoline stations) are considered to be "regulated projects" and are required to implement site design measures, source control measures, and stormwater treatment measures to reduce stormwater pollution during

operation of the project. The permit specifies methods to calculate the required size of treatment devices. All projects that create and/or replace 2,500 square feet but less than 10,000 square feet of impervious surface are required to meet site design requirements in Provision C.3.i of the MRP.

Regulated projects subject to stormwater treatment measures would require the implementation of LID features, such as harvesting and reuse, bioretention areas, pervious paving, green roofs, flow-through planters, tree well filters, and media filters. Systems must be designed to treat stormwater runoff volume equal to the 85th percentile 24-hour storm event, 80 percent of the annual runoff from the site, a flow design of runoff from a rain event equal to 0.2 inches/hour intensity, or an equivalent method (City of Berkeley 2011).

The Plan Area is shown as a solid white area on CWP's Hydromodification Management Susceptibility Map (Alameda County 2007). According to the CWP, solid white designates the land area between the hills and the tidal zone. The hydromodification standard and all associated requirements apply to projects in solid white area unless a project proponent demonstrates that all project runoff will flow through fully hardened channels. Short segments of engineered earthen channels (length less than 10 times the maximum width of trapezoidal cross-section) can be considered resistant to erosion if located downstream of a concrete channel of similar or greater length and comparable cross-section dimensions. Plans to restore a hardened channel may affect the hydromodification standard applicability in this area. Only a small portion of the city, along the Codornices Creek and in the Berkeley Hills, is subject to hydromodification measures, as determined by the CWP's Hydromodification Management Susceptibility Map. This would require projects in the hydromodification area that create and/or replace one acre or more of impervious surface to match post-development stormwater flow rates and volumes to pre-development conditions.

*City of Berkeley General Plan: A Guide for Public Decision-Making (2001)*

Applicable General Plan policies and actions related to hydrology and water quality are included in the Environmental Management Element and the Disaster Preparedness and Safety Element. Environmental Management Element Goal EM-4 promotes water conservation, improving water quality and restoring creeks. The Disaster Preparedness and Safety Element identifies areas of potential hazards in the city and includes goals and policies to improve safety with respect to natural disasters and environmental hazards such as flooding.

#### ENVIRONMENTAL MANAGEMENT ELEMENT POLICIES AND ACTIONS

**Policy EM-5: "Green" Buildings.** Promote and encourage compliance with "green" building standards.

**Policy EM-23: Water Quality in Creeks and San Francisco Bay.** Take action to improve water quality in creeks and San Francisco Bay.

**Action EM-23D.** Restore a healthy freshwater supply to creeks and the Bay by eliminating conditions that pollute rainwater, and by reducing impervious surfaces and encouraging use of swales, cisterns, and other devices that increase infiltration of water and replenishment of underground water supplies that nourish creeks.

**Policy EM-24: Sewers and Storm Sewers.** Protect and improve water quality by improving the citywide sewer system.

**Action EM-24E.** Ensure that new development pays its fair share of improvements to the storm sewerage system necessary to accommodate increased flows from the development.

**Policy EM-25: Groundwater.** Protect local groundwater by promoting enforcement of state water quality laws that ensure non-degradation and beneficial use of groundwater.

**Policy EM-26: Water Conservation.** Promote water conservation through City programs and requirements.

**Policy EM-27: Creeks and Watershed Management.** Whenever feasible, daylight creeks by removing culverts, underground pipes, and obstructions to fish and animal migrations.

**Action EM-27D.** Restrict development on or adjacent to existing open creeks. When creeks are culverted, restrict construction over creeks and encourage design solutions that respect or emphasize the existence of the creek under the site.

**Action EM-27G.** Regulate new development within 30 feet of an exposed streambed as required by the Creeks Ordinance and minimize impacts on water quality and ensure proper handling of stormwater runoff by requiring a careful review of any public or private development or improvement project proposed in water sensitive areas.

**Action EM-27 H.** Consider amending the Creek Ordinance to restrict parking and driveways on top of culverts and within 30 feet of creeks.

#### DISASTER PREPAREDNESS AND SAFETY ELEMENT POLICIES AND ACTIONS

**Policy S-26: Flood Hazards Mitigation.** Reduce existing flood hazards in Berkeley.

**Action S-26A.** Conduct periodic evaluation of reservoir safety and undertake actions necessary to mitigate the potential for dam failure.

**Action S-26B.** Continue to rehabilitate the City storm drain system to reduce local flooding caused by inadequate storm drainage.

**Action S-26C.** Continue and significantly strengthen programs promoting storm drain maintenance by public and private sectors.

**Action S-26D.** Continue to work with the East Bay Municipal Utility District to complete the planned seismic improvements to the Berryman Reservoir.

**Policy S-27: New Development.** Use development review to ensure that new development does not contribute to an increase in flood potential.

**Action S-27A.** Regulate development in the Waterfront flood-prone areas consistent with the Berkeley Waterfront Specific Plan.

**Action S-27B.** Ensure that new development conforms to requirements and guidelines of the National Flood Insurance Program (NFIP).

**Action S-27C.** Require new development to provide for appropriate levels of on-site detention and/ or retention of storm water.

**Action S-27D.** Regulate development within 30 feet of an exposed streambed as required by the Preservation and Restoration of Natural Watercourses (Creeks) Ordinance.

**Policy S-28: Flood Insurance.** Reduce the cost of flood insurance to property owners in the City.

**Action S-28A.** Identify, prioritize, and implement activities necessary to qualify for a high Community Rating System (CRS) evaluation under the National Flood Insurance Program (NFIP).

**Action S-28B.** Update and revise flood maps for the city.

**Action S-28C.** Incorporate FEMA guidelines and suggested activities into City plans and procedures for managing flood hazards.

#### *Berkeley Municipal Code*

Four chapters of the City of Berkeley Municipal Code (BMC) contain directives pertaining to hydrology and water quality issues, as explained in the following paragraphs:

- **Preservation and Restoration of Natural Watercourses – Chapter 17.08.** The purpose of this chapter is to regulate: (1) building over or near culverted creeks; (2) building near open creeks; (3) the rehabilitation and restoration of natural waterways; and (4) the management of watersheds.
- **Stormwater Management and Discharge Control – Chapter 17.20.** This chapter provides the stormwater requirements for projects conducted within the City of Berkeley and is consistent with the requirements of the San Francisco RWQCB and the MRP permit. The purpose of this chapter is to ensure the health, safety, and general welfare of the City of Berkeley’s citizens by eliminating non-stormwater discharges to the City’s storm drain system and by reducing the contamination of stormwater by pollutants to the maximum extent practicable.
- **Standards of Construction in Special Flood Hazard Zones – Chapter 17.12.** The ordinance also ensures that property owners construct new and substantially improved buildings in the 100-year floodplain in accordance with the National Flood Insurance Program’s goals to protect life and property. Section 500 of this chapter addresses standards of construction in special flood hazard areas. Section 530 addresses coastal high hazard areas vulnerable to future sea level rise.
- **Grading, erosion and sediment control requirements – Section 21.40.270.** This requires projects to comply with all grading, erosion and sediment control regulations on file in the Public Works Department.

### 4.7.2 Impact Analysis

#### a. Methodology and Significance Thresholds

Assessment of impacts is based on review of site information and conditions and City information regarding hydrology and water quality issues. In accordance with Appendix G of the *State CEQA Guidelines*, a project would result in a significant impact if it would:

1. Violate any water quality standards or waste discharge requirements
2. Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level

3. Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site
4. Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site
5. 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
6. Otherwise substantially degrade water quality
7. Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map
8. Place within a 100-year flood hazard area structures which would impede or redirect flood flows
9. Expose people or structures to a significant risk of loss, injury, or death involving flooding, including flooding as a result of the failure of a levee or dam
10. Result in inundation by seiche, tsunami, or mudflow

#### b. Project Impacts and Mitigation Measures

**Threshold 1:** Would the Specific Plan violate any water quality standards or waste discharge requirements?

**Threshold 6:** Would the Specific Plan otherwise substantially degrade water quality?

**IMPACT HYD-1** FUTURE DEVELOPMENT UNDER THE SPECIFIC PLAN WOULD INVOLVE GROUND-DISTURBING ACTIVITIES AND THE USE OF HEAVY MACHINERY THAT COULD RELEASE MATERIALS, INCLUDING SEDIMENTS AND FUELS, WHICH COULD ADVERSELY AFFECT WATER QUALITY. IN ADDITION, OPERATION OF POTENTIAL FUTURE DEVELOPMENT COULD ALSO RESULT IN DISCHARGES TO STORM DRAINS THAT COULD BE CONTAMINATED AND AFFECT DOWNSTREAM WATERS. HOWEVER, COMPLIANCE WITH REQUIRED PERMITS AND EXISTING REGULATIONS, AND IMPLEMENTATION OF BEST MANAGEMENT PRACTICES CONTAINED THEREIN, WOULD ENSURE THAT POTENTIAL WATER QUALITY IMPACTS WOULD BE LESS THAN SIGNIFICANT.

#### Construction Impacts

Construction activities associated with development in the Plan Area would have the potential to cause soil erosion from exposed soil, an accidental release of hazardous materials used for equipment such as vehicle fuels and lubricant, or temporary siltation from storm water runoff. Soil disturbance would occur during excavation for proposed building foundations, demolition of existing buildings, and grading for improvements to public spaces and landscaped areas or development projects. However, future development within the Plan Area would be required to comply with State and local water quality regulations designed to control erosion and protect water quality during construction. This includes compliance with the requirements of the SWRCB Construction General Permit, which requires preparation and implementation of a SWPPP for projects that disturb one acre or more of land. The SWPPP must include erosion and sediment control BMPs that would meet or exceed measures required by the Construction General Permit, as well as those that control hydrocarbons, trash, debris, and other potential construction-related pollutants. Construction BMPs would include scheduling inlet protection, silt fencing, fiber rolls,

stabilized construction entrances, stockpile management, solid waste management, and concrete waste management. Post-construction stormwater performance standards are also required to specifically address water quality and channel protection events. Implementation of these BMPs would prevent or minimize environmental impacts and ensure that discharges during the construction phase of new projects within the Plan Area would not cause or contribute to the degradation of water quality in receiving waters.

In addition, BMC Chapter 21.40 requires project applicants to comply with grading, erosion, and sediment control regulations on file in the Public Works Department and BMC Chapter 17.20 requires BMPs to be implemented to minimize non-stormwater discharges from the site during construction (City of Berkeley 2016). Compliance with local and State regulatory requirements and implementation of construction BMPs would minimize discharges during the construction phase of future development projects allowed by the proposed Specific Plan and would not result in the degradation of water quality in receiving waters; therefore, construction-related water quality impacts would be less than significant.

## Operational Impacts

The Plan Area is currently fully urbanized; therefore, it is almost entirely covered with impervious surfaces except for landscaped areas. Development under the Specific Plan would involve infill and redevelopment of existing sites. Future development would be required to be implemented in compliance with existing programs and permits, including the BMC and the Municipal Regional Stormwater NPDES Permit (No. CAS612008). Development design would include BMPs to avoid adverse effects associated with stormwater runoff quality. Specifically, proposed development under the Specific Plan would be required to implement LID Measures and on-site infiltration, as required under the C.3 provisions of the Municipal Regional Stormwater Permit (MRP). Implementation of LID measures would reduce water pollution from stormwater runoff as compared to existing conditions.

### *Water Quality*

Implementation of development envisioned in the proposed Specific Plan would result in a significant impact if activities would conflict with applicable water quality permits or waste discharge requirements. Future development under the proposed Specific Plan would be subject to multiple permits and approvals associated with the protection of water quality, as discussed below.

The City of Berkeley is responsible for enforcing the requirements of the Municipal Regional Stormwater Permit (MRP). Compliance with the MRP will include operational and maintenance control measures, or BMPs and construction-related BMPs. Provisions specified in the MRP that affect construction projects generally include but is not limited to Provision C.3 (New Development and Redevelopment), Provision C.6 (Construction Site Control), and Provision C.15 (Exempted and Conditionally Exempted Discharges), as described below. Future projects in the Plan Area would be required to comply with all provisions of the MRP, including those listed below:

- **Provision C.3** requires LID techniques be utilized to employ appropriate source control, site design, and stormwater treatment measures in new development and redevelopment projects; to address stormwater runoff pollutant discharges; and to prevent increases in runoff flows from new development and redevelopment projects by mimicking a site's predevelopment hydrology. This is to be accomplished by employing principles such as minimizing disturbed areas and imperviousness, and preserving and

recreating natural landscape features, in order to “create functional and appealing site drainage that treats stormwater as a resource, rather than a waste product” (SFBRWQCB 2015). These LID practices, as well as other provisions and BMPs specified in the MRP, may require long-term operational inspections and maintenance activities to ensure the effective avoidance of significant adverse impacts associated with water quality degradation.

- **Provision C.6** requires implementation of a construction site inspection and control program at all construction sites and an Enforcement Response Plan to prevent construction-related discharges of pollutants into storm drains. Inspections shall confirm implementation of appropriate and effective erosion and other BMPs by construction site operators/developers, and Permittee reporting shall be used to confirm and demonstrate the effectiveness of its inspections and enforcement activities to prevent polluted construction site discharges into storm drains.
- **Provision C.15** exempts specified unpolluted non-stormwater discharges and to conditionally exempt non-stormwater discharges that are potential sources of pollutants. In order for non-stormwater discharges to be conditionally exempted, the Permittees must identify appropriate BMPs, monitor the non-stormwater discharges where necessary, and ensure implementation of effective control measures to eliminate adverse impacts to waters of the state consistent with the discharge prohibitions of the Order.

Water quality in stormwater runoff is regulated locally by the City. Provision C.3 of the MRP addresses post-construction stormwater requirements for new development and redevelopment projects that add and/or replace 10,000 square feet or more of impervious area or special land use categories that create and/or replace 5,000 square feet of impervious surfaces, such as auto service facilities, retail gas stations, restaurants, and uncovered parking lots. These “regulated” projects are required to meet certain criteria: 1) incorporate site design, source control, and stormwater treatment measures into the project design; 2) minimize the discharge of pollutants in stormwater runoff and non-stormwater discharge; and 3) minimize increases in runoff flows as compared to pre-development conditions. Additionally, projects in Berkeley which drain to a natural water body must also construct and maintain hydromodification measures to ensure that estimated post-project runoff peaks and durations do not exceed estimated pre-project peaks and duration. LID methods are the primary mechanisms for implementing such controls.

Further, implementation of the following Specific Plan policy would integrate stormwater management elements and Bay-friendly landscaping into the public open space areas, which would minimize impacts of contaminated stormwater in the Plan Area and reduce the potential for violations of water quality standards or waste discharge requirements:

*Specific Plan Public Space Policy 7.6: Landscape-Based Stormwater Management and Bay-Friendly Landscaping.*

Under this policy of the Specific Plan, key features of the open space network that would protect water quality in the Plan Area include:

- Integrate landscape-based stormwater management elements into the design of projects that create new or improve existing plazas, parks, or other open spaces.
- Integrate landscape-based stormwater management elements into streetscape improvements associated with the long-term right-of-way concept for the Adeline

corridor, including in medians, landscape buffers, and sidewalks with street trees, landscape strips, or planters.

- Encourage or require new and redevelopment adjacent to public spaces to integrate green infrastructure into adjacent streetscape improvements and public open spaces that the private development may construct. The green infrastructure could also be designed to reuse stormwater from the development project for landscaping or similar purposes.

Compliance with the General Plan goals and policies, the BMC, and the proposed Specific Plan strategies, policies, guidelines, and standards would increase infiltration of stormwater, decrease stormwater runoff, and would reduce the risk of water contamination within the Plan Area from operation of new developments to the maximum extent practicable. Therefore, the Specific Plan would not violate water quality standards or waste discharge requirements, would not significantly contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff, and would not substantially degrade water quality. Impacts would be less than significant.

### Mitigation Measures

No mitigation is required.

**Threshold 2:** Would the Specific Plan substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level?

**IMPACT HYD-2 CONSTRUCTION OF FUTURE DEVELOPMENT UNDER THE SPECIFIC PLAN WOULD NOT SUBSTANTIALLY DEplete GROUNDWATER SUPPLIES OR INTERFERE SUBSTANTIALLY WITH GROUNDWATER RECHARGE SUCH THAT THERE WOULD BE A NET DEFICIT IN AQUIFER VOLUME OR A LOWERING OF THE LOCAL GROUNDWATER TABLE. FURTHER, IMPLEMENTATION OF LOW IMPACT DEVELOPMENT MEASURES AND ON-SITE INFILTRATION REQUIRED UNDER THE C.3 PROVISIONS OF THE MRP, COMPLIANCE WITH THE GENERAL PLAN GOALS AND POLICIES, THE BERKELEY MUNICIPAL CODE, AND THE SPECIFIC PLAN STRATEGIES, POLICIES, GUIDELINES, AND STANDARDS WOULD INCREASE THE POTENTIAL FOR GROUNDWATER RECHARGE. IMPACTS WOULD BE LESS THAN SIGNIFICANT.**

Future development under the proposed Specific Plan would not use or deplete groundwater resources. Water supply for the Plan Area is provided by the East Bay Municipal Water District. The groundwater aquifer beneath Berkeley is not currently used for water storage or drinking water supply. Therefore, future development under the proposed Specific Plan would not include installation of new groundwater wells or use of groundwater from existing wells.

The Plan Area is fully urbanized, and development associated with the proposed Specific Plan would consist of intensification through redevelopment that could increase the amount of impervious areas that would interfere with groundwater recharge. However, proposed development under the Specific Plan would be required to comply with Provision C.3 of the MRP which promotes infiltration. Implementation of LID measures would increase absorption of stormwater runoff and the potential for groundwater recharge.

Therefore, development under the proposed Specific Plan would not result in a net deficit in aquifer volume or a lowering of the groundwater table. Impacts would be less than significant.

### Mitigation Measures

No mitigation is required.

<b>Threshold 3:</b>	Would the Specific Plan substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site?
<b>Threshold 4:</b>	Would the Specific Plan substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site?
<b>Threshold 5:</b>	Would the Specific Plan 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?

**IMPACT HYD-3** FUTURE DEVELOPMENT UNDER THE SPECIFIC PLAN WOULD NOT SUBSTANTIALLY ALTER THE EXISTING DRAINAGE PATTERN OF THE PLAN AREA, INCLUDING THROUGH THE ALTERATION OF THE COURSE OF A STREAM OR RIVER, IN A MANNER WHICH WOULD RESULT IN SUBSTANTIAL EROSION OR SILTATION ON- OR OFF-SITE OR SUBSTANTIALLY INCREASE THE RATE OR AMOUNT OF SURFACE RUNOFF IN A MANNER WHICH WOULD RESULT IN FLOODING OR EXCEED THE CAPACITY OF STORMWATER DRAINAGE SYSTEMS. IMPACTS RELATED TO DRAINAGE PATTERNS WOULD BE LESS THAN SIGNIFICANT.

The Plan Area is urbanized, largely consisting of impervious surfaces, including structures, parking lots, and roadways. Stormwater runoff generated by new development or redevelopment under the proposed Specific Plan would be collected by drainage inlets and conduits and conveyed to the San Francisco Bay, as under current conditions. As discussed in Setting above, there are no surface waters within the Plan Area and the Plan Area is not located within a FEMA designated Flood Hazard Area.

Site-specific drainage pattern alterations could occur with development that could be facilitated by the Specific Plan, but such alterations would not result in substantial adverse effects. The Plan Area is largely covered with impervious surfaces, and development under the Specific Plan would not introduce new impervious areas to the extent that the rate or amount of surface runoff would substantially increase. Development that could be facilitated by Specific Plan buildout would not introduce substantial new surface water discharges and would not result in flooding on- or off-site.

#### *Runoff Quantity*

As mentioned under Impact HYD-1 above, MRP-regulated projects within the Plan Area must treat 80 percent or more of the volume of annual runoff for volume-based treatment measures or 0.2-inch per hour for flow-based treatment measures. Furthermore, projects that create or replace 2,500 square feet or more, but less than 10,000 square feet, of impervious surface must implement site design measures to reduce stormwater runoff.

All regulated projects within the Plan Area must prepare a Stormwater Management Plan (SWMP) that includes the post-construction BMPs that control pollutant levels. All SWMPs

would be reviewed by the City of Berkeley prior to the issuance of building permits. In areas within the city that have soils with low permeability and/or area with high water tables, BMPs that do not rely on infiltration are most appropriate.

Further, implementation of Specific Plan Policy 7.6 above under Impact HYD-1 would increase permeability of the Plan Area, thereby increasing infiltration and reducing the potential for erosion and flooding.

Compliance with the General Plan goals and policies, the BMC, and the proposed Specific Plan strategies, policies, guidelines, and standards would increase infiltration of stormwater and reduce stormwater runoff from operation of new developments to the extent practicable. Therefore, development that could be facilitated by the proposed Specific Plan would not substantially alter the existing drainage pattern of the site or area or alter the course of any stream or river, would not result in erosion or siltation, and would not substantially increase the rate of surface runoff in a manner which would result in flooding on- or off-site or exceed capacity of a stormwater system. Impacts would be less than significant.

### Mitigation Measures

No mitigation is required.

<b>Threshold 7:</b>	Would the Specific Plan place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?
<b>Threshold 8:</b>	Would the Specific Plan place within a 100-year flood hazard area structures which would impede or redirect flood flows?
<b>Threshold 9:</b>	Would the Specific Plan expose people or structures to a significant risk of loss, injury, or death involving flooding, including flooding as a result of the failure of a levee or dam?
<b>Threshold 10:</b>	Would the Specific Plan result in inundation by seiche, tsunami, or mudflow?

**IMPACT HYD-4 DEVELOPMENT UNDER THE PROPOSED SPECIFIC PLAN WOULD NOT EXPOSE PEOPLE OR STRUCTURES TO OTHER FLOOD HAZARDS SUCH AS TSUNAMIS, SEICHES, OR FLOODING INCLUDING FLOODING AS THE RESULT OF DAM OR LEVEE FAILURE. IMPACTS WOULD BE LESS THAN SIGNIFICANT.**

As shown on Figure 4.7-2, the Plan Area is not located within a FEMA designated flood hazard area. The Plan Area is not located in a dam or tsunami inundation area and is not located near a large water body or in proximity to the San Francisco Bay such that a seiche could affect the Plan Area (City of Berkeley 2001b). Therefore, implementation of future development under the Specific Plan would not introduce new flood-related hazards.

Therefore, development under the proposed Specific Plan would not place housing and other structures within FEMA-designated flood hazard areas, would not impede or redirect flood flows, would not expose people or structures to significant risk of loss, injury, or death involving flooding as a result of the failure of a levee or dam, and would not result in inundation by seiche, tsunami, or mudflow. Impacts would be less than significant.

### Mitigation Measures

No mitigation is required.

### c. Cumulative Impacts

Development under the proposed Specific Plan in combination with future development in Berkeley could increase stormwater runoff such that water quality impacts could occur. However, overall, implementation of the proposed Specific Plan would not substantially increase the total area of impervious surface in the Plan Area; would not result in substantial groundwater use or affect groundwater recharge, and would not modify the course of an existing stream or river. Required conformance with State and local policies and regulations would reduce hydrology and water quality impacts associated with future development. New development and redevelopment within the City would be subject to City, State, and federal policies and ordinances, design, guidelines, the Zoning Code, and other applicable regulatory requirements that reduce impacts related to water quality on a project-by-project basis.

All development in Berkeley would be subject to similar regulatory requirements and be required to comply with various City regulations (such as the BMC), as well as numerous water quality regulations that control the quality and quantity of construction related and operation discharge of pollutants in stormwater. The water quality regulations implemented by the SFBRWQCB take a basin-wide approach and consider water quality impairment in a regional context. For example, the NPDES Construction Permit ties receiving water limitations and basin plan objectives to terms and conditions of the permit, and the MRP encompasses all of the surrounding municipalities to manage stormwater systems and be collectively protective of water quality.

In addition, the implementation of goals and policies under the proposed Specific Plan, such as those specified under Public Space Policy 7.6, would further reduce potential cumulative impacts to water quality. Policies and regulatory requirements described above would avoid significant impacts to water quality and reduce stormwater runoff with future development. Therefore, future development in Berkeley in combination with development under the proposed Specific Plan would not result in a significant cumulative impact with respect to hydrology and water quality. Cumulative impacts would be less than significant (not cumulatively considerable).

## 4.8 Land Use and Planning

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This section describes the existing land uses in the Plan Area as well as the policy and regulatory framework that guides development in this area. Additionally, this section analyzes the Specific Plan's consistency with existing plans and policies.

### 4.8.1 Setting

#### a. Existing Land Uses and Development Pattern in the Specific Plan Area

The Plan Area is located in the southern portion of Berkeley and extends approximately 1.3 miles north from the Berkeley/Oakland border along Adeline Street and Shattuck Avenue to the intersection of Shattuck Avenue and Dwight Way. The Plan Area encompasses approximately 86 acres of land, including 38 acres (44 percent) of public right-of-way (e.g. streets and sidewalks) used for multiple modes of transportation. The streets generally consist of a grid of arterial, collector and local streets that intersect with Adeline Street at an angle (since Adeline Street runs diagonally in a north-east and south-west direction through South Berkeley). The section of Shattuck Avenue in the Plan Area and the entirety of Adeline Street are wide (180 feet at its widest point), a legacy of having formerly been the location for tracks of the Key Route streetcar system and then the alignment of the Bay Area Rapid Transit (BART) subway in the late 1960s and early 1970s.

The remaining land consists of a wide range of commercial, civic, cultural and residential land uses as well as the Ashby BART Station Area, a regional transit facility, located in the central/southern portion of the Plan Area. Approximately 19 acres are developed with commercial uses, 11 acres are developed with public, civic, or institutional uses, 9 acres are developed with residential uses, and the remaining area is developed with parking, warehouse or mixed uses, or is vacant. Most of the land surrounding the Plan Area is dedicated to residential uses and is characterized by well-established neighborhoods with a mix of single-family and small multi-family developments. Refer to Section 2, *Project Description*, for additional details regarding existing land uses in and surrounding the Plan Area.

#### b. Regulatory Setting

##### Regional

###### *Plan Bay Area*

Plan Bay Area 2040 was adopted on July 26, 2017. It is a limited and focused update of the region's previous integrated Regional Transportation Plan/ Sustainable Communities Strategy (RTP/SCS), Plan Bay Area, adopted in 2013. Plan Bay Area 2040 builds upon the growth pattern and strategies developed in the original Plan Bay Area but with updated planning assumptions that incorporate recent economic, demographic and financial trends (ABAG and MTC 2017a).

In 2008, MTC and ABAG initiated a regional effort (FOCUS) to link local planned development with regional land use and transportation planning objectives. Through this initiative, local governments identified Priority Development Areas (PDAs). The PDAs form the implementing framework for Plan Bay Area. The PDAs are areas along transportation corridors which are served by public transit that provide opportunities for transit-oriented

development. Over two-thirds of all regional growth by 2040 is expected to occur within PDAs. The PDAs throughout the Bay Area are expected to accommodate 78 percent (or over 509,000 units) of new housing and 62 percent (or 690,000) of new jobs.

Designated PDAs in Berkeley include: University Avenue, San Pablo Avenue, Telegraph Avenue (which was later amended to include the Southside area), Adeline Street, South Shattuck Avenue and Downtown. The Adeline Specific Plan Area includes two separate PDAs: the Adeline Street PDA and the South Shattuck PDA. These PDAs were selected by the City of Berkeley because they provide opportunities for infill development consistent with the objectives of Plan Bay Area. While ABAG and MTC approved the City's designation of the Plan Area as a PDA, all future planning and regulatory decisions for the area remain under the authority of the City of Berkeley.

## Local

### *City of Berkeley General Plan*

Adopted in 2001, the Berkeley General Plan is a long-range statement of policies for the development and preservation of Berkeley.<sup>1</sup> The General Plan identifies seven major goals: 1) Preserve Berkeley's unique character and quality of life; 2) Ensure that Berkeley has an adequate supply of decent housing, living wage jobs, and businesses providing basic goods and services; 3) Protect local and regional environmental quality; 4) Maximize and improve citizen participation in municipal decision-making; 5) Create a sustainable Berkeley; 6) Make Berkeley a disaster-resistant community, that can survive, recover from, and thrive after a disaster; and 7) Maintain Berkeley's infrastructure, including streets, sidewalks, buildings, and facilities; storm drains and sanitary sewers; and open space, parks, pathways, and recreation facilities.

The Plan's goals are implemented through decisions and actions consistent with the objectives policies and actions of each of the nine Elements: Land Use, Transportation, Housing, Disaster Preparedness & Safety, Open Space & Recreation, Environmental Management, Economic Development and Employment, Urban Design & Preservation and Citizen Participation. The General Plan explicitly recognizes that given its broad scope, "inherent tensions exist between Plan objectives and policies that must be balanced against one another through the decision-making process on particular development and land use decisions."<sup>2</sup>

The Land Use Element of the City's General Plan includes goals, policies and actions that support context-sensitive infill development, historic preservation, transit-oriented development, mobility and access that prioritizes alternative modes of transportation, "complete neighborhoods" that are well-served by a balance of commercial, community-serving/institutional and residential uses, and zoning changes to incentivize affordable housing.

The Land Use Element also categorizes areas in Berkeley into different land use classifications and includes a Land Use Diagram that maps these classifications. As noted specifically in the Land Use Element, the Diagram "depicts the general distribution, location, and density of land uses in Berkeley based upon the policies of the General Plan and

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<sup>1</sup> The City of Berkeley Housing Element of the General Plan was last updated in April 2015. Unlike other General Plan elements, Berkeley's Housing Element is updated every 8 years, according to requirements of the California Housing and Community Development Department.

<sup>2</sup> City of Berkeley General Plan (2001), p.I-2.

existing land uses” but is not intended to portray the specific use or other development regulations of each parcel of land, which is determined by the City’s Zoning Ordinance. The General Plan Land Use Classifications found in the Plan Area are described below and shown on Figure 2-3 in Section 2, *Project Description*:

- Nearly two-thirds of the Plan Area is designated with the **Avenue Commercial** land use classification. These areas are typically located on main arterials and have access to public transit. Appropriate uses for these areas include: local-serving and regional-serving commercial, residential, office, community service, and institutional. According to the General Plan Land Use Element, building intensity in the Avenue Commercial district will generally range from a Floor Area Ratio (FAR) of less than 1.0 to a FAR of 4.0. Population density will generally range from 44 to 88 persons per acre.
- Almost one-quarter of the Plan Area (south of Fairview Street) is designated as **Neighborhood Commercial**. According to the Land Use Element, these areas are typically located on two-lane streets with on-street parking and transit service. Appropriate uses for these areas include local-serving commercial, mixed-use and institutional development. The maximum allowed FAR is 3.0, and existing buildings range from an FAR of less than one to an FAR of 3.0. Population density will generally range from 44 to 88 persons per acre.
- The remainder of the Plan Area (approximately 13 percent) is designated as **Medium Density Residential**. These areas typically include a mix of small- to medium-sized multi-family structures and single-family residences, with building intensities ranging from 20 to 40 dwelling units per net acre, and the population density will generally range from 44 to 88 persons per acre. These parcels are located at the eastern and western edges of the Plan Area and do not front directly on Shattuck Avenue or Adeline Street. They are located between Blake and Carleton, Ward and Oregon and Harmon and 62nd Streets.

Other applicable General Plan policies are discussed in other sections of this EIR including:

- Policies from the Urban Design and Preservation Element are discussed in Section 4.3, *Cultural Resources*.
- Policies from the Environmental Management Element are discussed in Sections 4.1, *Air Quality*; 4.5, *Greenhouse Gas Emissions*; 4.6 *Hazards and Hazardous Materials*; 4.9 *Noise*; 4.11, *Public Services and Recreation*; and 4.13, *Utilities and Service Systems*.
- Policies from the Open Space Element are discussed in Section 4.11, *Public Services and Recreation*.
- Policies from the Transportation Element and associated Bicycle Plan and Pedestrian Plan are discussed in Section 4.12, *Transportation and Traffic*.

#### *City of Berkeley 2015-2023 Housing Element*

The City of Berkeley Housing Element serves as the City’s framework for housing goals, policies, and detailed programs for meeting existing and future housing needs and for increasing affordable housing opportunities. The current 2015-2023 Housing Element addresses the planning period of January 31, 2015 to January 31, 2023 as required by the State Housing Element Law. The Housing Element guides decisions to facilitate the development, rehabilitation, and availability of housing in Berkeley. Details and policies from the Housing Element are discussed in Section 4.10, *Population and Housing*.

### *City of Berkeley Climate Action Plan (2009)*

Adopted in 2009, the Berkeley Climate Action Plan (CAP) outlines a vision for a more sustainable Berkeley and addresses policies and actions for transportation, energy, waste, community engagement and climate adaptation. Chapter 3, Sustainable Transportation and Land Use, of the CAP presents a vision that “cycling, walking, public transit, and other sustainable modes of transportation become mainstream.” This chapter has a goal to “Increase density along transit corridors” and policy to “encourage the development of housing (including affordable housing) retail services, and employment centers in areas of Berkeley best served by transit.” Other CAP goals and policies relevant to the Specific Plan are discussed in more detail in Section 4.5, *Greenhouse Gas Emissions*.

### *City of Berkeley Resiliency Strategy*

The City’s Resiliency Strategy, released in 2016, identifies goals and actions to improve the ability of the community to survive, adapt, and thrive through acute shock or chronic challenges including earthquakes, wildfires, and climate change. The six goals include:

1. Build a Connected and Prepared Community
2. Accelerate Access to Reliable and Clean Energy
3. Adapt to the Changing Climate
4. Advance Racial Equity
5. Excel and Working Together within the City Government to Better Serve the Community
6. Build Regional Resilience

### *Area Plans*

Two area plans, the South Berkeley Area Plan (adopted in 1990) and the South Shattuck Avenue Strategic Plan (adopted in 1998), cover larger geographic areas that partially include the Plan Area. The South Berkeley Area Plan (SBAP) covers the area bounded by Dwight Way to the north, Shattuck Avenue to the east, San Pablo Avenue to the west and the Berkeley-Oakland border to the south. The SBAP expresses two overarching goals: “the retention and encouragement of the existing and vital Black community, and the revitalization of the community’s economic base.” The SBAP includes the following seven chapters or Elements:

- The Economic Development Element emphasizes business retention while attracting new businesses to expand South Berkeley’s community and regional serving enterprises.
- The Housing Element seeks to preserve housing quality and affordability for low and moderate income tenants and homeowners.
- The Land Use Element identifies Adeline as the “major commercial corridor in South Berkeley” and includes policies that encourage mixed-use development; promote pedestrian activity and attractive streetscapes.
- The Open Space Element advocates improved programming, maintenance and security at existing open space and recreation facilities.
- The Historic Element stresses preservation and enhancement of the existing community and preservation of historically valuable buildings.

- The Community Resources Element advocates for improved community and social services by improving links between community organizations, churches, social services, and other resources.
- The Environmental/Public Facilities Element addresses transportation, infrastructure and hazardous materials management issues.

The South Shattuck Avenue Strategic Plan (SSSP) addresses properties along Shattuck Avenue between Dwight Way to the north and Ashby Avenue to the south, and between Milvia Street to the west and Ellsworth Street to the East. The SSSP was intended to build upon the goals of the SBAP. The SSSP is organized into these four subject areas:

- **Economic Development:** Identify opportunity sites and desirable, acceptable, and undesirable business types.
- **Urban Design:** Promote pedestrian orientation, an enhanced sense of place, and efforts to enhance the visual quality of the area to improve the vibrancy of the neighborhood.
- **Residential Blight Abatement:** To counteract neglected and unsightly properties, promote both enforcement and property owner assistance to improve existing conditions and prevent future blight.
- **Transportation:** Improve pedestrian access, proactively address parking needs, direct non-local traffic away from residential areas, and support alternative modes of transportation.

#### *City of Berkeley Zoning Ordinance*

The General Plan, area plans, and other citywide plans are implemented through the Zoning Ordinance and other City ordinances. The City's Zoning Ordinance and associated Zoning Maps set forth specific zoning districts and codify development standards that apply to each district. There are four zoning districts within the Plan Area. Approximately 87 percent of the parcels in the Plan Area are zoned South Area Commercial (C-SA). Adopted in 1999 as an implementation measure of the SBAP, the C-SA zoning designation applies to parcels along Sacramento Street, Shattuck Avenue (south of Dwight Way), and Adeline Street, as well as sections of Ashby and Alcatraz Avenues (where they intersect with Adeline).

The remaining parcels in the Plan Area are zoned Restricted Multiple-Family Residential (R-2A), Restricted Two-Family Residential (R-2), and Multiple-Family Residential (R-3). Figure 2-4 in Section 2, *Project Description* shows the zoning designations in the Plan Area, and these zoning districts are described further below.

- **Commercial - South Area (C-SA):** The C-SA district is intended to implement General Plan and Area Plan goals for neighborhood commercial areas and encourage a variety of uses along City thoroughfares. Portions of the C-SA district are included in both the Neighborhood Commercial and Avenue Commercial General Plan designations. Within the C-SA district are three sub-areas with varied height and story limits, generally allowing the greatest height at the north end of the Plan Area adjacent to Downtown Berkeley and with generally lower permitted height limits elsewhere in the C-SA district. Height limits also vary significantly within each sub-area, allowing greater height for mixed-use and residential-only development than for commercial-only and other types of development. The height limit may be modified with a use permit. Similarly, other development standards for the C-SA district, such as setback, building separation, parking, usable open space and lot coverage may also be modified with a use permit. The only development standard that may not be modified with a use permit is the maximum floor area ratio (FAR) of 4.0.

- **Multiple-Family Residential (R-3):** The Multiple-Family Residential (R-3) zone promotes relatively high density residential development, and also allows construction of specialized treatment facilities and group living accommodations such as nursing homes, dormitories, rooming houses, and senior congregate housing. R-3 parcels allow for approximately 26 dwelling units per acre, and heights of 35 feet. There is only one R-3 parcel within the Plan Area; it is located east of the Ed Roberts Campus and is currently being used as a surface parking lot for the Ashby BART station.
- **Restricted Multiple-Family Residential (R-2A):** The Restricted Multiple-Family Residential (R-2A) zone is intended to encourage medium density development by promoting small multi-family and "garden-type" apartment developments, with as much open space as possible. This zoning designation allows for slightly higher-density development while still encouraging compatibility with low-density development and single-family residences in the area. Most parcels abutting the commercial core along Adeline Street are zoned R-2A, and these have approximate densities of 17 dwelling units per acre. The R-2A zone creates a transition in intensity of uses from the busier commercial corridor outwards towards more residential areas to the east and west.
- **Restricted Two-Family Residential (R-2):** The purposes of this district are to: 1) implement Master Plan policy by encouraging the development of low medium density residential areas characterized by a reasonably open and spacious type of development with a pattern of housing types ranging from single-family to duplexes and small apartment structures; 2) make available housing for persons who desire a range of housing choice with a relatively large amount of open space; and, 3) protect adjacent properties from unreasonable obstruction of light and air. There is one parcel in the Plan Area with this zoning located between Carleton and Derby on the east side of Adeline Street.

## 4.8.2 Impact Analysis

### a. Methodology and Significance Thresholds

According to Appendix G of the State CEQA Guidelines, the proposed Specific Plan would have a significant impact related to land use if it would cause of the following conditions to occur:

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

## b. Project Impacts and Mitigation Measures

**Threshold 1:** Would the proposed Specific Plan physically divide an established community?

**Impact LU-1** IMPLEMENTATION OF THE PROPOSED SPECIFIC PLAN WOULD NOT RESULT IN THE PHYSICAL DIVISION OF AN ESTABLISHED COMMUNITY. THIS IMPACT WOULD BE LESS THAN SIGNIFICANT.

The Plan Area is an urban, developed area in Berkeley. The proposed Specific Plan does not include elements that would physically divide the established communities within the Plan Area. For example, although the project involves street redesigns, no new major roads or other large or linear facilities would be constructed that would physically divide the established community. The vision for the Specific Plan is for the Adeline Corridor to connect neighborhoods to each other and to the region.

The wide rights-of-way for Shattuck Avenue and Adeline Street, coupled with the high speed that vehicles can travel along these streets, can present a physical barrier between the east and west sides of the Plan Area for pedestrians and bicyclists. The proposed Specific Plan includes goals, policies and capital improvements in the Transportation and Public Space chapters to redesign the right-of-way to shorten crossing distances and make traveling along and across Shattuck Avenue and Adeline Street safer and more pedestrian-friendly. This would have the effect of improving connections between east and west sides of the Plan Area for pedestrians and bicyclists.

Therefore, no significant land use impacts related to the physical division of an established community would occur as a result of adoption and implementation of the proposed Specific Plan. This impact would be less than significant.

### Mitigation Measures

No mitigation measures are required.

**Threshold 2:** Would the Specific Plan 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?

**Impact LU-2** THE PROPOSED SPECIFIC PLAN WOULD IMPLEMENT AND BE CONSISTENT WITH THE GOALS AND POLICIES OF APPLICABLE LAND USE PLANS AND POLICIES ADOPTED FOR THE PURPOSE OF AVOIDING OR MITIGATING AN ENVIRONMENTAL EFFECT. THIS IMPACT WOULD BE LESS THAN SIGNIFICANT.

Conflicts between a project and applicable policies do not constitute significant physical environmental impacts in and of themselves. As stated in Section 15358(b) of the CEQA Guidelines, “[e]ffects analyzed under CEQA must be related to a physical change.” Section 15125(d) states that that EIRs must discuss inconsistencies between the proposed project and applicable General Plans that decision-makers should address. A project is considered consistent with the provisions and general policies of an applicable city or regional land use plan if it is consistent with the overall intent of the plan and would not preclude the attainment of its primary goals. A project does not need to be in perfect conformity with each

and every policy.<sup>3</sup> More specifically, according to the ruling in *Sequoiah Hills Homeowners Association v. City of Oakland*, state law does not require an exact match between a project and the applicable general plan.

Rather, to be “consistent” the project must be “compatible with objectives, policies, general land uses, and programs specified in the applicable land use plan, meaning that a project must be in “agreement or harmony” with the applicable land use plan to be consistent with that plan. If a project is determined to be inconsistent with specific objectives or policies of a land use plan, but not inconsistent overall with the land use goals of that plan and would not preclude the attainment of the primary intent of the plan, that project would be considered generally consistent with the plan on an overall basis. As stated in the City’s General Plan:

“Given the broad scope of the General Plan, inherent tensions exist between Plan objectives and policies that must be balanced against one another through the decision-making process on particular development and land use decisions. It is not the intent of the General Plan to predetermine these decisions, but rather to help guide the decision-making process.”<sup>4</sup>

Further, CEQA Guidelines Appendix G makes explicit the focus on environmental policies and plans, asking if the project would conflict with any applicable land use plan, policy, or regulation “*adopted for the purpose of avoiding or mitigating an environmental effect*” (emphasis added). A policy inconsistency is considered a significant adverse environmental impact only when it is related to a policy adopted for the purpose of avoiding or mitigating an environmental effect and it is anticipated that the inconsistency would result in a significant adverse physical impact based on the established significance criteria. The compatibility of the adoption of, and development under, the Specific Plan with General Plan policies that do not relate to physical environmental issues will be considered by decision-makers as part of their decision whether to approve or disapprove the Specific Plan.

The General Plan has three separate land use designations for the Plan Area, as described in the Setting section above. The City’s Zoning Code has three zones for the Plan Area. With adoption of the Specific Plan, a new “Adeline Corridor Mixed Use” General Plan Land Use Classification would be adopted. This new Land Use Classification would include all parcels within the Plan Area. In addition, a new zone, anticipated to be called “C-Adeline Corridor” would be created for adoption into the municipal zoning code. Like the General Plan designation, the C-AC zone would include all parcels within Plan Area. The zone would incorporate zoning-level development standards consistent with Specific Plan guidance for topics such as height, FAR, density, setbacks, lot coverage, usable open space, and parking standards.

A reasonable and conservative estimate of buildout associated with the proposed Specific Plan through the horizon year 2040 would include development of 1,450 housing units and 65,000 square feet of commercial space. Effects associated with implementation of the Specific Plan are analyzed throughout this EIR.

The General Plan includes specific goals, objectives, policies and strategies directed toward avoiding or mitigating environmental effects. To maintain internal consistency with the General Plan, the proposed Specific Plan should be consistent with those plans’ goals and policies. In accordance with the scope and purpose of this EIR, the policy consistency discussion contained herein focuses on those goals and policies that relate to avoiding or

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<sup>3</sup> *Sequoiah Hills Homeowners Association v. City of Oakland* (1993) 23 Cal.App.4th 704,719.

<sup>4</sup> City of Berkeley General Plan (2001), p.1-2.

mitigating environmental impacts, and an assessment of whether inconsistency with these goals and policies creates a significant physical impact on the environment. The ultimate determination of whether the proposed Specific Plan is consistent with City plans rests with the Planning Commission and City Council, therefore the goals and policies in Table 4.8-1 are determined here to be either “potentially consistent” or “potentially inconsistent.”

As stated in Section 2, *Project Description*, of this EIR, the proposed Specific Plan would replace and supersede previous plans for the area within the Plan Area boundary, including the 1990 South Berkeley Area Plan and the 1998 South Shattuck Plan. Therefore, consistency with those area plans is not addressed in this section. Consistency with other applicable regional and local plans that include policies related to land use, including the 2017 Clean Air Plan, Plan Bay Area 2040, and the City’s Climate Action Plan, is discussed in Section 4.1, *Air Quality*, and 4.5, *Greenhouse Gas Emissions*, of this EIR.

**Table 4.8-1 Specific Plan Consistency with Relevant General Plan Goals and Policies**

General Plan Policy	Discussion
Land Use Element	
Maintain and Preserve the Character of Berkeley	
<p><b>Policy LU-2 Preservation.</b> Protect Berkeley’s character by identifying, restoring, and preserving historic buildings.</p>	<p><b>Potentially Consistent.</b> Specific Plan Chapter 3, Land Use, Strategy 3.6 calls for the identification, preservation, adaptation, and reuse of historic structures and resources throughout the Adeline Area, particularly landmarked structures of merit and those in historic districts; this strategy would reflect this General Plan policy at the Specific Plan level. The Specific Plan also includes new historic preservation zoning incentives.</p>
<p><b>Policy LU-3 Infill Development.</b> Encourage infill development that is architecturally and environmentally sensitive, embodies principles of sustainable planning and construction, and is compatible with neighboring land uses and architectural design and scale.</p>	<p><b>Potentially Consistent.</b> The framework of the Specific Plan is intended to focus density and activity near high-frequency transit and near the existing energy of Downtown, while allowing context-sensitive infill development along the rest of the corridor. As described in Specific Plan Chapter 3, Land Use, Strategies 3.5 and 3.6, new development is required to provide transitions in height and building massing to adjacent residential neighborhoods, focusing the bulk of buildings towards the front of the wide Adeline Corridor while preserving the character of existing lower-scale neighborhoods. These Specific Plan strategies would reflect this General Plan policy at the Specific Plan level.</p>
<p><b>Policy LU-4 Discretionary Review.</b> Preserve and enhance the aesthetic, environmental, economic, and social character of Berkeley through careful land use and design review decisions.</p>	<p><b>Potentially Consistent.</b> Under the proposed Specific Plan, discretionary review is streamlined for projects that include specified levels of on-site affordable housing – one of the top priorities of the Plan. Although streamlined, the purpose of the discretionary review process for projects in the Plan Area would still be to ensure consistency with the applicable standards and guidelines outlined in the proposed Specific Plan. The vision of the Specific Plan is for greater economic opportunity, safer streets, more housing choices, and a greener, healthier environment for all residents.</p>

General Plan Policy	Discussion
<b>Maintain and Enhance Berkeley’s Residential Areas</b>	
<p><b>Policy LU-7 Neighborhood Quality of Life.</b> Preserve and protect the quality of life in Berkeley’s residential areas through careful land use decisions.</p>	<p><b>Potentially Consistent.</b> The goal of the Land Use Chapter (Chapter 3) of the Specific Plan is to preserve Adeline’s unique character and cultural legacy while supporting a complete neighborhood where people of all ages, abilities, and means can meet their daily needs to live, work, play, learn, worship, dine, shop, and socialize. The proposed Specific Plan would ensure that the height, scale, and design of private development in the Plan Area contributes to the quality of life in the neighborhood.</p>
<p><b>Policy LU-9 Non-Residential Traffic.</b> Minimize or eliminate traffic impacts on residential areas from institutional and commercial uses through careful land use decisions.</p>	<p><b>Potentially Consistent.</b> The proposed Specific Plan may involve new institutional and commercial uses that increase traffic in nearby residential areas. However, as described in Section 4.12, <i>Transportation and Traffic</i>, the proposed Specific Plan would not result in unavoidably significant traffic impacts to study area roadways or intersections in residential areas. Overall, the proposed Specific Plan would encourage transit-oriented development and would reduce vehicle miles traveled (VMT). In addition, the right-of-way improvements envisioned by the Specific Plan would improve safety and connections along Adeline Corridor, improving safe access to residential neighborhoods.</p>
<p><b>Policy LU-11 Pedestrian- and Bicycle-Friendly Neighborhoods.</b> Ensure that neighborhoods are pedestrian- and bicycle-friendly with well-maintained streets, street trees, sidewalks, and pathways.</p>	<p><b>Potentially Consistent.</b> The proposed Specific Plan would include redesigned street right-of-way to support all modes of transportation, new bicycle facilities integrated with the citywide bicycle network, new pedestrian improvements focused on intersection crossing safety, universal accessibility and improvements to improve safety for those with disabilities, and improvements to transit stops and service in coordination with AC Transit.</p>
<b>Maintain and Enhance Berkeley’s Commercial Areas and the Downtown</b>	
<p><b>Policy LU-21 Transit-Oriented Development.</b> Encourage and maintain zoning that allows greater commercial and residential density and reduced residential parking requirements in areas with above-average transit service such as Downtown Berkeley.</p>	<p><b>Potentially Consistent.</b> The proposed Specific Plan would rezone the Plan Area to a new Adeline Corridor zone which is intended to focus density and activity near high-frequency transit and near the existing energy of Downtown. As described in Specific Plan Chapter 3, Land Use, the site development standards would have no minimum parking requirements for commercial developments and for residential developments in the Ashby BART area. Residential developments in the other areas would have a minimum parking requirement of one space per three units. Developments that provide more affordable housing than required and/or a robust Transportation Demand Management Plan would be able to further reduce their parking supply.</p>
<p><b>Policy LU-25 Avenue Commercial Areas.</b> Maintain and improve Avenue Commercial areas, such as University, San Pablo, Telegraph, and South Shattuck, as pedestrian-friendly, visually attractive areas of pedestrian scale and ensure that Avenue areas fully serve neighborhood needs as well as a broader spectrum of needs.</p>	<p><b>Potentially Consistent.</b> The Specific Plan divides the Plan Area into four Subareas: South Shattuck, North Adeline, Ashby BART and South Adeline, shown on Figure 2-5 in Section 2, <i>Project Description</i>. Each of these subareas is proposed to have a different land use focus that responds to different site conditions and development contexts in order to build upon and strengthen distinct neighborhood identities. The South Shattuck Subarea is envisioned as an attractive, mixed-use pedestrian-oriented area with higher intensity infill housing because of its proximity to the more intensively developed Downtown and the University of California campus, and the availability of relatively large, deep parcels.</p>

General Plan Policy	Discussion
<p><b>Policy LU-28 South Shattuck Strategic Plan.</b> Implement the South Shattuck Strategic Plan and take action to achieve the four objectives of the Plan:</p> <ol style="list-style-type: none"> <li>1. Improve and create commercial and mixed-use development along South Shattuck.</li> <li>2. Create and enhance the identity of the South Shattuck commercial corridor as a unique and pleasant district that complements adjacent residential neighborhoods.</li> <li>3. Ensure that residential properties are used and maintained according to appropriate standards.</li> <li>4. Make traffic improvements which complement economic development and urban design goals, encourage the use of alternatives to the automobile, and preserve the quality of life in residential neighborhoods.</li> </ol>	<p><b>Potentially Consistent.</b> As described in Section 2, <i>Project Description</i>, the Specific Plan would replace and supersede previous plans for the area within the Plan Area boundary, including the 1998 South Shattuck Plan. Nonetheless, it is consistent with the vision of the South Shattuck Plan to develop the South Shattuck Subarea as an attractive, mixed-use pedestrian-oriented area with higher intensity infill housing. The Specific Plan envisions long-term improvements to the Shattuck Avenue and Adeline right-of-way in order to improve quality of life and encourage alternative transportation modes.</p>
<p><b>Policy LU-30 Ashby BART Station.</b> Encourage affordable housing or mixed-use development including housing on the air rights above the Ashby BART station and parking lot west of Adeline Street.</p>	<p><b>Potentially Consistent.</b> Strategy 7 in Specific Plan Chapter 3 includes specific objectives for the Ashby BART area. The intent for the future of the Ashby BART station area to continue providing public space and community-oriented facilities, while also incorporating housing with high levels of affordability. Future development in the Ashby BART character area would be required to be consistent with seven objectives related to affordable housing, public space, development parameters, public art, pedestrian and bicycle connections, parking and transportation demand management, and community engagement.</p>

**Transportation Element**

**Automobile Use Reduction**

<p><b>Policy T-10 Trip Reduction.</b> To reduce automobile traffic and congestion and increase transit use and alternative modes in Berkeley, support, and when appropriate require, programs to encourage Berkeley citizens and commuters to reduce automobile trips, such as:</p> <ol style="list-style-type: none"> <li>1. Participation in a citywide Eco-Pass Program (also see Transportation Policy T-3).</li> <li>2. Participation in the Commuter Check Program.</li> <li>3. Carpooling and provision of carpool parking and other necessary facilities.</li> <li>4. Telecommuting programs.</li> <li>5. "Free bicycle" programs and electric bicycle programs.</li> <li>6. "Car-sharing" programs.</li> <li>7. Use of pedal-cab, bicycle delivery services, and other delivery services.</li> <li>8. Programs to encourage neighborhood-level initiatives to reduce traffic by encouraging residents to combine trips, carpool,</li> </ol>	<p><b>Potentially Consistent.</b> The Plan Area is located along a major transit corridor with service by several AC Transit bus lines and served by the Ashby BART station. By its nature, the Specific Plan focuses growth on a major transit corridor which would reduce vehicle trips. As discussed in Section 4.12, <i>Transportation and Traffic</i>, the proposed Specific Plan is estimated to reduce the vehicle miles traveled (VMT) per service population by an estimated seven percent compared to 2040 buildout conditions without the Specific Plan.</p>
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General Plan Policy	Discussion
<p>telecommute, reduce the number of cars owned, shop locally, and use alternative modes.</p> <p>9. Programs to reward Berkeley citizens and neighborhoods that can document reduced car use.</p> <p>10. Limitations on the supply of long-term commuter parking and elimination of subsidies for commuter parking.</p> <p>11. No-fare shopper shuttles connecting all shopping districts throughout the city.</p>	
<b>Neighborhood Traffic Calming</b>	
<p><b>Policy T-20 Neighborhood Protection and Traffic Calming.</b> Take actions to prevent traffic and parking generated by residential, commercial, industrial or institutional activities from being detrimental to residential areas.</p>	<p><b>Potentially Consistent.</b> As discussed in Section 4.12, <i>Transportation and Traffic</i>, implementation of the proposed Specific Plan would not significantly impact roadways in surrounding neighborhoods.</p>
<p><b>Policy T-24 Ashby Avenue.</b> Take actions necessary to reduce congestion, improve pedestrian and bicycle crossings, and improve the quality of life for residents on Ashby Avenue.</p>	<p><b>Potentially Consistent.</b> The proposed Specific Plan would include redesigned street right-of-way including improvements at the intersection of Adeline Street and Ashby Avenue to support all modes of transportation, new bicycle facilities integrated with the citywide bicycle network, new pedestrian improvements focused on intersection crossing safety, universal accessibility and improvements to improve safety for those with disabilities, and improvements to transit stops and service in coordination with AC Transit.</p>
<b>Housing Element</b>	
<b>Expansion of the Housing Supply</b>	
<p><b>Policy H-12 Transit-Oriented New Construction.</b> Encourage construction of new medium- and high-density housing on major transit corridors and in proximity to transit stations consistent with zoning, applicable area plans, design review guidelines, and the Climate Action Plan.</p>	<p><b>Potentially Consistent.</b> The Plan Area is located along a major transit corridor with service by several AC Transit bus lines and served by the Ashby BART station. By its nature, the Specific Plan focuses growth on a major transit corridor. Further development in the Plan Area would be required to be consistent with the new Adeline Corridor zoning requirements and guidelines. As discussed in Section 4.5, <i>Greenhouse Gas Emissions</i>, the proposed Specific Plan is consistent with the City's Climate Action Plan.</p>
<b>Energy Efficiency</b>	
<p><b>Policy H-30 Energy Efficiency and Waste Reduction.</b> Implement provisions of Berkeley's Climate Action Plan to improve building comfort and safety, reduce energy costs, provide quality housing, and reduce Greenhouse Gas Emissions.</p>	<p><b>Potentially Consistent.</b> As described in Section 4.5, <i>Greenhouse Gas Emissions</i>, development under the Specific Plan would be required to implement provisions of the City's Climate Action Plan as well as regional and state goals to reduce GHG Emissions.</p>

General Plan Policy	Discussion
Open Space and Recreation Element	
Preserve, Maintain, and Repair the City’s Existing Open Space and Recreational Resources and Facilities	
<p><b>Policy OS-6 New Open Space and Recreational Resources.</b> Create new open space and recreational resources throughout Berkeley.</p>	<p><b>Potentially Consistent.</b> Specific Plan Chapter 7, Public Space, provides a toolkit of potential streetscape and public space programming. The goal is to “provide safe, sustainable, beautiful, healthy, and inclusive public spaces that encourage social interaction, provide opportunities for recreation, and support active community life in South Berkeley and the surrounding community.” Implementation of the proposed Specific Plan would enhance and activate public space throughout the neighborhood through programming and new amenities; repurpose underutilized right-of-way and other public spaces to create new parks, plazas, and community gathering places; improving connections and access to existing open space and parks between Adeline Street and the South Berkeley neighborhood; and increasing landscaping and greenery along the Adeline Corridor to improve the appearance of the street and create a more welcoming environment.</p>
<p><b>Policy OS-10 Access Improvements.</b> Improve transit, bicycle, disabled, and pedestrian access to and between open space and recreation facilities, including regional facilities such as the Berkeley Marina, University of California open space, East Bay Regional Park District lands, the Eastshore State Park, and recreational facilities in other cities.</p>	<p><b>Potentially Consistent.</b> The proposed Specific Plan includes strategies and features to calm vehicular traffic on major thoroughfares, especially Adeline Street; redesign major streets to meet the needs of pedestrians, bicyclists and transit users, and not just motor vehicles; establish stronger connections between the Adeline Corridor and the neighborhoods around it, including North Oakland and West and Central Berkeley; improve transit service; create a bicycle network that serves persons of all ages and abilities; create safe crossings of Adeline Street, especially for pedestrians and bicyclists; ensure all pedestrian paths are accessible to persons with limited mobility; improve the physical environment around transit to encourage ridership and increase safety; and effectively manage local parking.</p>
Urban Design & Preservation	
Protection of Existing Resources	
<p><b>Policy UD-1 Techniques.</b> Use a wide variety of regulatory, incentive, and outreach techniques to suitably protect Berkeley’s existing built environment and cultural heritage.</p> <p><b>Policy UD-2 Regulation of Significant Properties.</b> Increase the extent of regulatory protection that applies to structures, sites, and areas that are historically or culturally significant.</p>	<p><b>Potentially Consistent.</b> See Section 4.3, <i>Cultural Resources</i>, of this EIR. Specific Plan Chapter 3, Land Use, Strategy 3.6 calls for the identification, preservation, adaptation, reuse of historic structures and resources throughout the Plan Area, and new historic preservation zoning incentives. Further, new development in the Plan Area would be subject to review by the City’s Landmark Preservation Commission and other City policies to reduce potential impacts related to historic resources.</p>
<p><b>Policy UD-3 Regulation of Neighborhood Character.</b> Use regulations to protect the character of neighborhoods and districts, and respect the particular conditions of each area.</p>	<p><b>Potentially Consistent.</b> The proposed Specific Plan divides the Plan Area into four subareas, each with a different land use focus that responds to different site conditions and development contexts. Therefore, the proposed Specific Plan is designed to be sensitive to the character of neighborhoods and districts.</p>

General Plan Policy	Discussion
<b>New Construction and Alterations</b>	
<p><b>Policy UD-18 Contrast and Cohesiveness.</b> The overall urban experience should contain variety and stimulating contrasts achieved largely through contrast between different areas each of which is visually cohesive.</p>	<p><b>Potentially Consistent.</b> The development standards in Chapter 3, Land Use, of the proposed Specific Plan are intended to ensure that basic elements of good design and place making occur within an appropriate scale for the neighborhood. These are intended to encourage appropriate building scale, orientation, and overall site design. Therefore, the proposed Specific Plan would not create a less cohesive environment compared to existing conditions. Further, the City’s existing design review requirements (BMC Chapter 23E.12) would continue to apply new development in the Plan Area under implementation of the proposed Specific Plan.</p>
<p><b>Policy UD-24 Area Character.</b> Regulate new construction and alterations to ensure that they are truly compatible with and, where feasible, reinforce the desirable design characteristics of the particular area they are in.</p>	<p><b>Potentially Consistent.</b> The development standards in Chapter 3, Land Use, of the proposed Specific Plan provides guidance for lot coverage, setbacks, on-site parking, and required open area for each character area. This section provides foundational design parameters that are complimented by additional guidance for building design (Policy 3.3), neighborhood transitions (Policy 3.4), and ground floor facades (Policy 3.5). Further, the City’s existing design review requirements (BMC Chapter 23E.12) would continue to apply new development in the Plan Area.</p>
<p><b>Policy UD-26 Pedestrian-Friendly Design.</b> Architecture and site design should give special emphasis to enjoyment by, and convenience and safety for, pedestrians.</p>	<p><b>Potentially Consistent.</b> The proposed Specific Plan is designed to enhance the transportation network for pedestrians and increase pedestrian activity and safety. The development standards in Chapter 3, Land Use, are designed to ensure that the massing, articulation, and design of buildings provides visual interest, integrates with the neighborhood, and shapes a pleasant, pedestrian-oriented public realm.</p>
<p><b>Policy UD-33 Sustainable Design.</b> Promote environmentally sensitive and sustainable design in new buildings.</p>	<p><b>Potentially Consistent.</b> As discussed in Section 4.5, <i>Greenhouse Gas Emissions</i>, with mitigation proposed new construction would be energy efficient and designed to promote sustainable design and reduce overall GHG emissions from implementation of the proposed Specific Plan.</p>

As shown in Table 4.8-1, the goals and policies of the proposed Specific Plan are generally consistent with the General Plan. In addition, the proposed project would not cause a significant environmental impact due to a conflict with an applicable land use plan, policy or regulation. Although the proposed Specific Plan would result in an unavoidably significant traffic-related impact with respect to the Congestion Management Program (CMP) network (see Section 4.12, *Transportation and Traffic*), this impact is not the result of a conflict with an applicable land use policy. Furthermore, the goals and policies of the proposed Specific Plan and associated zoning changes would supersede the goals, policies in the Area Plans and zoning in the Plan Area with adoption of the Specific Plan.

As discussed in the section above, adoption and development under the Specific Plan generally would not conflict with applicable land use policies adopted for the purpose of avoiding or mitigating an environmental effect and would not cause a significant environmental impact due to such a conflict. As a result, no significant land use impacts related to the consistency of adoption and development under the Specific Plan with land use policies would occur.

### Mitigation Measures

No mitigation measures are required.

**Threshold:** Conflict with any applicable habitat conservation plan or natural community conservation plan.

**Impact LU-3** THE PROPOSED SPECIFIC PLAN WOULD NOT CONFLICT WITH AN APPLICABLE HABITAT CONSERVATION PLAN OR NATURAL COMMUNITY CONSERVATION PLAN. THIS IMPACT WOULD BE LESS THAN SIGNIFICANT.

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The Plan Area is not located within or in proximity to an area guided by a Habitat Conservation Plan or Natural Community Conservation Plan. Therefore, adoption and development under the Specific Plan would not conflict with such plans.

### **Mitigation Measures**

No mitigation measures are required.

### **c. Cumulative Impacts**

Development under the Specific Plan would not physically divide an established community, would not result in the introduction of new land uses that would conflict with existing land uses in the Plan Area, and would be generally consistent with City of Berkeley plans and policies intended to direct high-density development toward areas served by transit. Such development would not entail significant adverse land use impacts, either directly or cumulatively.

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## 4.9 Noise

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This section evaluates the impacts of noise generated by future development under the proposed Specific Plan on nearby noise-sensitive land uses, as well as the effect of current and future noise levels on the proposed Specific Plan land uses.

### 4.9.1 Setting

#### a. Overview of Noise and Vibration Measurement

Noise is defined as unwanted sound that disturbs human activity. Noise level (or volume) is generally measured in decibels (dB) using the A-weighted sound pressure level (dBA). The A-weighting scale is an adjustment to the actual sound power levels to be consistent with human hearing response, which is most sensitive to frequencies around 4,000 Hertz (similar to the highest note on a piano) and less sensitive to frequencies below 100 Hertz (similar to a transformer hum).

Sound pressure level is measured on a logarithmic scale with the 0 dB level based on the lowest detectable sound pressure level that people can perceive (an audible sound that is not zero sound pressure level). Based on the logarithmic scale, a doubling of sound energy is equivalent to an increase of 3 dB, and a sound that is 10 dB less than the ambient sound level has no effect on ambient noise. Because of the nature of the human ear, a sound must be about 10 dB greater than the reference sound to be judged as twice as loud. In general, a 3 dBA change in community noise levels is noticeable, while 1-2 dBA changes generally are not perceived. Quiet suburban areas typically have noise levels in the range of 40-50 dBA, while those along arterial streets are in the 50-60+ dBA range. Normal conversational levels are in the 60-65 dBA range, and ambient noise levels greater than 65 dBA can interrupt conversations.

Noise levels typically attenuate (drop off) at a rate of 6 dB per doubling of distance from point sources such as industrial machinery. Noise from lightly traveled roads typically attenuates at a rate of about 4.5 dB per doubling of distance. Noise from heavily traveled roads typically attenuates at about 3 dB per doubling of distance.

In addition to the instantaneous measurement of sound levels, the duration of sound is important since sounds that occur over a long period of time are more likely to be an annoyance or cause direct physical damage or environmental stress. One of the most frequently used noise metrics that considers both duration and sound power level is the equivalent noise level (Leq). The Leq is defined as the single steady A-weighted level that is equivalent to the same amount of energy as that contained in the actual fluctuating levels over a period of time (essentially, the average noise level). Typically, Leq is summed over a one-hour period.

The time period in which noise occurs is also important since nighttime noise tends to disturb people more than daytime noise. Two commonly used noise metrics – the Day-Night average level (Ldn) and the Community Noise Equivalent Level (CNEL) - recognize this fact by weighting hourly Leqs over a 24-hour period. The Ldn is a 24-hour average noise level that adds 10 dB to actual nighttime (10:00 PM to 7:00 AM) noise levels to account for the greater sensitivity to noise during that time period. The CNEL is identical to the Ldn, except it also adds a 5 dB penalty for noise occurring during the evening (7:00 PM to 10:00 PM). Noise levels described by Ldn and CNEL typically do not differ by more than 1 dBA. In practice, CNEL and Ldn are often used interchangeably.

The relationship between peak hourly Leq values and associated Ldn values depends on the distribution of traffic over the entire day. There is no precise way to convert a peak hourly Leq to Ldn. However, in urban areas near heavy traffic, such as the Plan Area, the peak hourly Leq is typically 2-4 dBA lower than the daily Ldn or CNEL.

## Vibration

Vibration is sound radiated through the ground. The rumbling sound caused by the vibration of room surfaces is called groundborne noise. Groundborne vibration is almost exclusively a concern inside buildings and is rarely perceived as a problem outdoors. Groundborne vibration related to human annoyance is generally related to root mean square (RMS) velocity levels expressed in vibration decibels (VdB). However, construction-related groundborne vibration in relation to its potential for building damage can also be measured in inches per second (in/sec) peak particle velocity (PPV) (Federal Transit Administration 2006). Based on the Federal Transit Administration's (FTA) Transit Noise and Vibration Impact Assessment and Caltrans' 1992 Transportation-Related Earthborne Vibration, Technical Advisory, vibration levels decrease by 6 VdB with every doubling of distance.

The background vibration velocity level in residential areas is usually 50 VdB or lower (FTA 2018). The threshold of perception for humans is approximately 65 VdB. Frequent incidences of vibration above 70 VdB at residences can result in human annoyance, while vibration exceeding 85 VdB at residences can result in strong annoyance. Most perceptible indoor vibration is caused by sources within buildings, such as operation of mechanical equipment, movement of people, or the slamming of doors. Typical outdoor sources of groundborne vibration that is perceptible within buildings are construction equipment, steel-wheeled trains, and traffic on rough roads. If a roadway is fairly smooth, the groundborne vibration from traffic is rarely perceptible. The range of interest is from approximately 50 VdB, which is the typical background vibration velocity level, to 100 VdB, which is the general threshold where minor cosmetic damage can occur in fragile buildings.

### b. Noise-Sensitive Receptors

Noise exposure goals for various types of land uses reflect the varying noise sensitivities associated with those uses. The Berkeley General Plan's Environmental Management Element defines noise-sensitive receptors as residences, child-care centers, hospitals, nursing homes, and other similar land uses (Berkeley 2001b). These land uses have more stringent noise exposure thresholds than commercial or industrial uses that are not susceptible to certain impacts, such as sleep disturbance, pursuant to Policy EM-47 in the Environmental Management Element. The location, hours of operation, type of use, and extent of development warrant close analysis in an effort to ensure that noise-sensitive receptors are not exposed to adverse noise levels. The Regulatory Setting, below, describes the City's thresholds for the exposure of noise-sensitive receptors to noise.

Although commercial uses such as shops, restaurants and offices are dominant in the Plan Area, occupying over one-third of the total area, noise-sensitive residential and educational uses are also prevalent. Sensitive receptors in the Plan Area are located primarily in the South Area Commercial (C-SA) zoning district and subject to the City's noise standards pertaining to that zone. Multi-family apartment buildings occur in the C-SA zone in the following parts of the Adeline Street corridor:

- Parker Apartments on Shattuck Avenue at Parker Street
- Savo Island Cooperative Homes on Ward Street adjacent to Adeline Street
- Harriet Tubman Terrace apartments on Adeline Street north of Russell Street

- Harper Crossing at Martin Luther King Jr. Way by Adeline Street
- Lorin Station Plaza at Adeline Street by Harmon Street

Many other residential units are dispersed in smaller-scale multi-family residential buildings in the Plan Area and above ground-floor commercial uses. In addition, single-family residences occur in the C-SA zone on Adeline Street to the south of Russell Street and by Stanford Avenue, and in the R-2A zone to the west of Shattuck Avenue between Dwight Way and Oregon Street. Other noise-sensitive land uses, especially residences, also are located adjacent to the Plan Area, in neighborhoods zoned R-2 and R-2A. Land uses in the R-2 and R-2A zones are subject to the City's noise standards for the R-2 zoning district, as shown in Table 4.9-2 in the Regulatory Setting.

Churches located in the Plan Area include St. John the Baptist Russian Orthodox Church on Essex Street by Adeline Street; the Phillips Temple C.M.E. Church on Adeline Street north of 63rd Street; St. Paul A.M.E. Church on Ashby Avenue east of Adeline Street; and Progressive Missionary Baptist Church of Berkeley at King Street and Alcatraz Avenue. Educational facilities include a child development center and vocational training facilities at the Ed Roberts Campus adjacent to the Ashby BART Station.

### c. Existing Noise Conditions and Sources

The primary sources of noise in the Plan Area are motor vehicles, trains, aircraft, and noise associated with operation of commercial and residential uses.

#### Motor Vehicles

Motor vehicles, including passenger vehicles, trucks, and buses, are the most common and significant sources of noise in Berkeley. The loudest roadways in the Plan Area are arterial routes that carry the highest traffic volumes, including Adeline Street, Martin Luther King Jr. Way, Ashby Avenue (State Route 13), Alcatraz Avenue, and Stanford Avenue. As the arterial axis of the Plan Area, Adeline Street is the primary source of traffic noise. AC Transit buses frequently pass through the Adeline Street corridor and generate noise when accelerating and braking.

#### Trains

Bay Area Regional Transit (BART) trains contribute to the noise environment to the south of Alcatraz Street, where the railway tracks are aboveground on an elevated viaduct. North of this point, the BART railway tracks descend underground, continuing through the Ashby BART Station and toward the Downtown Berkeley BART Station. On the underground portion of the tracks in the Plan Area, trains do not generate noise that substantially contributes to ambient noise levels at nearby sensitive receptors. Trains on the Richmond-Daly City/Millbrae and Richmond-Warm Springs lines frequently pass through the Plan Area. As discussed in Section 4.12, *Transportation and Traffic*, the Ashby BART Station is served by trains from 4:30 AM to 12:50 AM on weekdays and from 6:10 AM to 12:50 AM on weekends. The Ashby BART Station is served by about 16 trains per hour during the weekday peak commute periods.

#### On-Site Operational Noise

Equipment used in the operation of retail, other commercial, and residential uses in the Plan Area contributes to ambient noise. In commercial areas, restaurants, retail stores, and other businesses can generate on-site noise from HVAC systems, loading docks, trash

compactors, outdoor dining, music, and other sources. Residential neighborhoods generate noise from the use of home appliances, yard maintenance and home construction equipment, air conditioners, power tools, and other household activities.

### Aircraft

Noise from aircraft overflights is a minor contributor to ambient noise in Berkeley. The nearest airport to the Plan Area, Oakland International Airport, is located approximately 8.5 miles to the south. Although individual aircraft in the vicinity of the Plan Area are occasionally audible, the Plan Area is well outside of the 60 dBA CNEL noise contour associated with this airport (Alameda County 2012).

### Noise Measurements

To establish existing ambient noise conditions in the Plan Area, noise level readings were taken by Rincon Consultants, Inc. staff at three locations using an ANSI Type II integrating sound level meter in accordance with industry standard protocols on November 6, 2018. These three noise measurements were collected during morning peak hours for traffic, between 7 and 9 AM, a time period which is representative of average ambient noise levels from rush-hour traffic within the Plan Area. Locations were selected as representative of actual noise levels from motor vehicle traffic on Adeline Street, near Ward Street, Ashby Avenue, and Martin Luther King Jr. Way (see Figure 4.9-1). These measurements provide baseline data against which modeled noise level projections can be compared. Table 4.9-1 lists the noise measurement locations and measured noise levels.

**Table 4.9-1 Noise Measurement Results**

Measurement Location <sup>1</sup>	Primary Noise Source	Distance from Centerline of Nearest Road	Sample Time	Leq dBA <sup>2</sup>
1	Adeline Street	80 feet	8:29 – 8:45 AM	68.3
2	Adeline Street	55 feet	8:05 – 8:20 AM	67.6
3	Martin Luther King Jr. Way	55 feet	7:45 – 8:00 AM	74.7

<sup>1</sup> Measurement locations are shown in Figure 4.9-1.

<sup>2</sup> All measurements were taken on November 6, 2018, using an ANSI Type II sound level meter.

Refer to Appendix D for noise measurement results.

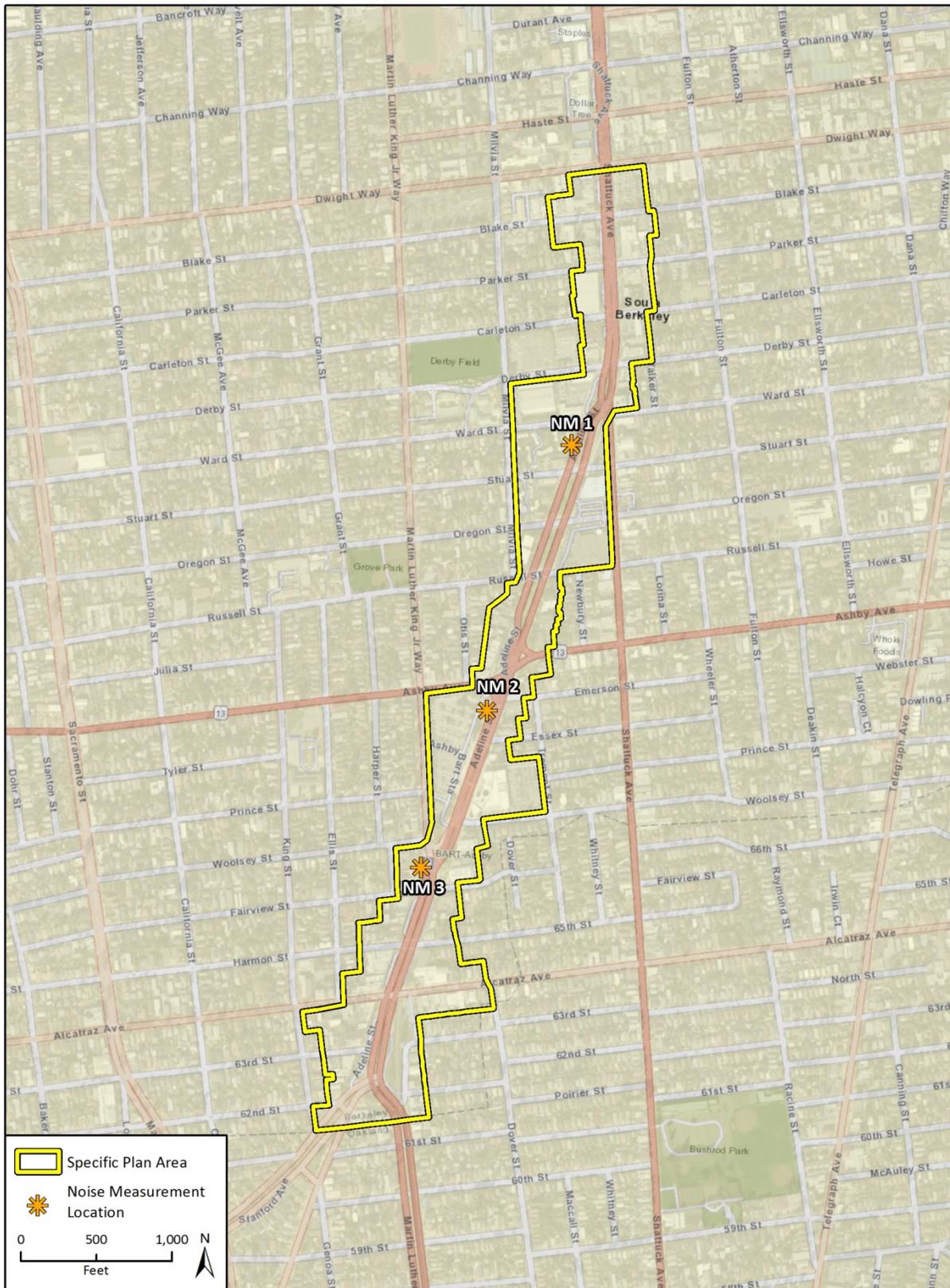
## d. Regulatory Setting

### State

Title 24 of the California Code of Regulations codifies Sound Transmission Control requirements establishing uniform minimum noise insulation performance standards for new hotels, motels, dormitories, apartment houses, and dwellings other than single-family dwellings. Specifically, Section 1207.4 in Title 24 states that interior noise levels attributable to exterior noise sources shall not exceed 45 dBA CNEL or Ldn in any habitable room of a new building.

While there are no State standards for vibration, for continuous, frequent, and intermittent vibration, Caltrans considers the architectural damage risk level to be somewhere between 0.08 and 0.5 inches per second (in/sec) peak particle velocity (PPV) depending on the type of building that is affected.

Figure 4.9-1 Noise Measurement Locations



## Local

### *Berkeley General Plan*

The City of Berkeley’s General Plan addresses noise-related issues in the Environmental Management Element, which was adopted in April 2002. Policy EM-47 of the Environmental Management Element ensures that new noise-sensitive uses, such as residences, are protected from detrimental noise levels. The policy sets normally acceptable, conditionally acceptable, and unacceptable exterior noise levels that apply to the placement of new noise-sensitive receptors: for new residences, noise exposure of up to 60 dBA Ldn is considered normally acceptable; noise levels of between 60 and 75 dBA Ldn are conditionally acceptable and would require detailed analysis of noise reduction requirements and noise insulation features; and any noise level above 75 dBA Ldn is considered unacceptable because mitigation is not usually feasible.

### *Berkeley Municipal Code*

Section 13.40, Community Noise, of the Berkeley Municipal Code sets the City’s standards for on-site operational noise and construction noise. As shown in Table 4.9-2, Section 13.40.050, Exterior Noise Standards, provides the exterior noise limits not to be exceeded for more than 30 minutes in any hour in various zoning districts. If the measured ambient noise level exceeds these limits, the allowable noise exposure standard would be the ambient noise level.

**Table 4.9-2 City of Berkeley Exterior Noise Limits**

Zone	Time Period	L <sub>50</sub> <sup>1</sup> Noise Level, dBA
R-1, R-2	7:00 AM – 10:00 PM	55
	10:00 PM – 7:00 AM	45
R-3 and Above	7:00 AM – 10:00 PM	60
	10:00 PM – 7:00 AM	55
Commercial	7:00 AM – 10:00 PM	65
	10:00 PM – 7:00 AM	60
Industry	Anytime	70

<sup>1</sup>L<sub>50</sub> is the noise level that cannot be exceeded for more than 30 minutes in any hour.

Source: Berkeley, Municipal Code Section 13.40.050

Section 13.40.060 of the Berkeley Municipal Code, Interior Noise Standards, sets interior noise limits for multi-residential as shown in Table 4.9-3.

**Table 4.9-3 City of Berkeley Interior Noise Limits**

Zone	Time Period	Noise Level, dBA (Leq)
All	7:00 AM – 10:00 PM	45
	10:00 PM – 7:00 AM	40

Source: City of Berkeley Municipal Code Section 13.40.060

Section 13.40.070 of the Municipal Code sets standards for construction noise. This section prohibits construction activity between the hours of 7:00 PM and 7:00 AM on weekdays, 8:00 PM to 9:00 AM on weekends and holidays such that the resulting noise creates a noise disturbance across a residential or commercial property line. Table 4.9-4 lists the City’s maximum sound levels for mobile and stationary equipment that apply to construction activity “where technically and economically feasible” during permitted hours of construction (Section 13.40.070.B of the Municipal Code).

**Table 4.9-4 Construction Noise Standards**

Equipment Type	Day/Times	Residential (R-1, R-2)	Multi-Family Residential (R-3)	Commercial/Industrial
Mobile <sup>1</sup>	Weekdays 7:00 AM to 7:00 PM	75 dBA	80 dBA	85 dBA
	Weekends and Holidays 9:00 AM to 8:00 PM	60 dBA	65 dBA	70 dBA
Stationary <sup>2</sup>	Weekdays 7:00 AM to 7:00 PM	60 dBA	65 dBA	70 dBA
	Weekends and Holidays 9:00 AM to 8:00 PM	50 dBA	55 dBA	60 dBA

<sup>1</sup> Section 14.40.070 of the Berkeley Municipal Code defines mobile equipment as “nonscheduled, intermittent, short-term operation (less than 10 days).

<sup>2</sup> Section 14.40.070 of the Berkeley Municipal Code defines stationary equipment as “repetitively scheduled” and for “relatively long term operation (period of 10 days or more).

Source: adapted from Table 13.40-3 and Table 13.40-4 of the City of Berkeley’s Construction Noise Standards:  
[http://www.ci.berkeley.ca.us/uploadedFiles/Health\\_Human\\_Services/Level\\_3\\_-\\_General/Construction%20Noise%20Standard.pdf](http://www.ci.berkeley.ca.us/uploadedFiles/Health_Human_Services/Level_3_-_General/Construction%20Noise%20Standard.pdf)

## 4.9.2 Impact Analysis

### a. Methodology and Significance Thresholds

The analysis of noise impacts considers the effects of both temporary construction-related noise and long-term noise associated with buildout of the Specific Plan. Impacts would be significant if they would exceed the following thresholds of significance, based on Appendix G of the *CEQA Guidelines*:

1. Expose persons to or generate noise levels in excess of standards established in the local general plan, noise ordinance, or applicable standards of other agencies;
2. Expose persons to or generate excessive groundborne vibration or groundborne noise levels;
3. Result in a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project;
4. Result in a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project;
5. Expose people residing or working in the project area to excessive noise levels 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; or

6. Expose people residing or working in the project area to excessive noise levels within the vicinity of a private airstrip.

## Noise Exposure in Excess of Local Standards

This section analyzes noise exposure to new residents under buildout of the Specific Plan for informational purposes only. The Second District Court of Appeal found in 2011 that analysis of impacts of the environment on a project is not required for CEQA compliance (*Ballona Wetlands Land Trust et al. v. City of Los Angeles*). To evaluate the exposure of new residences on the project site to ambient noise, existing ambient noise levels were compared to City standards for new residences. Pursuant to Policy EM-47 in the City's General Plan, noise exposure of up to 60 dBA Ldn is considered normally acceptable; noise levels of between 60 and 75 dBA Ldn are conditionally acceptable and would require detailed analysis of noise reduction requirements and noise insulation features; and any noise level above 75 dBA Ldn is considered unacceptable because mitigation is not usually feasible. It is assumed that exterior materials used in modern buildings reduce exterior noise by about 25 dBA Ldn in the interior environment. Estimated interior noise levels were compared to the California Building Code and City standard of 45 dBA Ldn.

## Temporary Noise Increase from Construction

Temporary increases in ambient noise from construction activity under buildout of the Specific Plan were estimated based on reference noise levels reported by the FTA for typical pieces of construction equipment. Reference noise levels at a distance of 50 feet from the source were applied from the FTA's *Transit Noise and Vibration Impact Assessment Manual* (2018). From this reference distance, noise levels were estimated at nearby sensitive receptors based on a standard noise attenuation rate of 6 dBA per doubling of distance from point sources. This analysis assumes the use of typical construction equipment for residential and commercial development. Construction noise level estimates do not account for the presence of intervening structures or topography, which could reduce noise levels at receptor locations. Therefore, the estimated construction noise levels represent a conservative estimate of actual construction noise. The Specific Plan would have a significant impact if construction noise occurs outside of permitted hours or occurs during permitted daytime hours in excess of the noise standards for stationary equipment in commercial zones shown in Table 4.9-4.

## Groundborne Vibration

The exposure of people to groundborne vibration during construction in the Plan Area was estimated based on reference levels provided for construction equipment in the FTA's *Transit Noise and Vibration Impact Assessment Manual* (2018). A formula in this FTA document was used to calculate the attenuation of vibration from a reference distance of 25 feet to the distances of the nearest noise-sensitive receptors:

$$PPV = PPV_{ref} \times (25/D)^n \text{ (in/sec)}$$

This formula takes into account the reference vibration level ( $PPV_{ref}$ ), the distance from vibration-generating equipment to the receptor ( $D$ ), and a constant value related to the attenuation rate through the ground ( $n$ ). The  $n$ -value is assumed to be 1.1, Caltrans' suggested value for conservative analysis.

The vibration analysis applies the following vibration thresholds established by the FTA for disturbance of people: 65 VdB for buildings where low ambient vibration is essential for

interior operations (such as hospitals and recording studios), 72 VdB for residences and buildings where people normally sleep, including hotels, and 75 VdB for institutional land uses with primary daytime use (such as churches and schools). These thresholds apply to “frequent events,” which the FTA defines as vibration events occurring more than 70 times per day. The thresholds for frequent events are considered appropriate because of the scale and duration of potential construction activity.

In addition, this analysis applies FTA thresholds for potential damage from construction vibration (FTA 2018). Table 4.9-5 shows these thresholds, which are expressed in terms of maximum inches per second (in/sec) of peak particle velocity (PPV) and vibration decibels (VdB):

**Table 4.9-5 Vibration-Related Building Damage Thresholds**

Building/Structural Category	PPV (in/sec)	Approximate $L_v$ <sup>1</sup>
Reinforced-concrete, steel or timber (no plaster)	0.5	102
Engineered concrete and masonry (no plaster)	0.3	98
Non-engineered timber and masonry buildings	0.2	94
Buildings extremely susceptible to vibration damage	0.12	90

<sup>1</sup> Root mean square velocity in terms of vibration decibels (VdB) re 1 micro-inch per second.

in/sec = inches per second

PPV = peak particle velocity

Source: FTA 2018

## Permanent Noise Increase from On-Site Operational Activity

The exposure of noise-sensitive receptors to on-site operational noise from new residential and commercial development in the Plan Area was estimated based on reference noise levels for on-site activity. A standard attenuation rate of 6 dBA per doubling of distance from point sources was assumed from the reference distance to the nearest noise-sensitive receptors. Noise estimates were compared to the City of Berkeley exterior noise standards shown in Table 4.9-2. Noise measurements taken in the Plan Area on November 6, 2018 (Table 4.9-1) were above the 65 dBA Leq City of Berkeley threshold for commercial zones. According to the Berkeley Municipal Code Section 13.40.050 the measured ambient noise level becomes the noise standard. For the purposes of a conservative noise analysis, the lowest measured ambient noise level of 67.6 dBA Leq in the Plan Area was used to determine the significance for noise-sensitive receptors.

## Permanent Noise Increase from Traffic

Noise levels associated with existing and future traffic along area roadways were estimated by completing a screening analysis for project-generated traffic. Existing daily traffic volumes on the primary arterial roadways that run through the Plan Area, Adeline Street and Shattuck Avenue, were compared with the expected daily traffic volume under existing conditions and 2040 cumulative development both with and without implementation of the Specific Plan, using traffic volumes provided by Fehr & Peers (see Section 4.12, *Transportation and Traffic*).

Modeling of traffic noise indicates that when traffic volumes increase by certain percentages, traffic noise increases by predictable amounts. For example, a 10 percent

increase in traffic volume would raise traffic noise by approximately 0.4 dBA, a 20 percent increase would raise traffic noise by about 0.8 dBA, a 30 percent increase would result in an approximately 1.1 dBA increase in traffic noise, and a 100 percent increase would increase traffic noise by about 3 dBA. This screening analysis evaluates the Specific Plan’s effect on traffic noise based on the FTA’s recommended standards. The FTA recommendations, listed in Table 4.9-6, 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.

**Table 4.9-6 Significance of Changes in Operational Roadway Noise Exposure**

Existing Noise Exposure (dBA Ldn or Leq)	Maximum Noise Exposure Increase (dBA Ldn or Leq)
45-50	7
50-55	5
55-60	3
60-65	2
65-74	1
75+	0

Source: FTA 2018

The FTA standards in Table 4.9-6 were applied to existing and 2040 buildout conditions under the Specific Plan to evaluate traffic noise impacts.

**b. Project Impacts and Mitigation Measures**

**Threshold:** Would the Specific Plan expose persons to or generate noise levels in excess of standards established in the local general plan, noise ordinance, or applicable standards of other agencies?

**IMPACT N-1** NEW DEVELOPMENT FACILITATED BY THE PROPOSED SPECIFIC PLAN WOULD BE REQUIRED TO COMPLY WITH THE CITY’S EXTERIOR NOISE STANDARDS AND WITH THE STATE STANDARD FOR THE EXPOSURE OF HABITABLE ROOMS TO NOISE. THE IMPACT RELATED TO EXPOSING PEOPLE OR GENERATING NOISE LEVELS IN EXCESS OF STANDARDS WOULD BE LESS THAN SIGNIFICANT.

Buildout under the proposed Specific Plan would have a significant noise impact if it exposes people to or generates noise levels in excess of applicable exterior and interior noise standards. As shown in Table 4.9-1, noise levels during peak traffic hours along Adeline Street in the Plan Area were measured from 67.6 to 68.3 dBA Leq between Shattuck Avenue and the Ashby BART Station. The highest noise levels were measured at 74.7 dBA Leq near Martin Luther King Jr. Way, which is a roadway with high traffic volumes.

As described in the Setting, in urban areas near heavy traffic, the peak hourly Leq is typically 2-4 dBA lower than the daily Ldn or CNEL. Therefore, based on the on-site noise measurements, this analysis estimates that new residences in the Plan Area could be exposed to traffic noise between 69.6 and 78.7 dBA Ldn. These estimates are conservative because they assume that new multi-family residential buildings would be constructed flush with sidewalks, near the noise measurements locations, although most existing apartment

buildings on Adeline Street in the Plan Area are set back farther from on-street traffic. Nonetheless, ambient noise levels could potentially exceed 75 dBA Ldn along Adeline Street near Martin Luther King Jr. Way.

When individual residential projects are proposed in the Plan Area, the City would require a detailed site-specific analysis of their exposure to ambient noise prior to project approval, pursuant to Policy EM-47 in the General Plan and the following City of Berkeley standard condition of approval:

Interior Noise Levels. Prior to issuance of a building permit, the applicant shall submit a report to the Building and Safety Division and the Zoning Officer by a qualified acoustic engineer certifying that the interior residential portions of the project will achieve interior noise levels of no more than 45 Ldn (Average Day-Night Levels). If the adopted Building Code imposes a more restrictive standard for interior noise levels, the report shall certify compliance with this standard.

It is anticipated that ambient noise at project sites would typically be within the City's conditionally acceptable range of 60 to 75 dBA Ldn, based on the above analysis of traffic noise in the Plan Area. The City requires that individual projects undergo a detailed analysis of noise exposure and insulation features needed to attain acceptable interior noise levels below the California Building Code's standard of 45 dBA Ldn. Exterior materials used in new residential buildings would reduce exterior traffic noise by an estimated 25 dBA Ldn in the interior environment. Given this typical 25-dBA reduction, it is assumed that new residences may require additional noise insulation features beyond standard building materials where ambient noise exceeds 70 dBA Ldn, in order to attain the standard of 45 dBA Ldn in habitable rooms. Under Policy EM-47, the City also may restrict new residential development in areas where ambient noise is determined to exceed 75 dBA Ldn, or require that projects incorporate additional noise insulation features to meet the interior standard of 45 dBA Ldn.

New development facilitated by the proposed Specific Plan also would be subject to standards in Section 13.40, Community Noise, of the Berkeley Municipal Code to minimize on-site operational noise. This section sets acceptable exterior and interior noise levels in certain zones which apply to noise generated by activities on properties. Adherence to these quantitative standards would ensure consistency with the City's noise ordinance, protecting nearby sensitive receptors from exposure to excessive noise.

Therefore, the Specific Plan would not result in the exposure to people to noise levels in excess of applicable standards. This impact would be less than significant.

### **Mitigation Measures**

No mitigation is required.

**Threshold:** Would the Specific Plan result in a substantial temporary or periodic increase in ambient noise levels in the Plan Area and vicinity above levels existing without the Plan?

**IMPACT N-2** CONSTRUCTION ACTIVITIES ASSOCIATED WITH IMPLEMENTATION OF THE PROPOSED SPECIFIC PLAN WOULD INTERMITTENTLY GENERATE HIGH NOISE LEVELS WITHIN AND ADJACENT TO THE PLAN AREA. MITIGATION TO RESTRICT THE HOURS OF CONSTRUCTION ACTIVITY AND MINIMIZE NOISE FROM EQUIPMENT WOULD REDUCE CONSTRUCTION NOISE TO THE EXTENT FEASIBLE. HOWEVER, CONSTRUCTION NOISE COULD STILL EXCEED THE CITY'S STANDARDS AT SENSITIVE RECEPTORS. THEREFORE, THE IMPACT FROM CONSTRUCTION NOISE WOULD BE SIGNIFICANT AND UNAVOIDABLE.

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During implementation of the proposed Specific Plan, residences and businesses located adjacent to new development would be exposed to temporary construction noise. Major noise-generating construction activities in the Plan Area could include demolition, site grading and excavation, building construction, and paving. Construction activities result in the greatest disturbance when they occur during normal sleeping hours, in areas immediately adjacent to noise-sensitive land uses, or over extended periods of time. Construction could occur in close proximity to existing noise-sensitive receptors or future ones within and near the Plan Area. As discussed in the Setting, multi-family apartment buildings in the C-SA zoning district line Shattuck Avenue, Adeline Street, and Martin Luther King Jr. Way within the Plan Area, in addition to other noise-sensitive receptors including religious and educational land uses. Residential neighborhoods zoned R-2A are also located in the Plan Area to the west of Shattuck Avenue. Other residences in the R-2 and R-2A zones are located adjacent to the Plan Area, to the east and west.

Table 4.9-7 shows estimated maximum noise levels from construction equipment at distances of 25, 50, and 100 feet. The distance of 25 feet is conservatively representative of average noise levels at noise-sensitive receptors located adjacent to construction activity.

**Table 4.9-7 Maximum Estimated Noise Levels from Construction Equipment**

Equipment	Estimated Noise Levels at Nearest Sensitive Receptors (dBA Leq)		
	25 Feet	50 Feet	100 Feet
Air Compressor	86	80	74
Backhoe	86	80	74
Compactor (ground)	88	82	76
Concrete Mixer	91	85	79
Generator	88	82	76
Grader	91	85	79
Loader	86	80	74
Paver	91	85	79
Pile-driver (Impact)	107	101	95
Pile-driver (Sonic)	101	95	89
Pneumatic Tools	91	85	79
Roller	91	85	79
Saw	82	76	70
Truck	90	84	78

Source: FTA 2018

Impact or sonic pile drivers could generate the highest noise levels of more than 100 dBA within 50 feet. Pile drivers are most often used to set pile foundations for new buildings that are at least four stories in height (including subterranean levels). Under the proposed Specific Plan, new buildings between three and four stories tall would be allowed under “Base Standards” and greater heights would be allowed in certain subareas of the Plan Area dependent on the provision of community benefits in the form of specified amounts of affordable housing on-site. Therefore, it is assumed that pile drivers may be used in the Plan Area. With the exception of pile drivers, the site grading and paving phases of construction would typically generate the highest noise levels. Graders, pavers, and vibratory rollers would create noise estimated at 91 dBA Leq, respectively, at a distance of 25 feet. Construction noise would drop off at a rate of about 6 dBA per doubling of distance between the noise source and receptor. Intervening structures or terrain would also attenuate noise and would reduce noise levels.

For noise-sensitive receptors in the Plan Area, which are primarily located in the C-SA zoning district, the City’s standards for construction noise in commercial zones (shown in Table 4.9-4) would apply.<sup>1</sup> Estimated noise levels above 90 dBA Leq from construction activity would exceed these standards of 70 dBA for stationary sources on weekdays and 60 dBA for stationary sources on weekends and holidays (if construction were to occur during these time periods). For receptors located in the R-2 and R-2A zoning districts in and adjacent to the Plan Area, the City’s standards for construction noise in lower-density

<sup>1</sup> Section 13.40.070(B)(7) of the Berkeley Municipal Code sets maximum sound levels for construction and demolition activities based on the zoning district in which affected properties are located. These noise standards are not based on the individual land use at an affected property. Different noise standards apply to properties in the R-1 and R-2 residential zones, in the R-3 and above multi-family residential zones, and in commercial and industrial zones.

residential areas would apply: 60 dBA for stationary sources on weekdays and 50 dBA for stationary sources on weekends and holidays. Estimated construction noise from new development in the Plan Area would also exceed these standards. Therefore, the impact of temporary construction noise on sensitive receptors would be potentially significant.

## Mitigation Measures

The following mitigation measure is required.

### *Mitigation Measure N-2 Construction-Related Noise Reduction Measures*

Development projects in the Plan Area that involve construction activities shall apply the following measures during construction for the purpose of reducing construction-related noise:

- **Construction Timing.** Construction activities shall be restricted to the daytime hours of between 7:00 AM and 7:00 PM on weekdays, or between 9:00 AM and 8:00 PM on weekends and legal holidays.
- **Mufflers.** Construction equipment shall be properly maintained and all internal combustion engine driven machinery with intake and exhaust mufflers and engine shrouds, as applicable, shall be in good condition and appropriate for the equipment. During construction, all equipment, fixed or mobile, shall be operated with closed engine doors and shall be equipped with properly operating and maintained mufflers, consistent with manufacturers' standards.
- **Electrical Power.** Electrical power, rather than diesel equipment, shall be used to run compressors and similar power tools and to power any temporary structures, such as construction trailers or caretaker facilities.
- **Foundation Piles.** If impact pile driving is required, the foundation pile holes shall be pre-drilled to minimize the number of impacts required to seat the pile.
- **Equipment Staging.** All stationary equipment shall be staged as far away as feasible from adjacent noise-sensitive receptors.
- **Equipment Idling.** Construction vehicles and equipment shall not be left idling for longer than five minutes when not in use.
- **Workers' Radios.** All noise from workers' radios shall be controlled to a point that they are not audible at sensitive receptors near construction activity.
- **Smart Back-up Alarms.** Mobile construction equipment shall have smart back-up alarms that automatically adjust the sound level of the alarm in response to ambient noise levels. Alternatively, back-up alarms shall be disabled and replaced with human spotters to ensure safety when mobile construction equipment is moving in the reverse direction.
- **Construction Vehicles.** Construction-related traffic shall be routed along major roadways and away from sensitive receptors where feasible.
- **Disturbance Coordinator.** The applicant shall designate a disturbance coordinator who shall be responsible for responding to any local complaints about construction noise. The noise disturbance coordinator shall determine the cause of the noise complaint (e.g., starting too early, bad muffler, etc.) and shall require that reasonable measures

warranted to correct the problem be implemented. A telephone number for the disturbance coordinator shall be conspicuously posted at the construction site.

- **Additional Noise Attenuation Techniques.** During construction activity that is immediately adjacent to noise-sensitive receptors, temporary sound barriers may be installed and maintained, at the discretion of the City's Department of Planning and Development. Temporary sound barriers, if installed, shall block line of sight between noise-generating construction equipment and adjacent residential windows, shall be solid (e.g., plywood), and shall be placed as close to the source equipment as feasible. Mobile sound barriers may be used as appropriate to attenuate construction noise near the source equipment. During the building construction phase, temporary sound barriers may be applied to generators and cranes used on-site.

### Significance After Mitigation

Without implementation of mitigation measures, it is estimated that construction activity in the Plan Area would expose sensitive receptors to noise levels exceeding 90 dBA Leq. With implementation of Mitigation Measure N-2, individual projects developed under the proposed Specific Plan would minimize the exposure of sensitive receptors to construction noise, to the extent feasible. Nonetheless, sensitive receptors located adjacent to construction sites in the Plan Area would still be exposed to substantial noise levels from construction activity. To meet the City's quantitative standards for construction noise from stationary sources, reductions of at least 30 dBA Leq in the C-SA zoning district and 40 dBA Leq in the R-2 and R-2A zoning districts may be necessary. It is expected that implementation of Mitigation Measure N-2 would not be sufficient to fully attain these reductions in construction noise. Therefore, the impact from construction noise would be significant and unavoidable.

<b>Threshold:</b> Would the Specific Plan expose persons to or generate excessive groundborne vibration or groundborne noise?
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**IMPACT N-3** CONSTRUCTION ACTIVITIES ASSOCIATED WITH IMPLEMENTATION OF THE PROPOSED SPECIFIC PLAN WOULD INTERMITTENTLY GENERATE GROUND BORNE VIBRATION WITHIN AND ADJACENT TO THE PLAN AREA. INSTITUTIONAL LAND USES WITH SENSITIVE DAYTIME ACTIVITIES COULD BE EXPOSED TO VIBRATION LEVELS EXCEEDING FTA GUIDELINES. THIS IMPACT WOULD BE SIGNIFICANT BUT MITIGABLE TO LESS THAN SIGNIFICANT.

Construction activity during buildout of the proposed Specific Plan could intermittently generate strong vibration within and near the Plan Area. The demolition, excavation, site grading, building erection, and paving phases of construction could involve the use of equipment that causes vibration.

Table 4.9-8 shows estimated maximum vibration levels at noise-sensitive receptors located 25, 50, 100, and 200 feet from construction activity.

**Table 4.9-8 Vibration Levels for Construction Equipment at Noise-Sensitive Receptors**

Equipment	Estimated VdB at Nearest Sensitive Receptors			
	25 Feet	50 Feet	100 Feet	200 Feet
Pile-driver (Impact, typical)	104	95	86	68
Pile-driver (Sonic, typical)	93	84	75	56
Vibratory Roller	94	85	76	58
Large Bulldozer	87	78	69	51
Loaded Trucks	86	77	68	49
Small Bulldozer	58	48	39	21

Sources: FTA 2018

As shown in Table 4.9-8, pile driving could produce the strongest vibration during construction. This equipment would generate estimated vibration levels of greater than 100 VdB at a distance of 25 feet and 95 VdB at 50 feet. The use of vibratory rollers during paving also would generate estimated vibration levels of 94 VdB at 25 feet and 85 VdB at 50 feet. Vibration levels from pile drivers, vibratory rollers, bulldozers, and loaded trucks could exceed 72 VdB at residences located within 50 feet. However, pursuant to Mitigation Measure N-2, construction activity under the proposed Specific Plan would be restricted to the hours of 7:00 AM to 7:00 PM on weekdays, and from 9:00 AM to 8:00 PM on weekends and legal holidays. Adherence to these daytime and early evening hours would avoid substantial disturbance of sleep at residences.

During allowed construction hours, institutional land uses with daytime activities that are sensitive to vibration may be exposed to vibration generated by new development in the Plan Area. These sensitive land uses include houses of worship (especially St. John the Baptist Russian Orthodox Church on Essex Street, St. Paul A.M.E. Church on Ashby Avenue by Adeline Street, and the Phillips Temple C.M.E. Church on Adeline Street north of 63rd Street) and educational activities at the Ed Roberts Campus. It is assumed that construction equipment on adjacent sites could generate vibration as close as 50 feet from these land uses. As shown in Table 4.9-8, vibration levels could reach 95 VdB at this distance, with the use of pile drivers, and 85 VdB without pile drivers. At a distance of 100 feet, vibration levels would reach an estimated 76 VdB without pile drivers. These vibration levels would exceed the FTA guideline of 75 VdB at sensitive institutional land uses. Vibration from the use of pile drivers also could exceed 100 VdB at potentially fragile historic buildings, the general threshold where minor cosmetic damage can occur in such buildings.

Vibration from daytime construction activity would have a potentially significant impact on sensitive receptors and fragile buildings.

### Mitigation Measure

The following mitigation measure is required.

### Mitigation Measure N-3      Vibration Reduction Measures

Applicants for new development that would involve construction activity in the Plan Area shall implement the following measures to reduce exposure to vibration from construction activities:

- **Best Available Technology.** The applicant shall use the best available technology to reduce construction-related vibration on construction sites within 100 feet of institutional land uses that are sensitive to vibration, and within 50 feet of historic buildings, so that vibration levels do not exceed guidelines in the Federal Transit Administration's *Transit Noise and Vibration Impact Assessment Manual* for annoyance and damage to fragile structures. Appropriate technology may include, but is not limited to:
  - Drilling of piles instead of pile driving for foundation work
  - Static rollers instead of vibratory rollers for paving activity
  - Smaller and well-maintained equipment
- **Construction Scheduling.** The applicant shall coordinate with adjacent institutional land uses that are sensitive to vibration and schedule vibration-generating construction activities during less sensitive times of day.

### Significance After Mitigation

With implementation of Mitigation Measure N-3, individual projects developed under the proposed Specific Plan would avoid the use vibration-generating equipment near sensitive receptors and potentially fragile buildings, where possible, or schedule such construction activity to less sensitive times of day. These measures would ensure that sensitive daytime activities at institutional land uses are not subject to vibration levels exceeding the FTA guideline of 75 VdB, and that historic buildings are not exposed to vibration levels exceeding the threshold of 100 VdB for minor cosmetic damage. Therefore, the impact of vibration generated by construction equipment would be less than significant after mitigation.

**Threshold:** Would the Specific Plan result in a substantial permanent increase in ambient noise levels in the Plan Area and vicinity above levels existing without the Plan?

**IMPACT N-4              BUILDOUT OF THE PROPOSED SPECIFIC PLAN WOULD GENERATE NEW VEHICLE TRIPS IN THE PLAN AREA. ALTHOUGH NEW VEHICLE TRIPS WOULD INCREASE TRAFFIC VOLUMES AND ASSOCIATED TRAFFIC NOISE ON ARTERIAL ROADWAYS IN THE PLAN AREA, THE INCREASE IN TRAFFIC NOISE WOULD NOT EXCEED APPLICABLE FTA CRITERIA. THEREFORE, THE SPECIFIC PLAN WOULD HAVE A LESS THAN SIGNIFICANT IMPACT RELATED TO TRAFFIC NOISE.**

The proposed Specific Plan would affect ambient traffic noise by facilitating growth in vehicle trips. As discussed in Section 2, *Project Description*, buildout of the Specific Plan would involve development of an estimated 1,450 housing units and 65,000 square feet of new commercial space. This increase in residential and commercial density would generate new vehicle trips in the Plan Area. Existing arterial routes in the Plan Area, especially Adeline Street, would accommodate the majority of new trips.

Table 4.9-9 shows the proposed Specific Plan's effect on existing traffic volumes on the primary arterial routes that run through the Plan Area, Adeline Street and Shattuck Avenue, according to traffic data from Fehr & Peers (2018).

Table 4.9-9 shows the proposed Specific Plan’s effect on existing traffic volumes on the primary arterial routes that run through the Plan Area, Adeline Street and Shattuck Avenue, according to traffic data from Fehr & Peers (2018).

**Table 4.9-9 Existing Plus Plan Roadway Traffic Levels during AM Peak Hour**

Roadway Segment	Existing AM Peak Hour Trips	New Project-Generated Trips	Percentage Increase from New Trips
<b>Shattuck Avenue</b>			
Dwight Way to Parker Street	2,165	98	+4.5%
Parker Street to Carleton Street	2,109	104	+4.9%
Carleton Street to Adeline Street	2,103	106	+5.0%
<b>Adeline Street</b>			
Shattuck Avenue to Ashby Avenue	1,305	70	+5.4%
Ashby Avenue to Martin Luther King Jr. Way	1,336	52	+3.9%
Martin Luther King Jr. Way to Alcatraz Avenue	2,811	117	+4.2%
Alcatraz Avenue to Stanford Avenue	2,929	71	+2.4%

Source: Fehr & Peers 2019; see Appendix E

As shown in Table 4.9-9, new vehicle trips generated by buildout of the Specific Plan would increase daily traffic volumes by up to an estimated 5.4 percent, on the segment of Adeline Street from Shattuck Avenue to Ashby Avenue. A 10 percent increase would raise traffic noise by about 0.4 dBA Leq. Because existing ambient noise was measured at between 65 and 75 dBA Leq on this segment of Adeline Street during peak hours, an increase of at least 1 dBA Leq would be significant according to FTA criteria. Therefore, the Specific Plan would have a less than significant impact related to increases in existing traffic noise.

### Mitigation Measures

No mitigation is required.

**Threshold:** Would the Specific Plan result in a substantial permanent increase in ambient noise levels in the Plan Area and vicinity above levels existing without the Plan?

**IMPACT N-5** OPERATIONAL ACTIVITIES ASSOCIATED WITH BUILDOUT OF THE SPECIFIC PLAN WOULD GENERATE NOISE THAT MAY PERIODICALLY BE AUDIBLE TO NOISE-SENSITIVE RECEPTORS NEAR THE PLAN AREA. NOISE SOURCES WOULD INCLUDE STATIONARY EQUIPMENT, SUCH AS ROOFTOP VENTILATION AND HEATING SYSTEMS, AND DELIVERY AND TRASH HAULING TRUCKS. HOWEVER, OPERATIONAL NOISE WOULD NOT EXCEED AMBIENT NOISE LEVELS AT NEARBY NOISE-SENSITIVE RECEPTORS. THEREFORE, OPERATIONAL NOISE IMPACTS WOULD BE LESS THAN SIGNIFICANT.

New residential, commercial, and other development in the Plan Area would introduce on-site noise sources such as rooftop-mounted heating, ventilation, and air conditioning (HVAC) equipment; and trucks for deliveries and trash hauling.

## Heating, Ventilation, and Air Conditioning Equipment

Rooftop-mounted HVAC equipment serving new development in the Plan Area could be located adjacent to existing or new residences. Noise levels from commercial HVAC systems are typically in the range of 60 to 70 dBA Leq at a distance of 15 feet from the source (Illingworth & Rodkin, Inc. 2015). Based on this noise range, it is assumed that noise-sensitive receptors located as close as 50 feet to HVAC units would not be exposed to equipment noise exceeding 60 dBA Leq. As shown in Table 4.9-1, existing ambient noise levels along Adeline Street in the Plan Area were measured between 67.6 and 74.7 dBA Leq. The estimated noise level from HVAC equipment at the nearest noise-sensitive receptors would not exceed these measured ambient noise levels. Therefore, the addition of HVAC systems would have a less than significant impact.

## Delivery and Trash Hauling Trucks

Maximum noise levels generated by passages of medium duty delivery trucks generally range from 61 to 70 dBA Leq at a distance of 25 feet, depending on the speed at which the truck is driving (Olson 1972). The average noise level for a single idling truck generally ranges from 72 to 77 dBA Leq at a distance of 25 feet. Based on an attenuation rate of 6 dBA per doubling of distance, the maximum anticipated noise levels from delivery and hauling trucks on Adeline Street at a distance of 50 feet would range from 66 to 71 dBA Leq. This range of noise levels would be similar to the existing measured ambient noise levels of 67.6 to 74.7 dBA Leq next to Adeline Street in the Plan Area. Therefore, the impact from on-site noise generated by delivery and trash hauling trucks would be less than significant.

## Mitigation Measures

No mitigation is required.

<p><b>Threshold:</b> Would the Specific Plan expose people residing or working in the project area to excessive noise levels 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?</p> <p><b>Threshold:</b> Would the Specific Plan expose people residing or working in the project area to excessive noise levels within the vicinity of a private airstrip?</p>
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**IMPACT N-6** THE PLAN AREA IS LOCATED OUTSIDE OF NOISE CONTOURS ASSOCIATED WITH AIRPORTS. THEREFORE, NEW DEVELOPMENT UNDER BUILDOUT OF THE SPECIFIC PLAN WOULD NOT BE EXPOSED TO EXCESSIVE NOISE LEVELS FROM AIRCRAFT OPERATIONS, AND NO IMPACT WOULD OCCUR.

The nearest airport to the Plan Area, Oakland International Airport, is located approximately 8.5 miles to the south. Although individual aircraft in the vicinity of the Plan Area are occasionally audible, the Plan Area is well outside of the noise contours associated with nearby airports. No private airstrips are located in the vicinity. Therefore, new development under buildout of the proposed Specific Plan would not be exposed to adverse noise from aircraft overflights. No impact would occur.

## Mitigation Measures

No mitigation is required.

### c. Cumulative Impacts

Under cumulative growth, new noise-sensitive land uses could be located in areas that exceed normally acceptable noise levels. However, as discussed in Impact N-1, new development in Berkeley would only be allowed where it can comply with the City’s land use compatibility guidelines and standards, with the inclusion of noise insulation features where necessary. The use of techniques to minimize noise intrusion at all new development in the Plan Area would be expected to maintain an acceptable noise environment. Therefore, cumulative development would not have a significant impact related to exceedance of noise standards.

Cumulative development near the Plan Area would generate temporary noise and vibration during construction. However, construction noise and vibration are localized and rapidly attenuate in an urban environment. It is also anticipated that construction of other projects outside the Plan Area would not occur at the same time and sufficiently close to projects within the Plan Area to result in a cumulative impact. In addition, applicants for new development throughout Berkeley, including in the Plan Area, would be required to meet the City’s quantitative standards for construction noise as shown in Table 4.9-4.

Table 4.9-10 shows the proposed Specific Plan’s cumulative contribution to traffic volumes on the primary arterial routes that run through the Plan Area, Adeline Street and Shattuck Avenue, according to traffic data from Fehr & Peers (2018).

**Table 4.9-10 Cumulative Contribution to AM Peak Hour Roadway Traffic Levels in Future Year 2040**

Roadway Segment	Existing AM Peak Hour Trips	Cumulative + Project Increase	Percentage Increase from Cumulative Trips	Percent of Cumulative Increase Due to Project
<b>Shattuck Avenue</b>				
Dwight Way to Parker Street	2,165	663	+30.6%	+14.8%
Parker Street to Carleton Street	2,109	665	+31.5%	+15.6%
Carleton Street to Adeline Street	2,103	663	+31.5%	+16.0%
<b>Adeline Street</b>				
Shattuck Avenue to Ashby Avenue	1,305	405	+31.0%	+17.3%
Ashby Avenue to Martin Luther King Jr. Way	1,336	396	+29.6%	+13.1%
Martin Luther King Jr. Way to Alcatraz Avenue	2,811	866	+30.8%	+13.5%
Alcatraz Avenue to Stanford Avenue	2,929	832	+28.4%	+8.5%

Source: Fehr & Peers 2019; see Appendix E

As shown in Table 4.9-10, cumulative growth in combination with implementation of the Specific Plan would increase daily traffic volumes by up to an estimated 31.5 percent, on the segments of Shattuck Avenue from Parker Street to Adeline Street. An approximately 30 percent increase would raise traffic noise by about 1.1 dBA Leq. Because existing peak-hour ambient noise was measured at 68.3 dBA Leq on Adeline Street next to this segment of Shattuck Avenue, an increase of at least 1 dBA Leq would be significant according to FTA criteria. Therefore, the cumulative traffic noise impact would be significant.

Although cumulative growth would substantially increase traffic noise in the Plan Area relative to existing conditions, the proposed Specific Plan would not considerably contribute to this effect. As shown in Table 4.9-9, it is estimated that the Specific Plan would contribute

up to 16 percent of increased traffic on Shattuck Avenue from Parker Street to Adeline Street. The Specific Plan's greatest contribution to the cumulative increase in traffic volumes, an estimated 17.3 percent, would occur on Adeline Street from Shattuck Avenue to Ashby Avenue. These contributions of less than 20 percent would not be considerable relative to overall cumulative growth in traffic volumes. Furthermore, a 20 percent increase in traffic volumes would raise traffic noise along roadway segments by about 0.8 dBA Leq, which would not be perceptible to people. Therefore, the proposed Specific Plan would not have a considerable contribution to a significant impact related to traffic noise in the Plan Area.

Cumulative development would also add sources of on-site operational noise in and near the Plan Area. It is expected that new residential, commercial, and other development would involve the operation of HVAC equipment and loading and trash hauling trucks. However, like development under the Specific Plan, typical operational noise associated with cumulative development would not increase ambient noise levels by over 3 dBA. Impacts associated with operational noise would not be cumulatively considerable.

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## 4.10 Population and Housing

This section describes the population, housing, and employment characteristics of the Plan Area and evaluates the potential impacts related to population and housing that could result from adoption and implementation of the proposed Specific Plan. As described in Section 2, *Project Description*, a reasonable and conservative estimate of buildout associated with adoption and implementation of the proposed Specific Plan through the horizon year 2040 would include the development of 1,450 housing units and 65,000 square feet of commercial space (net).

### 4.10.1 Setting

#### a. Current Population and Housing

Because the Plan Area has too few residential uses to allow for meaningful analysis of demographic data, this analysis is based on data from a geographic area that is larger than the Plan Area itself and is referred to as the “Study Area.” The Study Area used for the estimates in this section consists of 2010 Census Tracts 4234, 4235, 4239.01 and 4240.01<sup>1</sup>. Table 4.10-1 provides the most recent estimates of population and housing for the Study Area and Berkeley as a whole. According to the most recent United States Census estimates, the Study Area has an estimated 6,378 housing units and 5,959 households (occupied housing units), with an estimated population of 14,709. The estimated population of Berkeley is 118,585, based on the most recent reliable census data (2016).

**Table 4.10-1 Current Population and Housing Stock**

	Study Area	City of Berkeley
Population	14,709	118,585
Households	5,959	45,923
Average Household Size	2.39	2.31
Owner-occupied Units	2.65	2.52
Renter-occupied Units	2.25	2.15
Housing Units	6,378	49,552
Vacant Housing Units	419 (6.6%)	3,629 (7.3%)
Occupied Housing Units	5,959 (93.4%)	45,923 (92.7%)
Owner-occupied	2,164 (36.3%)	19,556 (42.6%)
Renter-occupied	3,795 (63.7%)	26,367 (57.4%)

Source: U.S. Census Bureau, 2012-2016 American Community Survey 5-Year Estimates

<sup>1</sup> A map of the “Greater Plan Area” is provided in Figure 3.1 Study Area for Demographic Analysis, of the Existing Conditions Report (2015).

## Household Composition

The Study Area is generally similar to the rest of Berkeley with respect to household composition. As shown in Table 4.10-1, the average household size in the Study Area was 2.39 persons in 2016, slightly larger than the citywide average (2.31 persons).

## Tenure

Approximately two-thirds of housing units in the Study Area are rental units, a higher proportion than in Berkeley as a whole (which itself has a high proportion of rental units compared to the greater Bay Area). Renter-occupied units comprise 64 percent of units in the Study Area and 58 percent of units in Berkeley overall.

## b. Population, Housing, and Employment Projections

Table 4.10-2 shows population, housing, and employment projections for the Study Area and for Berkeley based on the latest ABAG growth forecasts. According to these projections, without the proposed Specific Plan the Study Area is anticipated to experience moderate population and household growth. The Study Area’s population is projected to increase by 2,745 people between 2016 and 2040, a 19 percent increase. The rate of population growth is projected to be 19 percent in Berkeley during the same time period.

ABAG projections anticipate relatively small employment growth in the Study Area between 2016 and 2040. ABAG projects that the Study Area will gain 344 jobs during this period, a 7 percent increase. Meanwhile, employment is projected to increase by 48 percent in Berkeley.

**Table 4.10-2 ABAG Population, Housing, and Employment Projections**

	2016		2040		2016-2040 Growth	
	Study Area	City of Berkeley	Study Area	City of Berkeley	Study Area (Percent Increase)	City of Berkeley (Percent Increase)
Population	14,709	118,585	17,454	140,900	2,745 (19%)	22,315 (19%)
Households	5,959	45,923	7,208	55,400	1,246 (21%)	9,477 (21%)
Employment <sup>1</sup>	5,013	82,237	5,357	121,700	344 (7%)	39,463 (48%)

<sup>1</sup>The estimates for 2016 employment are ABAG’s estimates for 2015, as estimates for 2016 are not available.

Source: U.S. Census Bureau, 2012-2016 American Community Survey 5-Year Estimates; Plan Bay Area 2040, ABAG and MTC 2017

## c. Regulatory Setting

### California Housing Law

California Housing Element law (Government Code Sections 65580 to 65589.8) requires that local jurisdictions outline the housing needs of their community, the barriers or constraints to providing that housing, and actions proposed to address these concerns over an eight-year planning period. In addition, Housing Element law requires each city and county to accommodate its “fair share” of the region’s projected housing need over the Element planning period. Cities and counties must demonstrate that adequate sites are

available to accommodate this need, and that the jurisdiction allows for development of a variety of housing types. This housing need requirement is known as the Regional Housing Needs Allocation (RHNA) and apportions to each jurisdiction its portion of the Bay Area's projected need (City of Berkeley 2015).

### **Association of Bay Area Governments**

ABAG is the regional planning agency for the San Francisco Bay Area, which is composed of the nine Counties of Alameda, Contra Costa, Marin, Napa, San Francisco, San Mateo, Santa Clara, Solano, and Sonoma and contains 101 cities. ABAG produces growth forecasts in four-year cycles so that other regional agencies, including the MTC and the BAAQMD, can use the forecasts to make funding and regulatory decisions.

The ABAG projections are the basis for the Regional Transportation Plan (RTP), regional Ozone Attainment Plan, the BAAQMD's Clean Air Plan, and the EBMUD's Urban Water Management Plan. In this way, ABAG projections have practical consequences that shape growth and environmental quality. General plans, zoning regulations, and growth management programs of local jurisdictions inform the ABAG projections. The projections are also developed to reflect the impact of "smart growth" policies and incentives that could be used to shift development patterns from historical trends toward a better jobs-housing balance, increased preservation of open space, and greater development and redevelopment in urban core and transit-accessible areas throughout the region. ABAG calculates the RHNA for individual jurisdictions within Alameda County, including Berkeley.

#### *Plan Bay Area*

Plan Bay Area 2040 was adopted on July 26, 2017. Plan Bay Area 2040 is a limited and focused update of the region's previous integrated Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS), Plan Bay Area, adopted in 2013. Plan Bay Area 2040 builds upon the growth pattern and strategies developed in the original Plan Bay Area but with updated planning assumptions that incorporate key economic, demographic and financial trends from the last four years (ABAG and MTC 2017).

In 2008, MTC and ABAG initiated a regional effort (FOCUS) to link local planned development with regional land use and transportation planning objectives. Through this initiative, local governments identified Priority Development Areas (PDAs). The PDAs form the implementing framework for Plan Bay Area. The PDAs are areas along transportation corridors which are served by public transit that allow for opportunities for development of transit-oriented development, infill development within existing communities that are expected to take in most of the future development. Overall, over two-thirds of all regional growth by 2040 is allocated within PDAs. The PDAs throughout the Bay Area are expected to accommodate 78 percent (or over 509,000 units) of new housing and 62 percent (or 690,000) of new jobs. Designated PDAs in Berkeley include: University Avenue, San Pablo Avenue, Telegraph Avenue (which was later amended to include the Southside area), Adeline Street, South Shattuck Avenue and the Downtown.

### **City of Berkeley 2015-2023 Housing Element**

The City of Berkeley Housing Element serves as the City's framework for housing goals, policies, and detailed programs for meeting existing and future housing needs and for increasing affordable housing opportunities. The current 2015-2023 Housing Element addresses the planning period of January 31, 2015 to January 31, 2023 as required by the State Housing Element Law. The Housing Element guides decisions to facilitate the

development, rehabilitation, and availability of housing in Berkeley. The Housing Element includes the following guidelines, among others:

- **Housing Affordability.** Increase the number of housing units affordable to Berkeley residents with lower income levels; aggressively seek funding for and maximize the number of permanently affordable units and encourage housing for a range of incomes.
- **Rent Stabilization and Rental Housing Conservation.** Protect tenants from large rent increases, arbitrary evictions, hardship from relocation, and the loss of their homes and preserve existing rental housing.
- **Low-Income Homebuyers.** Support efforts that provide opportunities for successful home ownership for residents and workers in the City of Berkeley.
- **Maintenance of Existing Housing.** Maintain and preserve the existing supply of housing in the City including safety and other improvements.
- **Transit-Oriented New Construction.** Encourage construction of new medium and high-density housing on major transit corridors and in proximity to transit stations.
- **Homelessness and Crisis Prevention.** Support programs and actions that prevent homelessness and other housing crises by making appropriate services available.
- **Family, Senior and Disabled Housing.** Support and encourage projects that include units affordable and suitable for households with children and large families, support housing programs that increase the ability of senior households to remain in their homes or neighborhoods, and encourage provision of an adequate supply of suitable housing to meet the needs of people with disabilities.
- **Adequate Sites.** Encourage use of publicly owned or controlled sites for affordable housing and/or mixed-use residential projects with a substantial portion of affordable units, encourage adequate housing production, and maintain sufficient land zoned for high and medium-density residential development to allow sufficient new construction to meet Berkeley's fair share of regional housing needs.

### City of Berkeley Municipal Code

In addition to the goals stated in the City's Housing Element, the City of Berkeley has a history of programs and initiatives to protect existing affordable housing and create new supplies of affordable housing, some of which are codified in the City's Municipal Code and described below.

- **Rent Stabilization and Eviction for Good Cause Program.** In 1980, Berkeley residents passed the Rent Stabilization and Eviction for Good Cause Ordinance (BMC Chapter 13.76). The Ordinance is one of the strongest rent stabilization laws in the state and regulates residential rents for most rental units in Berkeley and provides tenants in 26,000 units with increased protection against unwarranted evictions helping to maintain affordable housing and preserve community diversity.
- **City of Berkeley Ellis Act Implementation Ordinance.** The Ellis Implementation Ordinance establishes the process for withdrawing residential rental property from the rental housing market (BMC Chapter 13.77).
- **Condo Conversion Limits.** Section 21.28.040 of the City's Municipal Code implements the Condominium Conversion Ordinance that restricts property owners from converting rental units to condominiums. Condominium conversion removes

multifamily rental housing from the market and can decrease the number of units available to rental households with lower incomes. Accordingly, Berkeley's Ordinance limits condominium conversions to 100 units per year.

- **Demolition Controls.** The City's Demolition and Dwelling Unit Controls (BMC Chapter 23C.08) limits the ability of property owners to demolish or eliminate existing housing units and requires one-to-one replacement of removed units in order to protect the affordable housing supply and existing tenants.
- **Density Bonus.** The State Density Bonus Law, originally adopted by California in 1979, allows new residential development to be built at a higher density than is allowed under local zoning if the project includes units affordable for low-income households. Berkeley's Municipal Code enforces this law and calculates a project's density bonus based on a project's number of below-market rate units, the income level targeted by these units, and the proposed project size.
- **Inclusionary Housing Ordinance.** The City of Berkeley Inclusionary Housing Ordinance for ownership housing (BMC 23.C.12) requires developers of market rate ownership housing to include affordable ownership units or pay a fee.
- **Affordable Housing Mitigation Fee.** In 2011, the City Council enacted an Affordable Housing Mitigation Fee that requires developers of new market-rate rental projects to pay a fee of \$37,962 per unit.<sup>2</sup> Developers can reduce this fee by including units affordable to low-income households, and the fee is waived if at least 20% of a development's units are affordable. Revenues generated from these fees go to the City's Housing Trust Fund and are used to develop or preserve affordable housing.
- **Commercial Linkage Fee.** The City established an affordable housing fee linkage fee on commercial development in 1993 (BMC Section 22.20.065). The commercial linkage fee is levied on developers of new commercial development. Fees range from \$2.25 to \$4.50 per square foot, depending on building use. Revenues from these fees go to the City's Housing Trust Fund.

### Other City of Berkeley Programs/Initiatives

The City also provides a number of programs and initiatives that support the policies and ordinances described above:

- **Eviction Prevention.** The City's Housing Retention Program provides financial assistance to tenants to avoid eviction due to non-payment of rent. Qualifying households can receive one-time grants up to \$5,000 to prevent eviction and maintain permanent housing. The Housing and Community Services Department administers this program and partners with the East Bay Community Law Center to conduct intake for applicants.
- **Family, Senior and Disabled Housing.** Support and encourage projects that include units affordable and suitable for households with children and large families, support housing programs that increase the ability of senior households to remain in their homes or neighborhoods, and encourage provision of an adequate supply of suitable housing to meet the needs of people with disabilities.

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<sup>2</sup> Effective as of July 1, 2018. The City of Berkeley Housing Mitigation Fee is adjusted annually based on the California Construction Cost Index.

- **Senior and Disabled Home Rehabilitation Loan Program.** The Housing and Community Services Department oversees the Senior and Disabled Rehabilitation Loan Program, which enables low-income senior and disabled homeowners to make essential health, safety, and accessibility repairs. This program provides eligible Berkeley homeowners with interest-free, deferred payment loans of up to \$100,000.
- **Housing Trust Fund.** A housing trust fund is a designated source of public funds—generated through various means—that is dedicated to creating affordable housing. The City created its Housing Trust Fund in 1990, and the fund receives revenue from Affordable Housing Mitigation Fees, Commercial Linkage fees, federal Community Development Block Grant funds, and federal HOME funds. Affordable housing developers can apply for loans from the Housing Trust Fund to support their projects, and the Housing and Community Services Department administers the fund.

## 4.10.2 Analysis

### a. Methodology and Significance Thresholds

The proposed Specific Plan is a regulatory program that would result in new policies and zoning for land use. Because the Specific Plan does not involve specific development projects, the Specific Plan itself would not result in direct physical changes to population or housing. However, effects to population and housing could occur as a result of the land use changes envisioned under the Specific Plan. Future development projects in the Plan Area could replace existing or add housing units and commercial space, increasing population and employment in the Plan Area. Population growth in the Plan Area could result in physical changes related to transportation, air quality, noise, and public services and utilities, as well as other environmental resource areas. These physical impacts are analyzed under the other environmental topics in this EIR.

In accordance with Appendix G of the CEQA Guidelines, the proposed Specific Plan would result in a significant impact on the environment related to population and housing if it would:

1. Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure), or
2. Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere, or
3. Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere.

## b. Project Impacts and Mitigation Measures

**Threshold 1:** Would the Specific Plan induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?

**Impact PH-1** IMPLEMENTATION OF THE PROPOSED SPECIFIC PLAN COULD PRODUCE AN ADDITIONAL 1,450 RESIDENTIAL UNITS AND 65,000 SQUARE FEET OF COMMERCIAL USES, WHICH WOULD RESULT IN AN ADDITIONAL APPROXIMATELY 3,466 RESIDENTS AND 195 JOBS. THE PROPOSED SPECIFIC PLAN WOULD NOT CAUSE SUBSTANTIAL UNANTICIPATED POPULATION GROWTH IN BERKELEY. IMPACTS WOULD BE LESS THAN SIGNIFICANT.

As described in Section 2, *Project Description*, development facilitated by the proposed Specific Plan is estimated to result in the potential for an additional 1,450 housing units in the Plan Area and 65,000 square feet of new commercial space through 2040. As shown in Table 4.10-3, based on the average of 2.39 persons per household (see Table 4.10-1) in the Study Area, the addition of 1,450 residential units would generate an increase of approximately 3,466 residents. Based on average data for various retail, restaurant, and office uses from the Institute of Transportation Engineers (see Section 4.14, *Transportation and Traffic*), the addition of 65,000 square feet of commercial space would generate an estimated 195 new jobs.

The population and job growth due to the adoption and implementation of the proposed Specific Plan would contribute to population and job growth expected in Berkeley in the future. As shown in Table 4.10-2, in the year 2040, the Study Area is projected to have grown by 2,745 people and 344 jobs to have a total population of 17,454 and 5,357 jobs. Berkeley is forecasted to grow by 22,315 people and 34,463 jobs to have a total population of 140,900 and total employment of 121,700 jobs. Overall, growth under the Specific Plan would exceed the Study Area growth projections but would not exceed the citywide growth projections. Job growth would be below the job growth forecast for the Study Area.

As shown in Table 4.10-3, the amount of population growth anticipated from the adoption and implementation of the Specific Plan would account for approximately 16 percent of the projected increase in population growth in Berkeley from 2016 to 2040 of 22,315 and represents approximately 2.5 percent of the total Berkeley population projected in 2040 of 140,900. The job growth anticipated from development that could occur from the adoption and implementation of the Specific Plan would be 0.5 percent of the projected increase in job growth in Berkeley from 2016 to 2040 of 39,463, or less than one percent of the total 2040 jobs projected in Berkeley of 121,700. Overall, growth would be within regional growth projections for Berkeley.

**Table 4.10-3 Growth Projections through 2040 for the Plan Area and the City of Berkeley**

	Population	Employment
Growth within the Specific Plan Area <sup>1</sup>	3,466	195
Growth in City of Berkeley <sup>2</sup>	22,315	39,463
City of Berkeley Total Projected <sup>3</sup>	140,900	121,700
Specific Plan Growth Relative to total City Population	2.5%	<1.0%

<sup>1</sup> Based on the average of 2.39 persons per household (see Table 4.10-1) in the study area, the addition of 1,450 residential units would generate an increase of approximately 3,466 residents. Based on estimates provided by Fehr & Peers, the 65,000 net new square feet of commercial space would generate 195 new jobs.

<sup>2</sup> See Table 4.10-2

<sup>3</sup> See Table 4.10-2

Although the Specific Plan-attributed population growth would exceed Study Area projections, the population increase would be within the anticipated growth range for the city as a whole, and would be added incrementally over the 20-year period of estimated buildout.

In addition, as discussed in Section 4.8, *Land Use and Planning*, the City's General Plan Land Use and Housing Elements, and the City's zoning regulations encourage and prioritize higher density housing and employment in the City's commercial corridors and around BART stations. The Plan Area was designated by the City of Berkeley as a Priority Development Area, an area targeted for transit-oriented development. Therefore, the proposed Specific Plan would not result in growth exceeding regional projections and the growth that would occur is in a location encouraged by adopted local and regional plans due to its proximity to transit and transportation corridors.

Further, as explained in Section 2.4 of the *Project Description*, buildout assumptions for the proposed Specific Plan are conservative. Growth as a result of the Specific Plan may be less than anticipated.

Overall, adoption of and development under the Specific Plan would not result in unanticipated population growth, either directly or indirectly. Therefore, impacts would be less than significant.

### Mitigation Measures

Mitigation measures are not required.

**Threshold 2:** Would the Specific Plan displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?

**Threshold 3:** Would the Specific Plan displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?

**Impact PH-2** IMPLEMENTATION OF THE PROPOSED SPECIFIC PLAN COULD DISPLACE EXISTING HOUSING UNITS OR PEOPLE; HOWEVER, IMPLEMENTATION OF THE SPECIFIC PLAN WOULD INCREASE THE PLAN AREA'S HOUSING STOCK OVERALL, INCLUDING ITS STOCK OF BELOW MARKET RATE HOUSING. IMPACTS RESULTING FROM POTENTIAL DISPLACEMENT WOULD BE FURTHER REDUCED WITH ADHERENCE TO THE PROPOSED SPECIFIC PLAN POLICIES AND EXISTING CITY PROGRAMS. IMPACTS WOULD BE LESS THAN SIGNIFICANT.

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While the proposed Specific Plan is a regulatory program with no direct physical effects, subsequent development under the Specific Plan could require the demolition of existing housing units within the Plan Area. The potential loss of housing units would be more than offset by up to 1,450 new housing units within the Plan Area, and would not require the construction of additional housing elsewhere. In addition, projects that involve demolition or elimination of dwelling units would be subject to BMC Chapter 23C.08.020, which stipulates that demolition of dwelling units by only be approved if it is found that the elimination of the dwelling units would not be materially detrimental to the housing needs and public interest of the affected neighborhood and the City. Further, BMC Chapter 23C.08.020 includes tenant protections for displaced residences. When demolition of an occupied unit is approved, the project applicant is required to provide assistance with moving expenses and subsidize the rent differential for a comparable replacement unit.

Furthermore, key goals, policies and actions of the Specific Plan are designed to promote the creation of new housing, including housing affordable to the lowest income levels, preserving existing affordable housing and measures to fight displacement. The Specific Plan includes policies that prioritize affordable housing on public land; create an affordability target for the Plan Area; propose zoning changes that incentivize the provision of on-site affordable units beyond existing City regulations; and offer technical assistance to local non-profits and faith institutions to develop/redevelop mixed-use affordable housing projects on their properties or help them identify a path to ownership. The proposed Specific Plan also includes new anti-displacement policies to explore local preference programs for local residents and potentially those who were former residents who have been displaced for new affordable housing that is created.

The proposed Specific Plan's policies and actions, coupled with existing regulations, policies and programs to preserve existing affordable housing and fight displacement (described above in the regulatory setting) would result in increased protections than in the absence of adoption and implementation of the Specific Plan. Therefore, this impact would be less than significant

## Mitigation Measures

Mitigation measures are not required.

### **c. Cumulative Impacts**

#### **Housing, Population, and Employment**

As shown above in Table 4.10-3, the amount of population growth anticipated from adoption and development under the Specific Plan would account for about 3 percent of the City's total population projected in 2040. As shown in Table 4.10-3, the 65,000 square feet of commercial development projected under the Specific Plan would generate 195 jobs or 1 percent of the City's total job growth projected.

This is consistent with the City and region's plans that encourage growth in transit corridors and near BART stations. Thus, development under the Specific Plan would not result in "substantial" population growth in comparison to the amount of anticipated population growth and total population for the City.

#### **Displacement of Housing and Population**

As noted above, while the proposed Specific Plan is a regulatory program with no direct physical effects, subsequent development under the Specific Plan could result in the demolition of existing housing units within the Plan Area. Cumulative development projects throughout Berkeley could similarly displace residents. However, the proposed Specific Plan includes policies to promote 1,450 units of new housing, including below-market-rate units that, when coupled with existing City regulations, policies and programs to preserve existing housing stock and assist those at risk of displacement. As a result, implementation of the proposed Specific Plan would not generate significant cumulative impacts to the displacement of substantial numbers of existing housing units or people. Its contribution to cumulative impacts related to the displacement of people and housing would be less than significant.

## 4.11 Public Services and Recreation

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This section evaluates the proposed Specific Plan's potential environmental impacts related to police and fire protection services, public schools, parks and recreation facilities, and other public facilities.

### 4.11.1 Setting

#### a. Fire Protection

The Berkeley Fire Department provides fire protection and emergency medical services to the Plan Area, as well as for the entire city of Berkeley. This service area represents 11 square miles and approximately 120,000 residents. The Berkeley Fire Department operates seven fire stations including seven engine companies, two truck companies and four ambulances (Brannigan 2018). As of 2018, the Fire Department is staffed with 133 sworn fire fighters including 91 certified paramedics and 17 civilian staff.

The City's goal for staffing is reviewed each budget cycle and considers historical and current year information related to fire and emergency services. In 2017, the Berkeley Fire Department responded to 15,944 calls for service (up from 15,028 in 2016 and 14,610 in 2015) (Brannigan 2018). The City of Berkeley General Plan includes a goal of four minutes for Berkeley Fire Department's response time.

Primary Service to the Plan Area would be provided by Station 5, which is located at 2680 Shattuck Avenue, by Derby Street (Brannigan 2018). Station 5 houses one engine company, one truck company, and one paramedic ambulance (City of Berkeley 2018). The Adeline Street corridor is an important transportation route to the Alta Bates Summit Medical Center in South Berkeley and other hospitals in Oakland. Figure 4.11-1 shows the locations of fire stations in the vicinity of the Plan Area.

#### Fire Protection Regulatory Setting

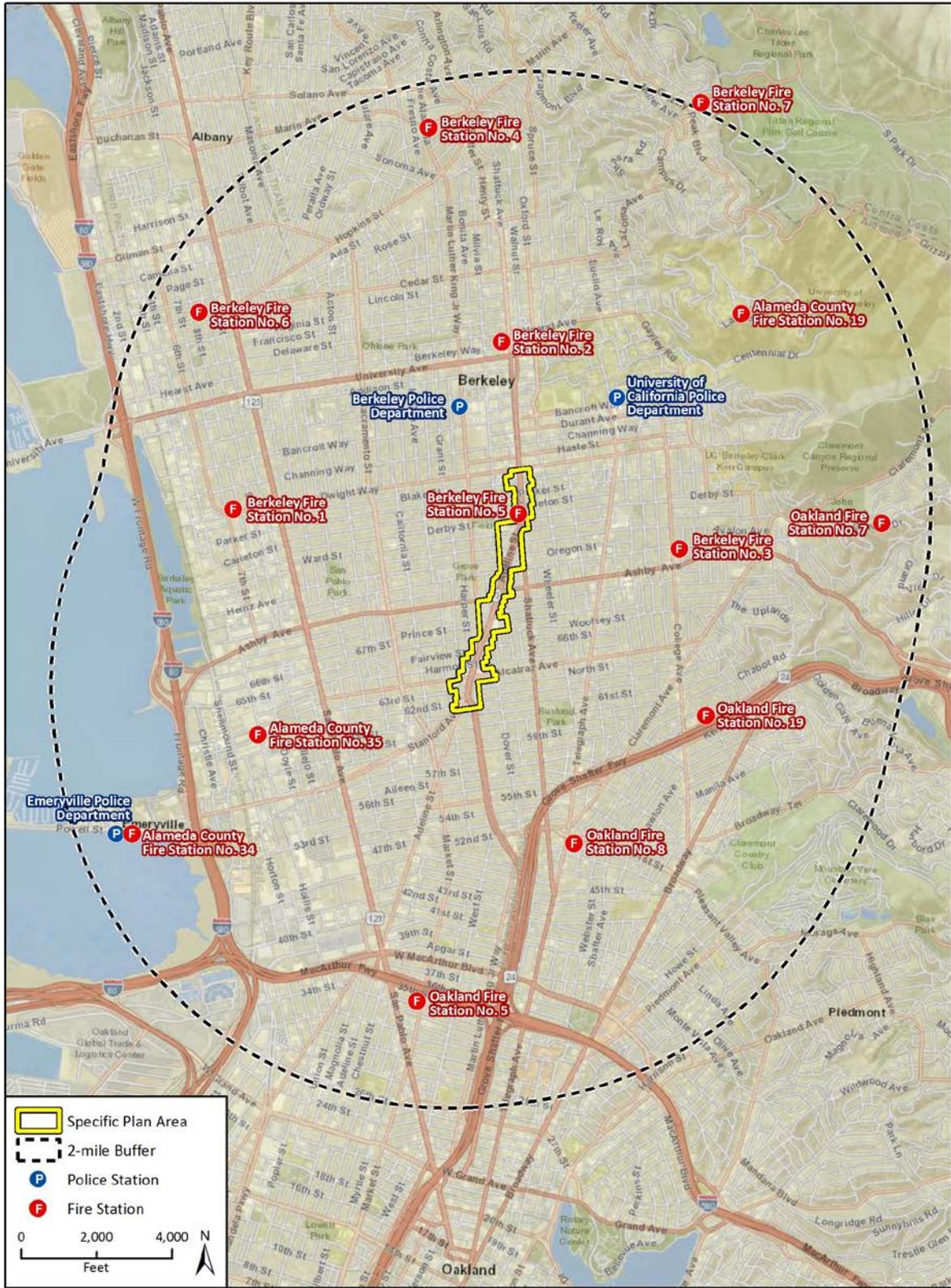
The Disaster Preparedness and Safety Element and the Transportation Element of the City's General Plan contain the following policies and actions related to fire protection services (City of Berkeley 2001b; City of Berkeley 2001f):

**Policy S-22 Fire Fighting Infrastructure.** Reduce fire hazard risks in existing developed areas.

**Action A.** Develop proposals to make developed areas more accessible to emergency vehicles and reliable for evacuation. Consider restricting on-street parking, increasing parking fines in hazardous areas, and/or undergrounding overhead utilities. Require that all private access roads be maintained by a responsible party to ensure safe and expedient passage by the Fire Department at any time, and require approval of all locking devices by the Fire Department. Ensure that all public pathways are maintained to provide safe and accessible pedestrian evacuation routes from the hill areas.

**Action B.** Evaluate existing access to water supplies for fire suppression. Identify, prioritize, and implement capital improvements and acquire equipment to improve the supply and reliability of water for fire suppression. Continue to improve the water supply for firefighting to assure peak load water supply capabilities. Continue to work

Figure 4.11-1 Police and Fire Station Locations Map



with EBMUD to coordinate water supply improvements. Develop aboveground, (transportable) water delivery systems.

**Action C.** Provide properly staffed and equipped fire stations and engine companies. Monitor response time from initial call to arrival and pursue a response time goal of four minutes from the nearest station to all parts of the city. Construct a new hill area fire station that has wildland firefighting equipment and ability.

**Policy S-23 Property Maintenance.** Reduce fire hazard risks in existing developed areas by ensuring that private property is maintained to minimize vulnerability to fire hazards.

**Action A.** Continue and expand existing vegetation management programs.

**Action B.** Property owners shall be responsible for maintaining their structures at a reasonable degree of fire and life safety to standards identified in adopted codes and ordinances.

**Action C.** Promote smoke detector installation in existing structures. Require the installation of smoke detectors as a condition of granting a permit for any work on existing residential and commercial buildings and as a condition for the transfer of property.

**Action D.** Promote fire extinguisher installation in existing structures, particularly in kitchens, garages, and workshops.

**Action E.** Require bracing of water heaters and gas appliances and the anchoring of houses to foundations to reduce fire ignitions following earthquakes.

**Policy S-24 Mutual Aid.** Continue to fulfill legal obligations and support mutual aid efforts to coordinate fire suppression within Alameda and Contra Costa Counties, Oakland, the East Bay Regional Park District, and the State of California to prevent and suppress major wildland and urban fire destruction.

**Action A.** Work with inter-agency partners and residents in vulnerable areas to investigate and implement actions to improve fire safety, using organized outreach activities and councils such as the Hills Emergency Forum and the Diablo Fire Safe Council.

**Action B.** Establish close coordination with the California Department of Forestry to minimize the risk of wildland fire in the hill areas.

**Policy S-25 Fire Safety Education.** Use Fire Department personnel to plan and conduct effective fire safety and prevention programs.

**Action A.** Provide fire safety presentations and programs to local schools, community groups, and neighborhoods.

**Action B.** Provide fire safety classes for high-occupancy institutional land uses, and commercial and industrial occupancies.

**Action C.** Develop and implement a program to improve public awareness and disseminate appropriate warnings during times of high fire danger.

**Policy T-28 Emergency Access.** Provide for emergency access to all parts of the city and safe evacuation routes. (Also see Disaster Preparedness and Safety Policy S-22.)

**Action A.** Do not install new full diverters or speed humps on streets identified on the Emergency Access and Evacuation Network map unless it is determined by the Fire and Police Departments that the installation will not significantly reduce emergency access or evacuation speeds. The Fire Department should be able to access all Berkeley locations within four minutes (see Disaster Preparedness and Safety Element). All other proposed traffic calming devices or obstructions to the free flow of traffic on these streets should be reviewed by the Fire and Police Departments to ensure that the proposed change will not significantly increase emergency response times or hinder effective evacuation of adjacent neighborhoods.

**Action B.** Maintain and improve pedestrian pathways throughout the city that are dedicated for public use and provide an alternative to the streets in case of an emergency evacuation.

**Action C.** Maintain and make available to the public up-to-date maps of all emergency access and evacuation routes.

**Action D.** Where necessary, consider parking restrictions to ensure adequate access for emergency vehicle access and evacuation in hill area neighborhoods with narrow streets.

**Action E.** Prioritize evacuation routes for undergrounding of overhead utilities.

## b. Police Protection

The Berkeley Police Department provides police protection services to the Plan Area. Police headquarters are located at 2100 Martin Luther King Jr. Way, approximately 0.5 miles north of Plan Area's northern border. Figure 4.11-1, above, shows the locations of police stations in the vicinity of the Plan Area. The Police Department consists of 270 employees including 181 sworn officers. This allows for a ratio of 1.5 sworn officers per 1,000 residents (City of Berkeley 2018b). The City's goal for staffing is reviewed each budget cycle and considers historical and current year information related to police services. City population increases are not weighed in the Police Department's staffing needs.

The Police Department currently provides regular patrols to 16 beats within Berkeley. Beats 5, 8, 9, and 10 serve the Plan Area (City of Berkeley 2018d). Additionally, the Police Department has four Area Coordinators, each assigned to specific areas of the city. An Area Coordinator is a police officer assigned to collaborate with other City departments and services, and to work with the community to solve long-term policing problems. Area Coordinators research special projects, attend community and Neighborhood Watch meetings, and regularly exchange information with beat patrol officers. Officers from Areas 2 and 3 represent the Plan Area (City of Berkeley 2018c).

Additional policing of the Plan Area is undertaken by the Bay Area Rapid Transit (BART) Police Department. The BART Police Department serves as the primary law enforcement authority for the BART District, which includes 107 miles of trackway, 45 stations, and 47,000 parking stalls. The system spans through Alameda, Contra Costa, San Francisco, and San Mateo Counties. In order to best serve BART customers and employees, BART PD has adopted a Zone Geographical Policing Structure. There are six zones, each one commanded by a Zone Lieutenant with a team of Patrol Sergeants, Police Officers and Community Service Officers who are all responsible and accountable for providing 24/7

service to their areas within the BART District. BART PD's goal for emergency response time is five minutes; average emergency response times in 2017 were between 6.25 and 6.5 minutes (BART n.d.). The Ashby BART station resides in Zone 1 of the BART District (BART 2018).

### Police Protection Regulatory Setting

The Disaster Preparedness and Safety Element, the Transportation Element and the Economic Development & Employment Element of the City's General Plan provide the following policies and actions related to police protection services (City of Berkeley 2001b):

**Policy S-1 Response Planning.** Ensure that the City's emergency response plans are current and incorporate the latest information on hazards, vulnerability, and resources. (Also see Transportation Policy T-28.)

**Action G.** Conduct coordinated planning and training between local and regional police, fire, and public health agencies in preparation for natural and man-made disasters, and ensure that the City's disaster response communication technologies are compatible with regional agency communication technologies.

**Policy T-28 Emergency Access.** Provide for emergency access to all parts of the city and safe evacuation routes. (Also see Disaster Preparedness and Safety Policy S-22.)

**Action A.** Do not install new full diverters or speed humps on streets identified on the Emergency Access and Evacuation Network map unless it is determined by the Fire and Police Departments that the installation will not significantly reduce emergency access or evacuation speeds. The Fire Department should be able to access all Berkeley locations within four minutes (see Disaster Preparedness and Safety Element). All other proposed traffic calming devices or obstructions to the free flow of traffic on these streets should be reviewed by the Fire and Police Departments to ensure that the proposed change will not significantly increase emergency response times or hinder effective evacuation of adjacent neighborhoods.

**Policy ED-4 Neighborhood and Avenue Commercial Districts.** Provide programs and services to assist neighborhood and avenue commercial districts. (Also see Land Use Policies LU-26 and LU-27.)

**Action A.** City efforts in neighborhood and avenue commercial zones should:

3. Maintain adequate levels of police presence.

Chapter 2.64 of the Berkeley Municipal Code authorizes the creation of the police department and defines its duties (City of Berkeley 1995). Additional police regulations have been issued to further describe the required conduct and responsibilities of the police department (City of Berkeley 2018g).

### c. Public Schools

The Berkeley Unified School District (BUSD) operates 20 schools, including 11 public elementary schools (grades K-5), 3 middle schools (grades 6-8), one high school (grades 9-12), and an alternative high school (grades 9-12). In addition, the District has three preschool facilities and one Adult School serving several thousand students each year (City

of Berkeley (BUSD 2018a). The District's overall enrollment for the 2017-2018 school-year was 10,340 students (Ed-Data.org 2018).

BUSD is divided into three elementary school zones: Central, Northwest, and Southeast. Two of the middle schools are zoned, while one is a magnet school. Homes near the Plan Area fall within both the Southeast and Central zones for elementary school. The elementary schools closest to the Plan Area are Malcolm X Elementary and Sylvia Mendez Elementary, the latter of which hosts a Spanish/English immersion program open to students from all three school zones. However, students living in the Plan Area do not necessarily attend the school closest to their home. Parents of students entering the District fill out an enrollment form and list their preferences for schools. Parents may request any school in the district, but first priority will be given to students living within a school's attendance zone. All homes in the Plan Area are zoned to Willard Middle School, but Berkeley residents can also choose to be assigned through random lottery to Longfellow Magnet Middle School (BUSD 2018b).

## Schools Regulatory Setting

### *State*

#### **CALIFORNIA SENATE BILL 50**

Senate Bill 50 (SB50), which revised the existing limitation on developer fees for school facilities, was enacted as urgency legislation which became effective on November 4, 1998 as a result of the California voters approving a bond measure (Proposition 1A). SB50 established a 1998 base amount of allowable developer fees (Level One fee) for residential construction (subject to adjustment) and prohibits school districts, cities, and counties from imposing school impact mitigation fees or other requirements in excess or in addition to those provided in the statute.

### *Local*

#### **BERKELEY UNIFIED SCHOOL DISTRICT – SCHOOL FACILITIES FEE**

Per SB 50 (described above, the Berkeley Board of Education adopted a School Facility Fee for new housing and commercial development in order to help the Berkeley Unified School District (BUSD) meet the costs of expanding their facilities to accommodate increased enrollment caused by new development. These fees are directed towards maintaining adequate service levels, which would ensure that any impact to schools that could result from development projects in the Plan Area would be offset by development fees and, in accordance with State law, reduce potential impacts to a less-than-significant level.<sup>1</sup>

#### **BERKELEY GENERAL PLAN**

The Land Use Element of the City's General Plan has the following policies and actions related to schools (City of Berkeley 2001d):

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<sup>1</sup> Adopted by the Board of Education on February 8, 2017. Fees are \$3.48 per square foot for residential development of more than 500 square feet and \$0.56 per square foot for new commercial and industrial development.

**Policy LU-13 Basic Goods and Services.** Ensure that neighborhoods are well served by commercial districts and community services and facilities, such as parks, schools, child-care facilities, and religious institutions.

**Action B.** Maximize joint City/Unified School District use of and planning for facilities such as recreation, libraries, and cultural centers.

#### d. Parks and Recreation

The City of Berkeley's Parks, Recreation and Waterfront Department administers recreation centers and maintains the parks, waterfront, and urban forest within the city limits. In this department, the Parks Division maintains 52 parks; 21 turf medians, triangles, and dividers; 44 parking and vacant lots; 75 paths, walks and steps; 40 undeveloped paths; and the Berkeley Marina (City of Berkeley 2018i). According to the General Plan, there are 230 acres of parkland within city limits, which is a ratio of approximately two park acres per 1,000 residents. In addition to the public open space managed by the City's Parks Divisions, the city contains parts of the Bay Trail and the 1,854-acre McLaughlin Eastshore State Park, and residents are adjacent to the East Bay Regional Park District's 2,079-acre Tilden Regional Park and 208-acre Claremont Canyon Regional Preserve. Including these additional parklands, Berkeley's park acres-to-persons ratio increases to approximately 12 acres per 1,000 residents (City of Berkeley 2001e).

Although local, regional, and State parkland is available in Berkeley, the geographic distribution of recreational facilities across Berkeley is uneven. No public parks occur within the Plan Area. However, the following local parks are located nearby:

- **Greg Brown Mini-Park:** Located just outside the Plan Area north of Adeline and between Harmon and Fairview Streets, this 0.58 acre park includes sport courts, an open grassy lawn, playground, picnic areas, and a clubhouse the City leases out.
- **Grove Park:** West of MLK, Jr. Way between Oregon and Russell, this park is just over 3 acres in size and contains a baseball/softball field, a multi-purpose turf area, two full basketball courts, two lighted tennis courts, a volleyball court, play areas for both tots and school-age children; a picnic area with barbeque, a gym, and a recreation building/clubhouse.
- **Prince Street Mini Park:** Located on Prince St., south of King Street, this 0.15 acre park features a playground and a picnic area, as well as a small turf area.
- **63rd Street Mini Park:** On 63rd Street south of King Street. The park is just 0.19 acres in size, and features a playground and a picnic area, as well as a small turf area.
- **Tim Moellering Field:** Between Carleton and Derby Streets and east of MLK Jr. Way. This 3.48 acre park is owned and operated by the Berkeley Unified School District and is primarily programmed for organized sports.
- **Malcolm X Arts Elementary School and Academic Magnet School** also has an attached park which is accessible to the public when school is not in session, under a joint use agreement with the Berkeley Unified School District. It has a full basketball court; a playground area; a community garden; and a stage/amphitheater.
- **Bushrod Recreation Center:** Located approximately one-quarter mile southeast of the Plan Area in the Temescal District, east of Shattuck Avenue and south of 61<sup>st</sup> Street, this City of Oakland park has a gymnasium, weight room, play structures, lighted basketball and tennis courts, lighted football/soccer fields, a baseball/softball field, and a picnic area (Oakland 2018).

Parks near the Plan Area tend to be small and residents and users of the Plan Area, particularly South Shattuck Avenue, have to travel farther than some Berkeley residents to parks that are not committed primarily to school use (City of Berkeley 2015a).

## Parks and Recreation Regulatory Setting

The Open Space and Recreation Element of the Berkeley General Plan cites a goal in the City's 1977 Master Plan of providing 2 acres of parkland per 1,000 people. This element also has the following policies related to parks and recreation (City of Berkeley 2001e):

**Policy OS-2 Maintenance, Repair, and Enhancements.** Within the context of open space resource allocations, give highest priority to maintaining and improving the City's existing network of open space and recreation facilities.

**Policy OS-4 Working with Other Agencies.** Work with the Berkeley Unified School District, the University of California, the East Bay Municipal Utility District, and the East Bay Regional Park District to improve, preserve, maintain, and renovate their open space and recreation facilities.

**Action B.** Work with the Berkeley Unified School District to:

1. Uphold the District's responsibilities with respect to maintaining jointly administered open space facilities such as the Measure Y parks.
2. Identify ways to expand community use of the District's recreational facilities.
3. Repair or replace the warm water pool.
4. Investigate the feasibility of developing an additional on-campus swimming pool for use by students at Berkeley High and the general public.

**Policy OS-6 New Open Space and Recreational Resources.** Create new open space and recreational resources throughout Berkeley.

**Policy OS-7 Serving Disadvantaged Populations.** Within the context of open space resource allocations for new or expanded facilities, give high priority to providing additional facilities for populations that are disadvantaged or underserved.

**Policy OS-8 Community Gardens.** Encourage and support community gardens as important open space resources that build communities and provide a local food source.

**Policy OS-14 Regional Open Space.** Coordinate with regional open space agencies such as the East Bay Regional Park District, neighboring cities, and private sector and nonprofit institutions to maintain, improve, and expand the region's open space network.

In 1986, City of Berkeley voters passed the Berkeley Public Parks and Open Space Preservation Ordinance ("Measure L") which requires the Berkeley City Council to preserve and maintain existing public parks and open space, and to give high priority to acquiring parks and open space in census tracts with less than the minimum ratio identified in the 1977 Berkeley Master Plan of 2 acres per 1,000 residents.

## e. Aging Services

The City's Aging Services Division operates senior centers in Berkeley that offer a variety of services for senior citizens, such as enrichment activities, nutrition programs, transportation assistance, and caregiver support (Berkeley 2018j). The South Berkeley Senior Center, at 2939 Ellis Street, serves senior citizens in the Plan Area. This public facility is located

approximately 500 feet west of the Plan Area near Ashby Avenue. Operating hours at the South Berkeley Senior Center are 8:00 am to 5:00 pm, Monday through Friday.

#### 4.11.2 Impact Analysis

##### a. Methodology and Significance Thresholds

The following criteria are based on Appendix G of the State *CEQA Guidelines*. Impacts would be significant if the proposed Specific Plan would:

- 1) Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable services ratios, response times or other performance objectives for any of the following public services:
  - a) Fire protection
  - b) Police protection
  - c) Schools
  - d) Parks
  - e) Other public facilities
- 2) 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
- 3) Include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment.

In terms of Threshold 1(e) regarding impacts to “other public facilities,” impacts related to public stormwater facilities are addressed in Section 4.7, *Hydrology and Water Quality*, and impacts related to public wastewater, water, and solid waste facilities are discussed in Section 4.13, *Utilities and Service Systems*.

## b. Project Impacts and Mitigation Measures

**Threshold 1a:** Would the Specific Plan result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable services ratios, response times or other performance objectives for fire protection?

**IMPACT PS-1** PROJECTED BUILDOUT UNDER IMPLEMENTATION OF THE PROPOSED SPECIFIC PLAN WOULD INCREASE DEVELOPMENT INTENSITY AND POPULATION GROWTH IN THE PLAN AREA, CONTRIBUTING TO THE POTENTIAL FUTURE NEED FOR A NEW FIRE STATION IN SOUTH BERKELEY. IF THE FIRE DEPARTMENT PROPOSES A NEW STATION AND IDENTIFIES AN APPROPRIATE SITE, THE CITY WILL CONDUCT A SEPARATE EVALUATION OF THE STATION'S ENVIRONMENTAL IMPACTS UNDER CEQA. WHILE NO LOCATION HAS BEEN IDENTIFIED FOR A NEW FIRE STATION IN THE ADELINE CORRIDOR AS PART OF THE PROPOSED SPECIFIC PLAN, THE PLAN AREA IS ENTIRELY DEVELOPED AND URBANIZED. A POTENTIAL FUTURE FACILITY WOULD LIKELY BE DEVELOPED AS INFILL DEVELOPMENT AND IS UNLIKELY TO CAUSE ADDITIONAL SIGNIFICANT ENVIRONMENTAL IMPACTS BEYOND THOSE IDENTIFIED IN THIS EIR. THEREFORE, THE SPECIFIC PLAN WOULD HAVE A LESS THAN SIGNIFICANT IMPACT RELATED TO FIRE PROTECTION FACILITIES.

Implementation of the proposed Specific Plan would add an estimated 1,450 residential units and would result in an estimated net increase of 65,000 square feet of non-residential development through 2040. This increase in residences and non-residential development would increase demand for fire protection and emergency medical services. The increase in traffic, density, and building heights associated with the proposed Specific Plan could result in response time goals not being met. In addition, the proposed installation of traffic control devices, such as bulb outs and traffic signals, could incrementally slow travel times for emergency responders, resulting in longer response times, and for patients accessing local hospitals (Brannigan 2018). Proposed separated cycletracks also could impede access to structures in need of fire protection services. The continued implementation of policies and action items in the Berkeley General Plan would improve the ability of fire protection facilities to serve growth in the Plan Area. Policy S-22 in the City's Disaster Preparedness and Safety Element calls for the City to provide adequately staffed and equipped Fire Stations and to pursue a response time goal of four minutes from the nearest station to all parts of Berkeley. Under Policy T-28, the Fire Department would review proposed traffic calming devices or obstructions to the free flow of traffic on the City's evacuation routes, which include Adeline Street and Shattuck Avenue in the Plan Area. This review process would ensure that changes to traffic flow do not substantially increase emergency response times or hinder effective evacuation of adjacent neighborhoods.

Future development under the proposed Specific Plan also would be required to comply with basic building designs and standards for commercial and residential buildings as mandated by the Berkeley Fire Code, under BMC Section 19.48. In addition, future development under the proposed Specific Plan would also be required to comply with abatement of fire-related hazards and pre-fire management prescriptions as outlined under the California Health and Safety Code and the California Fire Plan. Further, new development under the Specific Plan would be subject to Fire Department review to ensure compliance with the Fire Code and to ensure that adequate levels of service can be provided in accordance with BMC Section 19.48 and General Plan Policy S-22.

Despite compliance with the above General Plan policies and code requirements, the Fire Department has stated that increased call volumes under buildout of the Specific Plan and

longer response times would contribute to the need for construction of a new South Berkeley station for fire protection and emergency medical services (Brannigan 2018). While no location has been identified for a new fire station in the Adeline Corridor as part of the proposed Specific Plan, South Berkeley is entirely developed and urbanized so any future facility would likely be developed as infill development. As infill development, it is not anticipated that the construction of a new fire station would cause additional significant environmental impacts beyond those identified in this EIR. The environmental effects of constructing a fire station would be consistent with the impacts determined in other sections of this EIR, which would be less than significant or less than significant with mitigation with the exception of certain traffic-related impacts. When and if the Fire Department proposes a new station and identifies an appropriate site and funding, the City will conduct a complete evaluation of the station's environmental impacts under CEQA.

Therefore, impacts related to fire protection facilities under the Specific Plan would be less than significant.

### Mitigation Measures

No mitigation measures required.

**Threshold 1b:** Would the Specific Plan result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable services ratios, response times or other performance objectives for police protection?

**IMPACT PS-2** IMPLEMENTATION OF THE PROPOSED SPECIFIC PLAN WOULD ADD NEW RESIDENTIAL AND NON-RESIDENTIAL USES TO THE PLAN AREA, GENERATING ADDITIONAL NEED FOR THE CITY OF BERKELEY POLICE DEPARTMENT'S PROTECTION SERVICES. WHILE NO NEW POLICE STATION LOCATION HAS BEEN IDENTIFIED AS PART OF THE PROPOSED SPECIFIC PLAN, THE PLAN AREA IS ENTIRELY DEVELOPED AND URBANIZED. A POTENTIAL FUTURE FACILITY WOULD LIKELY BE DEVELOPED AS INFILL DEVELOPMENT AND IS UNLIKELY TO CAUSE ADDITIONAL SIGNIFICANT ENVIRONMENTAL IMPACTS BEYOND THOSE IDENTIFIED IN THIS EIR. IF THE POLICE DEPARTMENT PROPOSES A NEW STATION SERVING THE PLAN AREA AND IDENTIFIES AN APPROPRIATE SITE, THE CITY WILL CONDUCT A SEPARATE EVALUATION OF THE STATION'S ENVIRONMENTAL IMPACTS UNDER CEQA. THEREFORE, THE SPECIFIC PLAN WOULD HAVE A LESS THAN SIGNIFICANT IMPACT RELATED TO POLICE PROTECTION SERVICES.

Implementation of the proposed Specific Plan would increase the population served by the Berkeley Police Department. As discussed in Section 4.10, *Population and Housing*, it is anticipated that growth in the Plan Area would result in an approximately 2.5 percent increase in citywide population. Although the Police Department does not factor in population increases when determining its staffing needs (City of Berkeley 2016), population growth in the Plan Area could result in an increase in reported incidents, leading to longer response times unless the Police Department increases staffing. It is possible that a new police station would be necessary to serve the Plan Area in the future.

Should the Police Department and the City determine that additional facilities are needed to provide police protection services to the Plan Area, it is not known whether such facilities would be located within the Plan Area or elsewhere in the City. No location has been identified for a new police station in the Adeline Corridor as part of the proposed Specific Plan. The Plan Area is entirely developed and urbanized so any future facility would likely

be developed as infill development. As infill development, it is not anticipated that the construction of a new police station in the Plan Area would cause additional significant environmental impacts beyond those identified in this EIR. The environmental effects of constructing a fire station would be consistent with the impacts determined in other sections of this EIR, which would be less than significant or less than significant with mitigation with the exception of certain traffic-related impacts. When and if the Police Department proposes a new station and identifies an appropriate site and funding, the City will conduct a complete evaluation of the station's environmental impacts under CEQA.

In addition, the new construction and rehabilitation of existing structures with residences, businesses and usable public space under the Specific Plan would occur on building sites that are currently vacant and underused, bringing more round the clock activity or "eyes on the street." Although further study into the effect of "eyes on the street" is needed to demonstrate a causal effect on crime, a 2018 study in Philadelphia found that the overall proportion of vacancy in a neighborhood is correlated with the crime rate, in that lower vacancy is associated with reduced crime (Humphrey et al. 2018). Therefore, future development on currently vacant and underutilized lots in the Plan Area could potentially serve to reduce criminal activity.

Therefore, the impact related to police protection facilities would be less than significant.

### Mitigation Measures

No mitigation measures are required.

**Threshold 1c:** Would the Specific Plan result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable services ratios, response times or other performance objectives for schools?

**IMPACT PS-3** IMPLEMENTATION OF THE PROPOSED SPECIFIC PLAN WOULD ADD AN ESTIMATED 277 STUDENTS TO THE PLAN AREA. HOWEVER, WITH PAYMENT OF STATE-MANDATED SCHOOL IMPACT FEES, IMPACTS RELATED TO PUBLIC SCHOOL OPERATING CAPACITY WOULD BE LESS THAN SIGNIFICANT.

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Implementation of the proposed Specific Plan would introduce an estimated 1,450 additional residential units in the Plan Area, which would house additional children served by BUSD schools. In the study prepared for BUSD's recently adopted School Facilities Fee on new residential and commercial/industrial development, the District used a blended student generation rate of 0.191 for all housing types (BUSD 2016). Based on this generation rate, development under the proposed Specific Plan would add an estimated 277 new students incrementally over time (through 2040). These students would be distributed throughout the schools that serve the Plan Area depending on their grade level and on their location.

Depending on which school the new students attend, the increase in students could create capacity issues for these schools or exacerbate existing capacity issues. Therefore, the proposed Specific Plan could potentially create the need for additional school capacity or possible expansion of an existing school, the construction of which could cause environmental impacts.

However, pursuant to Senate Bill 50, applicants for individual development projects would be required to pay school impact fees established to offset potential impacts from new

development in the Plan Area on school facilities. Therefore, although adoption and development under the Specific Plan could indirectly increase resident populations and potential student enrollment in Berkeley, payment of the fees mandated under SB 50 is the mitigation prescribed by statute, and payment of such fees is "...deemed to be full and complete mitigation of the impacts of any legislative or adjudicative act, or both, involving, but not limited to, the planning, use, or development of real property, or any change in governmental organization or reorganization." Therefore, pursuant to CGC §65994(h), impacts relating to school capacity would be less than significant.

### Mitigation Measures

The applicable State-mandated school impact fees would be collected at the time of building permit issuance. No mitigation beyond this standard is required.

- Threshold 1d:** Would the Specific Plan result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable services ratios, response times or other performance objectives for parks?
- Threshold 2:** Would the Specific Plan 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?
- Threshold 3:** Would the Specific Plan include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?

**IMPACT PS-4** IMPLEMENTATION OF THE PROPOSED SPECIFIC PLAN WOULD ADD AN ESTIMATED 1,450 RESIDENTIAL UNITS AND AN ESTIMATED 3,466 RESIDENTS TO THE PLAN AREA, WHICH WOULD INCREASE USE OF PARKS. HOWEVER, THE SPECIFIC PLAN WOULD RESULT IN THE DEVELOPMENT OF NEW PARKLAND TO MEET DEMAND FOR RECREATIONAL SPACES IN THE PLAN AREA. FURTHER, DEVELOPMENT UNDER THE SPECIFIC PLAN WOULD NOT CAUSE BERKELEY TO FALL BELOW THE CITY'S GOAL OF 2 ACRES OF PARKLAND PER 1,000 RESIDENTS. THEREFORE, IMPACTS WOULD BE LESS THAN SIGNIFICANT.

The proposed Specific Plan would increase demand for parks by facilitating residential growth in the Plan Area. It is estimated that new development in the Plan Area would include an additional 1,450 residential units by the year 2040. As discussed in Section 4.11, *Population and Housing*, these new residential units would house an estimated 3,466 residents. The amount of population growth anticipated under the Specific Plan would represent approximately 2.5 percent of the total citywide population projected for 2040.

The Berkeley General Plan found that the city had approximately 12 acres per 1,000 residents, including local, regional, and State parks, which would substantially exceed the City's goal of 2 acres per 1,000 residents (City of Berkeley 2001e). By incrementally increasing the citywide population, the Specific Plan would not cause the ratio of parkland to population to fall below the City's standard. However, the Specific Plan would increase demand for parks in an area of Berkeley that is currently underserved. Fewer parks are located in South Berkeley than in other parts of the city. While several local parks occur near the Plan Area, such as Greg Brown Mini-Park (adjacent to the Plan Area's eastern boundary) and Tim Moellering Field (adjacent to the Plan Area's western boundary), no parks are located inside the Plan Area.

Chapter 7, Public Space, of the proposed Specific Plan includes an overarching goal to provide public spaces with opportunities for recreation. To meet increased demand for parkland in the Plan Area, Policy 7.1 encourages passive and active public open space and recreation and identifies the creation of a diverse range of public recreational spaces as a priority. Community priorities for parkland under the Specific Plan include, but are not limited to, community gardens, a dog park, a skate park, tot lots and playgrounds, small-scale recreational courts, plazas, and pocket parks. The Specific Plan includes a long-term right-of-way redesign concept which includes opportunities to locate recreational space in a linear public space along Adeline Street north of Ashby Avenue. Near the Ashby BART Station, the Specific Plan identifies opportunities for new public spaces during the future redevelopment of the BART station site and adjacent stretch of Adeline Street, as well as the existing underutilized plaza space in front of the Berkeley Design Center at the intersection of Adeline and Fairview Streets. In addition, new opportunities in the Lorin District include the plaza in front of the U.S. Post Office, a new flexible space on the west-side of Adeline Street between Alcatraz Avenue and the Martin Luther King Jr. Way, and improvements to the landscape area east of the BART tracks, where 63<sup>rd</sup> Street and Martin Luther King Jr. Way intersect. Finally, Policy 7.8 calls for taking advantage of opportunities to install temporary open spaces, plazas, and park uses (e.g., parklets, pop-up parks, temporary parks and plazas on paved surfaces). Temporary park uses and recreation spaces would provide greater flexibility in meeting demand for parkland in the Plan Area.

The future development of parkland in identified opportunity areas would be consistent with the Berkeley Public Parks and Open Space Preservation Ordinance, which requires the City to give priority to acquiring parks and open space in census tracts with less than 2 acres per 1,000 residents. By planning for new parkland in the Plan Area, the Specific Plan would not result in substantial overuse of existing parks which may cause physical deterioration of these facilities.

Therefore, the overall environmental impacts related to parks and recreational spaces would be less than significant.

### Mitigation Measures

No mitigation measures are required.

**Threshold 1e:** Would the Specific Plan result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable services ratios, response times or other performance objectives for other public facilities?

**IMPACT PS-5** IMPLEMENTATION OF THE PROPOSED SPECIFIC PLAN WOULD ADD AN ESTIMATED 1,450 RESIDENTIAL UNITS AND AN ESTIMATED 3,466 RESIDENTS TO THE PLAN AREA, INCLUDING SENIOR CITIZENS WHO MIGHT RELY ON SERVICES OFFERED BY THE CITY'S SENIOR CENTERS. HOWEVER, EXISTING SENIOR FACILITIES WOULD HAVE ADEQUATE CAPACITY TO ACCOMMODATE AN INCREMENTAL INCREASE IN DEMAND IN THE PLAN AREA. THIS IMPACT WOULD BE LESS THAN SIGNIFICANT.

Implementation of the Specific Plan would add an estimated 3,466 residents to the Plan Area, likely including senior citizens who would benefit from public services offered by the City's senior centers. Services available at these senior centers include, but are not limited to, enrichment activities, nutrition programs, transportation assistance, and caregiver

support (Berkeley 2018j). A higher population of senior citizens in the Plan Area would result in incrementally greater demand for these services at the South Berkeley Senior Center, which is located approximately 500 feet west of the Plan Area, near Ashby Avenue. However, this public facility already serves all of south Berkeley, and an incremental increase in senior citizens living in the Plan Area would not substantially increase its overall service population. Therefore, implementation of the Specific Plan would not result in the need for new or expanded senior facilities. This impact would be less than significant.

### **Mitigation Measures**

No mitigation measures are required.

### **c. Cumulative Impacts**

Cumulative development in Berkeley, including but not limited to new development in the Plan Area during implementation of the proposed Specific Plan, would increase demand for public services provided by the City: police and fire protection services, schools, parks, and senior centers.

To continue providing adequate police and fire protection services in the future, the City could propose the construction of additional facilities. For example, as discussed in Impact PS-1, the City has identified the need for a new fire station to serve South Berkeley. However, specific sites for this future station or others in Berkeley have not been identified. Therefore, an evaluation of the environmental impacts of implementation of such new facilities is not feasible at this time. If a new police or fire station is proposed and an appropriate site identified, the City will conduct a complete evaluation of the station's environmental impacts at that time under CEQA. Therefore, the cumulative impact related to police and fire protection facilities would be less than significant, and the Specific Plan's contribution to this impact would not be considerable.

Cumulative development would increase the number of children attending BUSD schools. However, as stated in Impact PS-3, compliance with Senate Bill 50 would require applicants for individual development projects in Berkeley to pay school impact fees established to offset potential impacts from new development. Therefore, pursuant to CGC §65994(h), the cumulative impact relating to school capacity would be less than significant, and the Specific Plan would not considerably contribute to this impact.

Cumulative projects also would increase demand for park and recreational facilities. Existing facilities, according to the Berkeley General Plan, exceed the City's goal of providing 2 acres of parkland per 1,000 residents. Because existing parkland in Berkeley is adequate to serve demand, it is not anticipated that population growth from cumulative development would result in substantial deterioration of existing park facilities. Although the City may construct new parks in currently underserved areas of Berkeley, as the Specific Plan proposes in the Plan Area, these park sites would be located in already urbanized areas that are less environmentally sensitive. Therefore, it is anticipated that cumulative development would not result in a significant impact related to parks, and the Specific Plan would not considerably contribute to an impact.

Additionally, cumulative development would incrementally increase the population of senior citizens in Berkeley, resulting in greater demand for services offered by the City's senior centers. Existing senior centers in north and south Berkeley provide important services for senior citizens in those parts of the city and have adequate capacity to serve current demand. It is not anticipated that incremental growth in the senior population would necessitate new or expanded senior centers to accommodate demand. Therefore, the

cumulative impact related to senior facilities would be less than significant, and the Specific Plan would not considerably contribute to an impact.

## 4.12 Transportation and Traffic

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This section evaluates the impacts of the proposed Adeline Corridor Specific Plan on the local transportation system. The section includes analysis of both the modification to the transportation system proposed by the Specific Plan and the future development envisioned by the Specific Plan.

### 4.12.1 Setting

The existing transportation-related context for the Plan Area is described below.

#### a. Existing Street Network

The street network serving the Plan Area is described below.

#### Regional

Regional access to the Plan Area is provided through several freeways and state highways, including Interstate 80/580 (I-80/580), Interstate 980 (I-980), State Route 24 (SR 24), and State Routes 13 (Ashby Avenue) and 123 (San Pablo Avenue).

#### Major Streets

**Adeline Street** is a northeast-southwest major street with four to six automobile lanes and a center median within the Plan Area. It connects Shattuck Avenue in the northeast to the Port of Oakland in the southwest. On-street parking is provided on both sides of the street either as parallel parking or as angled parking with a raised buffer between the parking and the adjacent through automobile lanes. A combination of metered, time limited, and unrestricted parking options are available along the corridor. The speed limit on Adeline Street is 25 miles per hour (mph).

**Shattuck Avenue** is a north-south four lane major street that connects with Adeline Street and forms the northern part of the Plan Area. Shattuck Avenue extends between North Berkeley in the north and Telegraph Avenue in the City of Oakland in the south. Within the Plan Area, most blocks of Shattuck Avenue provide angled parking on both sides of the street with a raised buffer between the parking and the adjacent through automobile lanes. South of Adeline Street, Shattuck Avenue is a collector street with two lanes and on-street parallel parking. The speed limit on Shattuck Avenue is 25 mph.

**Martin Luther King (MLK), Jr. Way** is a north-south major street with two lanes in each direction in the vicinity of the Plan Area. MLK Jr. Way is adjacent to Adeline Street throughout most of the Plan Area and is concurrent with Adeline Street between Fairview and 63rd Streets before separating to the south of the Plan Area at the border with the City of Oakland. On-street parking is provided along most of the street. The roadway's speed limit is 25 mph.

**Ashby Avenue (State Route 13)** is an east-west major street with two to four lanes and no left turn pockets at intersections in the vicinity of the Plan Area except at Adeline Street. Ashby Avenue is a Caltrans facility designated as a Scenic Route, and connects I-80 in the west with SR-24 in the east. The speed limit is 25 mph. On-street parking is provided near the intersection with Adeline Street. However, during the peak commute hours, on-street parking prohibitions on the north side of the street in the morning and the south side in the evening provide an additional automobile lane.

**Dwight Way** is an eastbound two-lane one-way major street at the north boundary of the Plan Area. Dwight Way provides on-street parking on both sides of the street. The speed limit is 25 mph.

## Collectors

**Alcatraz Avenue** is an east-west collector with one lane in each direction extending between San Pablo Avenue in the west and Claremont Avenue in the east. On-street parking is provided on both sides of the street. The speed limit is 25 mph. Alcatraz Avenue intersects with Adeline Street toward the south end of the Plan Area.

**Woolsey Street** is an east-west collector that extends east from Adeline Street and west from MLK Jr. Way in the central part of the Plan Area. One lane is provided in each direction with on-street parking along both sides of the street. Woolsey Street has a 25 mph speed limit.

## b. Transit Access and Circulation

Transit service providers in the Plan Area vicinity include the Bay Area Rapid Transit (BART) which provides regional rail service, Alameda-Contra Costa Transit District (AC Transit) which provides local and Transbay bus service with connections to the Transbay Terminal in San Francisco, and various shuttle services. Figure 4.12-1 shows the existing transit services in the Plan Area. Each service is described below.

### BART

BART provides regional rail service throughout the East Bay and across the Bay to San Francisco and the Peninsula. The Ashby BART station is located underground near the Ed Roberts Campus on Adeline Street south of Ashby Avenue in the center of the Plan Area. The station is served by the Richmond-Daly City/Millbrae and the Richmond-Warm Springs trains from 4:30 AM to 12:50 AM on weekdays and from 6:10 AM to 12:50 AM on weekends. The Ashby BART Station is served by about 16 trains per hour during the weekday peak commute periods.

The Ashby station provides 541 parking spaces in two surface lots. The east lot is located east of Adeline Street with a driveway on Adeline Street and the west lot is located between Adeline Street and MLK Jr. Way with two driveways on MLK Jr. Way. The station provides 195 bicycle parking spaces. According to BART, the Ashby BART Station had an average weekday ridership of about 10,600 riders in September 2018.

### AC Transit

The City's General Plan Transportation Element identifies the Shattuck Avenue/Adeline Street corridor as a primary transit route. AC Transit is the primary bus service provider in 13 cities and adjacent unincorporated areas in Alameda and Contra Costa Counties, with Transbay service to destinations in San Francisco, San Mateo and Santa Clara Counties. Table 4.12-1 summarizes the characteristics of the AC Transit routes operating in the Plan Area and vicinity.

Figure 4.12-1 Existing Transit Service in and around the Plan Area



**Table 4.12-1 AC Transit Bus Service in the Plan Area**

Route #	Service Description	Stops Serving Plan Area	Hour of Service	Frequency	
				Peak	Off Peak
12	Northwest Berkeley to Oakland Jack London Sq. via Gilman St., Monterey Av., MLK Jr. Way, 55th St., Temescal District, Pleasant Valley Av., Piedmont Av. Grand Av., and Broadway	MLK Jr. Way at Ashby BART, and Adeline St. at Alcatraz Av.	Monday- Sunday: 6:00 AM to midnight	20 min	30 min
18	University Village, Albany, to Lake Merritt BART via Solano Av., Shattuck Av., MLK Jr. Way, downtown Oakland.	Shattuck Av. at Dwight Way, Parker St. Derby St., Stuart St., Russell St, and Ashby Av.,	Weekdays: 5:15 AM to 12:50 AM; Weekends: 6:00 AM to 12:50 AM	15 min	20 min
36	UC Campus to West Oakland BART Station via Shattuck Ave., Haste St./ Dwight Way, 7th St., Emeryville, 40th St., and Adeline St.	Northbound Shattuck Av. At Haste St., Westbound Haste St. at Shattuck Av.	Weekdays: 5:45 AM to 12:45 AM; Weekends: 5:40 AM to 12:45 AM	30 min	30 min
80	El Cerrito BART Station to Claremont Hotel via Central Av., Pierce St., University Village, 6th St., 7th St., and Ashby Av.	Ashby Av. at MLK Jr. Way, Adeline St., and Shattuck Av.	Monday- Sunday: 6:10 AM to 10:45 PM	20 min	20 min
688	Supplementary Route - Grand Av. & MacArthur Blvd., Oakland, to Monterey Av. & Hopkins Av. via MacArthur Blvd., Park Blvd., Mountain Blvd., Broadway Terrace, Broadway, College Av., Alcatraz Av., and Sacramento St.	Alcatraz Ave at Adeline St	Weekdays: 6:45 AM to 7:30 AM and 3:45 PM to 4:30 PM	-	-
800	All Nighter Route - Richmond BART to San Francisco, via San Pablo Av., University Av., Telegraph Av. and downtown Oakland.	Shattuck Ave at Dwight Way, Parker St., and Derby St., Adeline St. at Ward St. and Oregon St., and Ashby Av. at Adeline St.	Weekdays: 12:15 AM to 6:30 AM; Weekends: 11:40 PM to 8:20 AM	30 min	1 hour
F	Transbay Route - UC Campus to San Francisco via Shattuck Av., Adeline St. 40th St., and Emeryville	Shattuck Ave at Dwight Way and Parker St., Adeline St. at Oregon St., Ashby Av., Ashby BART, and Alcatraz Av.	Weekdays: 5:10 AM to 1:30 AM; Weekends: 5:00 AM to 12:45 AM	30 min	30 min

Source: Fehr & Peers based on AC Transit website in October 2018. Boarding data collected in Spring 2014 by AC Transit.

## Shuttle Services

The following shuttle services operate in or near the Plan Area:

- The Alta Bates Summit Medical Center Herrick Campus, located on Dwight Way west of Shattuck Avenue, operates a free shuttle for medical center staff, patients, and visitors between the Herrick Campus, Milvia parking lot, and the Ashby BART Station on weekdays from 9:00 AM to 2:00 AM.
- The West Berkeley Shuttle is a free shuttle funded by employers in West Berkeley and is open to the general public. The shuttle operates between the Ashby BART station and select

locations in West Berkeley on weekdays from 5:30 AM to 10:00 AM and from 3:00 PM to 7:20 PM.

- UC Berkeley operates the free Night Safety South Line between UC Berkeley and select locations south of the campus from 7:30 PM to 3:00 AM. Nearest stop to the Plan Area is on Dwight Way at Fulton Street. The service is open to the general public.

### c. Pedestrian Conditions

Pedestrian facilities include sidewalks, crosswalks, and pedestrian signals. All streets in the Plan Area provide sidewalks on both sides of all streets. Within the Plan Area, Shattuck Avenue generally provides sidewalks that are approximately nine feet wide and separated from the automobile traffic by a buffered parking lane. Sidewalks along Adeline Street range between four to 12 feet, with some segments such as between Alcatraz Avenue and MLK Jr. Way separated from the automobile traffic by a buffered parking lane.

Signalized intersections in the Plan Area provide striped crosswalks, some high-visibility, along with pedestrian signal heads, audible signals, and/or pedestrian push buttons on most approaches. Unsignalized intersections along arterials in the Plan Area provide striped crosswalks across the side-street approaches and at least one crosswalk across Shattuck Avenue or Adeline Street.

The large width of Shattuck Avenue and Adeline Street creates long crossing distances for pedestrians, which range between 70 feet along Shattuck Avenue in the South Shattuck Subarea to 150 feet along Adeline Street in the North Adeline Subarea. The 150-foot crossing of Adeline Street provides a 50-foot raised median, which requires pedestrians to cross the street in two stages. The corridor provides rectangular rapid flash beacons (RRFB) with high-visibility crosswalks across Adeline Street mid-block adjacent to the Ed Robert Campus/Ashby BART Station, and at the intersection with Harmon Street.

### d. Bicycle Conditions

Based on the *City of Berkeley Bicycle Plan* (City of Berkeley 2017), bicycle facilities are classified into several types, including:

- **Class 1 Multi-Use Paths** – provide a completely separated, exclusive right-of-way for bicycling, walking, and other non-motorized uses.
- **Class 2 Bicycle Lanes** – are striped, preferential lanes for one-way bicycle travel on roadways. Some Class 2 bicycle lanes include striped buffers that add a few feet of separation between the bicycle lane and traffic lane or parking aisle.
- **Class 3 Bicycle Routes** – are signed bicycle routes where riders share a travel lane with motorists. Bicycle boulevards (Class 3E) are a special type of Class 3 bicycle route where the shared travel way has low motor vehicle volumes and low speed that prioritize convenient and safe bicycle travel through traffic calming strategies, wayfinding signage, and traffic control adjustments
- **Class 4 Cycletrack** – is an on-street bicycle lane that is physically separated from motor vehicle traffic by a vertical element or barrier, such as a curb, bollards, or parking aisle.

Figure 4.12-2 shows the existing and proposed bicycle network in the Plan Area. Existing bicycle facilities in and around the Plan Area include:

- Class 2 bicycle lanes along Adeline Street between Stuart and Fairview Streets, and on Alcatraz Avenue east of Adeline Street, which is in the City of Oakland

Figure 4.12-2 Existing and Proposed Bicycle Facilities



- Class 2 buffered bicycle lanes along Adeline Street south of Stanford Avenue in Oakland
- Class 3E bicycle boulevards along Milvia, Russell, and King Streets

The Bicycle Plan identifies the following proposed improvements in and around the Plan Area:

- Class 4 cycletracks along Shattuck Avenue and Adeline Street, pending completion of a Complete Street Corridor Study
- Class 3E bicycle boulevard along Fulton, Derby and Woolsey/Prince Streets

#### e. Pedestrian and Bicyclist Comfort

Pedestrian and bicyclist comfort is important to promote active access in any area. Comfort depends on a variety of factors, and these factors differ for pedestrian and bicyclists. This EIR uses the Streetscore+ methodology to measure infrastructure quality based on attributes of the built environment that correspond to pedestrian and bicyclist perceptions of comfort and stress. The Streetscore+ methodology, which is described in detail in Appendix E.A, and is similar to the Level of Traffic Stress methodology used in the *City of Berkeley Bicycle Plan*, uses a variety of built environment attributes to assign scores of 1 (lowest stress, highest comfort) through 4 (highest stress, lowest comfort) for pedestrians and bicyclists on each facility. Factors affecting Streetscore+ for pedestrians include width and quality of the sidewalk, features such as buffers and lighting, number of adjacent traffic lanes, and prevailing automobile speeds. Factors affecting Streetscore+ for bicyclists include type of facility (bike lane, cycletrack, bicycle boulevard, etc.), width and quality of the facility, number of adjacent traffic lanes, and prevailing automobile speeds.

Table 4.12-2 presents the Streetscore+ comfort analysis for both pedestrians and bicyclists on both sides of every block along the corridor, and Table 4.12-3 presents the Streetscore+ comfort analysis for both pedestrians and bicyclists at the major intersections along the corridor. Appendix E.B presents the Streetscore+ calculations.

For pedestrians, the Streetscore+ ranges between 2 and 4 along the corridor. Many blocks along the corridor have a score of 2 due to discontinuous landscaping, minimal pedestrian-scale lighting, and/or relatively high prevailing speeds adjacent to the sidewalk. Other segments have a score of 3 or 4 due to sidewalk narrowings and/or poor quality of the sidewalk. The Streetscore+ for the major intersections along the corridor is 4 primarily due to long street crossings, missing pedestrian signal heads, and/or fully actuated signals with no pedestrian recall.

For bicyclists, the Streetscore+ for most of the corridor is 4, because there are no dedicated bicycle facilities adjacent to wide streets with estimated prevailing speeds of 30 mph or higher. Adeline Street between Stuart and Woolsey Streets provides dedicated bicycle lanes, which improves the Streetscore+ result. The score in this area is either 2 or 3, depending on whether there is a wide median (and therefore fewer lanes adjacent to the bike lane), and/or whether the bike lane is frequently blocked, such as adjacent to Berkeley Bowl. Similarly, the Streetscore+ for the major intersections along the corridor is 4 primarily due to lack of dedicated bicycle facilities, high-speed right-turns, and/or conflicts with adjacent right-turn lanes or parking drive aisles.

**Table 4.12-2 Existing Conditions Pedestrian and Bicycle Streetscore+ Summary (Street Segments)**

Street Segment	Segment Limits	Pedestrian <sup>1</sup>		Bicycle <sup>1</sup>	
		West Side	East Side	West Side	East Side
Shattuck Avenue	between Dwight Way and Blake Street	2	2	4	4
	between Blake Street and Parker Street	2	2	4	4
	between Parker Street and Carleton Street	2	2	4	4
	between Carleton Street and Derby Street	2	2	4	4
Adeline Street	between Derby Street and Ward Street	2	4	4	4
	between Ward Street and Stuart Street	4	2	4	4
	between Stuart Street and Oregon Street	3	3	2	2
	between Oregon Street and Russell Street	2	4	2	3
	between Russell Street and Ashby Avenue	3	4	2	2
	between Ashby Avenue and Emerson Street	3	2	3	3
	between Emerson Street and Essex Street	3	3	3	3
	between Essex Street and Woolsey Street	3	2	3	3
	between Woolsey Street and Fairview Street	2	2	4	4
	between Fairview Street and Harmon Street	2	2	4	4
	between Harmon Street and Alcatraz Avenue	2	2	4	4
	between Alcatraz Avenue and 63rd Street	4	4	4	4
	between 63rd Street and 62nd Street	2	4	4	4

<sup>1</sup> Based on the application of the Streetscore+ methodology as described in Appendix E.A  
 Source: Fehr & Peers 2018

**Table 4.12-3 Existing Conditions Pedestrian and Bicycle Streetscore+ Summary (Intersections)**

Intersection	Pedestrian <sup>1</sup>	Bicycle <sup>1</sup>
Shattuck Avenue/Dwight Way	4	4
Shattuck Avenue/Adeline Street	4	4
Adeline Street/Ashby Avenue	4	4
MLK Jr. Way/Adeline Street	4	4
Adeline Street /Alcatraz Avenue	4	4
Adeline Street/MLK Jr. Way	4	4

<sup>1</sup> Based on the application of the Streetscore+ methodology as described in Appendix E.A  
 Source: Fehr & Peers 2019

## f. Traffic Conditions

The impacts of the proposed Specific Plan are evaluated on traffic operations at the following 10 study intersections:

1. Shattuck Avenue/Dwight Way
2. Shattuck Avenue/Adeline Street
3. MLK Jr. Way/Ashby Avenue
4. Adeline Street/Ashby Avenue
5. Shattuck Avenue/Ashby Avenue
6. MLK Jr. Way/Adeline Street
7. Adeline Street /Alcatraz Avenue
8. Adeline Street/MLK Jr. Way
9. Shattuck Avenue/Carlton Street

## Analysis Methodology

Intersection operations are described using the term “Level of Service” (LOS). 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. Different methods are used to assess signalized and unsignalized (stop-controlled) intersections. Appendix E.A describes these methods and summarizes the relationship between delay and LOS.

## Traffic Volumes

Weekday AM and PM peak period (7:00 to 9:30 AM and 4:00 to 6:30 PM) traffic counts, including counts of heavy vehicles, pedestrians and bicycles, were collected within the last four years at the study intersections. These time periods were selected because trips generated by the Specific Plan uses under consideration, in combination with background traffic, are expected to represent typical worst traffic conditions. The traffic data for all intersections, except one, were collected in April 2015. The traffic data for the Shattuck Avenue/Carlton Street intersection (#9) was collected in May 2018. Appendix E.C presents the traffic data collected at the study intersections.

In addition, during traffic study data collection, intersection lane configurations were documented and signal operations data were collected. Operations were also observed at the study intersections. The City of Berkeley also provided signal timing data for the signalized study intersections. The signal timing data was then verified against the observed conditions at each study intersection.

## Existing Intersection Operations

Existing operations were evaluated for the weekday AM and PM peak hours using the existing vehicle, heavy vehicle, bicycle, and pedestrian volumes and the existing lane configurations and signal timing parameters as inputs into the LOS calculations. Table 4.12-4 presents the existing AM and PM peak-hour intersection LOS and delays. Appendix E.D presents the detailed intersection LOS calculations.

**Table 4.12-4 Existing Conditions Intersection LOS Summary**

Intersection	Traffic Control <sup>1</sup>	Peak Hour	Delay <sup>2,3</sup>	LOS <sup>2,3</sup>
1 Shattuck Avenue/Dwight Way	Signal	AM	25	C
		PM	22	C
2 Shattuck Avenue/Adeline Street <sup>4</sup>	Signal	AM	15	B
		PM	15	B
3 MLK Jr. Way/Ashby Avenue	Signal	AM	24	C
		PM	23	C
4 Adeline Street/Ashby Avenue	Signal	AM	31	C
		PM	35	C
5 Shattuck Avenue/Ashby Avenue <sup>4</sup>	Signal	AM	23	C
		PM	25	C
6 MLK Jr. Way/Adeline Street <sup>4</sup>	Signal	AM	12	B
		PM	14	B
7 Adeline Street/Alcatraz Avenue	Signal	AM	49	D
		PM	<b>75</b>	<b>E</b>
8 Adeline Street/MLK Jr. Way	Signal	AM	25	C
		PM	41	D
9 Shattuck Avenue/Carlton Street	Signal	AM	9	A
		PM	14	B

<sup>1</sup> Signal = intersection is controlled by a traffic signal; SSSC = Intersection is controlled by a stop-sign on the side-street approach

<sup>2</sup> For signalized intersections, average intersection delay and LOS is shown. For side-street stop-controlled intersections, delay for worst movement is shown. Delay and LOS calculated using HCM2010, unless noted.

<sup>3</sup> Intersections operating at LOS E or LOS F are shown in bold.

<sup>4</sup> Delay and LOS calculated using HCM 2000, due to limitations in HCM 2010.

Source: Fehr & Peers 2018

Most study intersections operate at LOS D or better during both AM and PM peak hours, except the following:

- The signalized Adeline Street/Alcatraz Avenue intersection (#7) operates at LOS D during the AM peak hour and LOS E during the PM peak hour.

### Congestion Management Program (CMP) Network

The Alameda County Transportation Commission (CTC) continuously monitors and updates its Congestion Management Program (CMP) of major freeways and arterial roadways in the county. The CMP and Metropolitan Transportation System (MTS) roadways in and around the Plan Area include Shattuck Avenue, Adeline Street, MLK Jr. Way, Ashby Avenue, and Dwight Way.

Alameda CTC published the most recent *Level of Service Monitoring on the Congestion Management Program Roadway Network* in December 2018. This report documents 2018 LOS based on average travel speeds. Based on the report, the following segments in the project vicinity operate at LOS E or LOS F:

- Northbound and southbound Adeline Street between the two segments of MLK Jr. Way operate at LOS E during the PM peak hour
- Northbound Shattuck Avenue between Adeline Street and Dwight Way operates at LOS E during the PM peak hour

Other CMP study segments operate at LOS D or better during both AM and PM peak hours.

## 4.12.2 Regulatory Setting

### a. California Senate Bill 743

On September 27, 2013, California Governor Jerry Brown signed Senate Bill (SB) 743 into law and started a process that will result in changes to the way transportation impact analysis is conducted as part of CEQA compliance. These changes will include elimination of automobile delay, LOS, and other similar measures of vehicular capacity or traffic congestion as a basis for determining significant impacts under CEQA.

Existing rules treat automobile delay and congestion as an environmental impact. Instead, SB 743 requires the CEQA *Guidelines* to prescribe an analysis that better accounts for transit and reducing greenhouse gas emissions. In November 2017, Office of Planning and Research (OPR) released the final update to *CEQA Guidelines* consistent with SB 743, which recommend using vehicle miles traveled (VMT) as the most appropriate metric of transportation impact to align local environmental review under CEQA with California's long-term greenhouse gas emissions reduction goals. The *Guidelines* require all jurisdictions in California to use VMT-based thresholds of significance by 2020.

Since these *Guidelines* have not yet been adopted, and the City of Berkeley has not yet adopted a methodology or thresholds of significance for a VMT assessment, this EIR will continue to use intersection LOS thresholds of significance based on the City of Berkeley's current standards and practices. However, this EIR also assesses Specific Plan impacts related to VMT, for informational purposes only.

### b. Alameda County Transportation Commission

The Alameda County Transportation Commission (Alameda CTC) coordinates transportation planning efforts throughout Alameda County and programs federal, state, regional, and local funding for project planning and implementation. Through its Congestion Management Program (CMP), Alameda CTC oversees and monitors the operations and performance of roadways in the CMP network, which consist of freeways and major arterials that provide connectivity in the County. The Land Use Analysis Program of the CMP requires local jurisdictions to evaluate the potential impacts of proposed land use changes (i.e., General Plan amendments, and developments estimated to generate 100 or more net new PM peak hour automobile trips) on the CMP network.

### c. City of Berkeley General Plan

The Transportation Element of the Berkeley General Plan (2001) contains the following policies and actions relevant to the proposed Specific Plan:

**Policy T-4: Transit First Policy.** Give priority to alternative transportation and transit over single-occupant vehicles on Transit Routes identified on the Transit Network map.

**Policy T-10: Trip Reduction.** To reduce automobile traffic and congestion and increase transit use and alternative modes in Berkeley, support, and when appropriate require,

programs to encourage Berkeley citizens and commuters to reduce automobile trips, such as:

1. Participation in a citywide Eco-Pass Program (also see Transportation Policy T-3).
2. Participation in the Commuter Check Program.
3. Carpooling and provision of carpool parking and other necessary facilities.
4. Telecommuting programs.
5. "Free bicycle" programs and electric bicycle programs.
6. "Car-sharing" programs.
7. Use of pedal-cab, bicycle delivery services, and other delivery services.
8. Programs to encourage neighborhood-level initiatives to reduce traffic by encouraging residents to combine trips, carpool, telecommute, reduce the number of cars owned, shop locally, and use alternative modes.
9. Programs to reward Berkeley citizens and neighborhoods that can document reduced car use.
10. Limitations on the supply of long-term commuter parking and elimination of subsidies for commuter parking.
11. No-fare shopper shuttles connecting all shopping districts throughout the city.

**Policy T-12: Education and Enforcement.** Support, and when possible require, education and enforcement programs to encourage carpooling and alternatives to single-occupant automobile use, reduce speeding, and increase pedestrian, bicyclist, and automobile safety.

**Action B.** Encourage hotels, motels, and other visitor destinations to provide visitors with information on public transportation and bicycle services and facilities

**Policy T-14: Private Employers.** Encourage private employers to reduce the demand for automobile travel through transportation demand management programs that include elements such as:

1. Trip reduction incentives such as Commuter Check and Eco-Pass.
2. Flexible work hours and telecommuting to reduce peak-hour commute congestion.
3. Carpool and vanpool incentives to reduce single-occupancy vehicle use.
4. Provision of mass transit pass/credit instead of free employee parking (parking "cash-out" programs).
5. Providing bicycle facilities.
6. Market pricing mechanisms for employee parking to reduce automotive use and discourage all-day parking.
7. Local hiring policies.
8. Numerical goals for trip reduction

**Policy T-15: Local Hiring.** Establish Berkeley residency as a preference for hiring, and encourage other public employers, institutions, and private employers to hire locally. (Also see Economic Development and Employment Policy ED-1.)

**Policy T-16: Access by Proximity.** Improve access by increasing proximity of residents to services, goods, and employment centers. (Also see Land Use Policies LU-13 and LU-23, Housing Policy H-16, and Environmental Management Policy EM-41 Action B.)

**Action A.** Locate essential commercial and other services in transit-oriented locations to reduce the need for cars and enable people living near transit and services to reduce auto trips.

**Action B.** Encourage higher density housing and commercial infill development that is consistent with General Plan and zoning standards in areas adjacent to existing public transportation services.

**Action D.** Encourage siting of child-care facilities and other services in large residential or commercial facilities to reduce traffic impacts associated with child-care drop-off and pick-up.

**Action E.** In locations served by transit, consider reduction or elimination of parking requirements for residential development.

**Policy T-18: Level of Service.** When considering transportation impacts under the California Environmental Quality Act, the City shall consider how a plan or project affects all modes of transportation, including transit riders, bicyclists, pedestrians, and motorists, to determine the transportation impacts of a plan or project. Significant beneficial pedestrian, bicycle, or transit impacts, or significant beneficial impacts on air quality, noise, visual quality, or safety in residential areas, may offset or mitigate a significant adverse impact on vehicle Level of Service (LOS) to a level of insignificance. The number of transit riders, pedestrians, and bicyclists potentially affected will be considered when evaluating a degradation of LOS for motorists.

**Policy T-19: Air Quality Impacts.** Continue to encourage innovative technologies and programs such as clean-fuel, electric, and low-emission cars that reduce the air quality impacts of the automobile. (Also see Environmental Management Policies EM-18 through EM-22.)

**Action A.** Establish bicycle and low-emission vehicle preferred parking areas.

**Action B.** Install electric vehicle charging stations in all City-owned parking facilities downtown and at major parking facilities and employment centers.

**Policy T-24: Ashby Avenue.** Take actions necessary to reduce congestion, improve pedestrian and bicycle crossings, and improve the quality of life for residents on Ashby Avenue.

**Action A.** Ensure safe pedestrian crossing of Ashby Avenue along its entire route, but particularly to City facilities such as schools, senior citizen centers, and libraries.

**Policy T-32: Shared Parking.** Encourage Berkeley businesses and institutions to establish shared parking agreements, which would make the most efficient use of existing and new parking areas. (Also see Economic Development and Employment Policy ED-6.)

**Policy T-33: Disabled Parking and Passenger Zones.** Ensure adequate disabled parking and passenger drop-off zones.

**Action A.** Require access to adequate disabled parking and passenger drop-off zones in all new commercial and residential developments.

**Policy T-39: High-Tech Parking.** To make the most efficient use of available land, encourage consideration of high-tech computerized parking (e.g., lifts and or "robotics") when replacing existing public parking or when providing off-street parking for multi-family residential projects.

**Policy T-41: Structured Parking.** Encourage consolidation of surface parking lots into structured parking facilities and redevelopment of surface lots with residential or commercial development where allowed by zoning.

**Action C.** Provide parking and recharging facilities for alternative vehicles such as bicycles and electric and low-emission vehicles.

**Action D.** Whenever feasible, orient automobile access to parking lots and garages away from designated bicycle ways and boulevards and avoid blank walls along pedestrian ways.

**Policy T-43: Bicycle Network.** Develop a safe, convenient, and continuous network of bikeways that serves the needs of all types of bicyclists, and provide bicycle-parking facilities to promote cycling.

**Action A.** Expand the supply of highly secure bicycle parking near transit hubs and commercial areas.

**Action B.** Encourage business owners to provide bicycle parking, showers, and lockers for employees and bicycle parking for customers.

**Policy T-49: Disabled Access.** Improve pedestrian access for the entire disabled community.

**Action B.** Use regulation and incentives to require or encourage accessibility upgrades for private businesses.

**Action C.** Encourage businesses to exceed the minimum standards set by the ADA "readily achievable barrier removal" requirement.

**Policy T-50: Sidewalks.** Maintain and improve sidewalks in residential and commercial pedestrian areas throughout Berkeley and in the vicinity of public transportation facilities so that they are safe, accessible, clean, attractive, and appropriately lighted.

**Action C.** Ensure that sidewalks are kept in good repair and are level, with a suitable grade for pedestrians and wheelchairs. Discourage, and when possible prevent, new developments from creating uncomfortably steep grades.

**Action D.** Ensure adequate unobstructed sidewalk passage by appropriate placement of street furniture and amenities and prevention of obstruction of travel ways by such items as advertisement signs, merchandise, and utility boxes.

**Policy T-51: Pedestrian Priority.** When addressing competing demands for sidewalk space, the needs of the pedestrian shall be the highest priority.

**Policy T-52: Pedestrian Safety and Accessibility.** Provide safe and convenient pedestrian crossings throughout the city.

**Action A.** Seek to ensure that the distance between signal-controlled intersections, "smart crosswalks," or stop signs is never more than one-quarter mile on major and collector streets. At intersections with severe or high pedestrian/automobile collision rates and at heavily used pedestrian crossings, consider all-way stop signals that

allow the free flow of pedestrians through the intersection, "smart" signals to calm traffic and improve intersection safety, and pedestrian/bicycle-activated signals that allow bikes and pedestrians to cross busy streets without inviting traffic onto cross streets.

**Action B.** Consider pedestrian crosswalk "runway" lights in the pavement at intersections with severe or higher than average pedestrian collision rates.

**Action D.** Encourage the creation of accessible pedestrian medians or islands in wide streets where people have to cross more than two lanes.

#### d. City of Berkeley Complete Street Policy

The Berkeley City Council adopted a Complete Streets Policy (Resolution 65,978-N.S.) in December 2012, to guide future street design and repair activities. "Complete Streets" describes a comprehensive, integrated transportation network with infrastructure and design that allows safe and convenient travel along and across streets for all users, including pedestrians, bicyclists, persons with disabilities, motorists, movers of commercial goods, users and operators of public transportation, emergency vehicles, seniors, children, youth, and families.

#### e. City of Berkeley Bicycle Plan

The City of Berkeley Bicycle Plan, approved by Berkeley City Council in May 2017, contains the following policies and actions relevant to the proposed Specific Plan:

**Policy PL-1.** Integrate bicycle network and facility needs into all City planning documents and capital improvement projects

##### **Actions**

- Follow a multi-disciplinary project scoping process that incorporates the needs of all modes and stakeholders, both internal and external; the design process should include the City divisions, departments, and staff responsible for emergency response, parking, law enforcement, maintenance, and other affected areas.
- Ensure that all traffic impact studies, analyses of proposed street changes, and development projects address impacts on bicycling and bicycling facilities. Specifically, the following should be considered:
  - Consistency with General Plan, Area Plan, and Bicycle Plan policies and recommendations;
  - Impact on the existing bikeway network;
  - Degree to which bicycle travel patterns are altered or restricted by the projects; and
  - Safety of future bicycle operations (based on project conformity to Bicycle Plan design guidelines and City, State, and Federal design standards).

**Policy PL-2.** When considering transportation impacts under the California Environmental Quality Act, the City shall consider how a plan or project affects bicyclists per Berkeley General Plan Policy T-18.

##### **Actions**

- Integrate Vehicle Miles Traveled transportation impact analysis thresholds as a State-mandated alternative to Level of Service. Work with the Alameda County

Transportation Commission and the Metropolitan Transportation Commission to ensure conformity with County and Regional travel models.

- Establish new City traffic analysis standards that consider all modes of transportation, including pedestrians, bicycles, and transit in addition to automobiles, consistent with a comprehensive, integrated transportation network for all users as described in the City of Berkeley Complete Streets Policy. Utilize Level of Traffic Stress to quantify bicycle transportation in this network-based Complete Streets Policy context.

**Policy D-1.** Design a Low Stress Bikeway Network suitable for the “Interested but Concerned,” to include people all ages and ability levels riding bicycles in Berkeley.

**Actions**

- Design a network of continuous Low Stress Bikeways as identified in the Berkeley Bicycle Plan and Appendix F: Design Guidelines.
- Adopt the National Association of City Transportation Officials (NACTO) Urban Bikeway Design Guide as the primary design guide for citywide bicycle facility design.
- Utilize the most recent State and Federal design standards and guidelines.
- Follow a multi-disciplinary design process that incorporates and balances the needs of all modes and stakeholders, both internal and external; the design process should include the City divisions, departments, and staff responsible for emergency response, parking, law enforcement, maintenance, and other affected areas, as well as outside agencies such as AC Transit, BART, UC Berkeley, Caltrans and other responsible external stakeholder agencies.
- Work with AC Transit, UC Berkeley, and other transit providers to design bikeways to minimize transit-vehicle interactions, optimize transit service and operations, and provide low stress bike-to-transit access environments in areas heavily served by transit. In designing for both bicycles and transit, utilize the latest national design best practices, such as the NACTO Transit Street Design Guide and Urban Street Design Guide. Local guidance, such as the forthcoming AC Transit Design Standards and Guidelines Manual for Safe and Efficient Multimodal Transit Stops and Corridors will also be consulted.

**f. City of Berkeley Pedestrian Plan**

The City of Berkeley Pedestrian Master Plan, adopted in June 2010, reiterates and emphasizes the General Plan policies and actions pertaining to pedestrians. Policies relevant to the proposed Specific Plan include General Plan Policies T-12 (Education and Enforcement), T-49 (Disabled Access), T-50 (Sidewalks), T-51 (Pedestrian Priority), and T-52 (Pedestrian Safety and Accessibility), which are listed above.

**4.12.3 Project Transportation Characteristics**

This section describes various characteristics of the Adeline Corridor Specific Plan that can affect transportation and traffic.

**a. Specific Plan Street Network**

The Adeline Corridor Specific Plan proposes a number of interim and long-term modifications to the street network in the Plan Area to improve access and circulation for all

travel modes. Subsection 2.3.5 in Section 2, *Project Description*, of this EIR provides a detailed description of these modifications, which are summarized below.

The interim improvements would consist of isolated physical improvements that can be independently implemented at various locations along the corridor to primarily increase safety and comfort for pedestrians and cyclists, such as pedestrian hybrid beacons (PHB) at bicycle boulevard crossings of major streets.

The long-term improvements would primarily consist of narrowing the automobile right-of-way along the Adeline Corridor to widen and complete the sidewalks and provide cycletracks along the corridor. The corridor would provide two automobile lanes in each direction, with turn lanes at major intersections. The corridor would consist of four subareas which are briefly described below:

- **South Shattuck.** This segment would continue to provide two automobile lanes in each direction, separated by a median. The segment would continue to maintain much of its current alignment and cross-section. However, the future design would include the addition of back-in angled on-street parking, and the addition of one-way cycletracks on both sides of the street, between the sidewalk and the car parking lane.
- **North Adeline.** This segment would provide two automobile lanes in each direction separated by an eight-foot median. This segment would also provide a southbound drive aisle on the west side of the street, separated from the automobile lanes by a wide plaza/open space. Parallel or angled on-street parking would be provided along the northbound street and the southbound drive aisle. Left-turn lanes would be provided at northbound Oregon Street and southbound Ashby Avenue. A continuous median would prevent all other left-turns along this segment of the corridor. The project would widen the existing sidewalks and provide cycletracks on both sides of the street.
- **Ashby BART Station Area.** This segment would provide two automobile lanes in each direction without a median, and parallel on-street parking along both sides of the street. This segment would continue to accommodate sidewalks on both sides of the street, with a two-way cycletrack on the west side of the street between the sidewalk and the parking lane.
- **South Adeline.** This segment would provide two automobile lanes in each direction separated by a median, which would accommodate left-turn lanes at intersections. This segment would also provide separated drive aisles with angled parking along particular blocks. An open space/plaza would be provided between the southbound drive aisle and the automobile lanes south of Alcatraz Avenue. The segment would generally widen the existing sidewalks on both sides of the street and provide one-way cycletracks on both sides of the street.

The project would continue to maintain the existing bus stops along the corridor. All bus stops would be upgraded to provide bus bulbs to allow for buses to stop in the auto lane. The signals along the corridor would also be upgraded to accommodate Transit Signal Priority (TSP).

The modifications would change the configuration of the intersections along the corridor. The EIR analysis assumes that the modifications would require new signal equipment and signal timings at the signalized intersections along the corridor, which would be coordinated. In addition, the elimination and narrowing of automobile lanes along the corridor would generally reduce the pedestrian crossing times across the corridor, resulting in shorter signal cycle times.

## b. Specific Plan Land Uses

The proposed Specific Plan would facilitate the development of both residential and non-residential uses within the Adeline Corridor Area in the City of Berkeley. The particular type, size, and location of future developments in the Plan Area will depend on future market demand and cannot be determined at this time. Since this traffic impact analysis requires assumptions about the location, amount and type of development, the EIR assigns likely developments to four subareas within the Plan Area, rather than to particular parcels. These four subareas are described in Subsection 2.3.2 and shown on Figure 2-3 in Section 2, *Project Description*, of this EIR.

Table 4.12-5 presents the *reasonably foreseeable maximum* development for each subarea assumed for this EIR analysis. These projections do not represent a *theoretical maximum* wherein all parcels are built to their maximum potential, and are not a quota or prediction for the type, size and/or exact location of developments within the Plan Area. The Specific Plan provides the flexibility for a variety of uses and densities within each subarea.

Table 4.12-5 Adeline Corridor Specific Plan Growth by Subarea

Subarea	Residential	Retail/Commercial
South Shattuck	300 units	20,000 square feet
North Adeline	200 units	-5,000 square feet
Ashby BART	850 units	50,000 square feet
South Adeline	100 units	0 square feet
<b>Total</b>	<b>1,450 units</b>	<b>65,000 square feet</b>

Source: See Table 2-2 in Section 2, *Project Description*, of this EIR

Thus, regardless of the actual development that would occur in each subarea, the traffic impact analysis completed for the EIR would remain valid as long as the cumulative trip generation for each subarea and the entire Specific Plan remain below the trip generation estimated for the EIR and presented below.

## c. Trip Generation

Trip generation refers to the process of estimating the amount of vehicular traffic a project would add to the surrounding roadway system. The *reasonably foreseeable maximum* development would potentially result in a net increase of an estimated 1,450 residential units and 65,000 square feet of retail/commercial space.

The mix of proposed uses in a dense urban environment with regional and local transit service would result in higher non-automobile trips than typical suburban developments. If vehicle trip reduction in mixed-use dense urban developments such as this is understated, the result can be excessive traffic impacts and related mitigation that can discourage development of otherwise desirable projects or transportation infrastructure that is not sized to the urban setting of the development. The project trip generation estimated in this analysis accounts for the mix of uses, and the urban setting envisioned in the Specific Plan.

Current accepted methodologies, such as the Institute of Transportation Engineers (ITE) Trip Generation methodology, are primarily based on data collected at suburban, single-use, freestanding sites. These defining characteristics limit their applicability to mixed-use or multi-use urban development projects, such as the Adeline Corridor Specific Plan, which is in a dense mixed-use setting. The land use mix, design features, and setting of the Specific

Plan would include characteristics that influence travel behavior differently from typical single-use suburban developments. Thus, traditional data and methodologies, such as ITE, would not accurately estimate the project vehicle trip generation. In response to the limitations in the ITE methodology, and to provide a straightforward and empirically validated method of estimating vehicle trip generation at mixed-use developments, the US Environmental Protection Agency (EPA) sponsored a national study of the trip generation characteristics of multi-use sites. Based on travel survey data gathered from 239 mixed-use developments (MXDs) in six major metropolitan regions and correlated with the characteristics of the sites and their surroundings, the MXD methodology estimates the amount of external traffic that a mixed-use development would generate by reducing the ITE-based estimates to account for internal trips and external non-automobile trips.

Appendix E.E describes the MXD methodology and its applicability to the Adeline Corridor Specific Plan in more detail.

Table 4.12-6 summarizes the net automobile trip generation for buildout of Adeline Corridor Specific Plan. The trip generation process starts with the ITE data for each land use category prior to the application of the MXD adjustments. Table 4.12-6 presents the following:

- Total trip generation based on ITE *Trip Generation Manual* (10th Edition). The following ITE data are used for each land use category:
  - **Residential.** Since the residential uses in the Adeline Corridor Specific Plan would be multi-family units in buildings up to seven levels, their trip generation is estimated using ITE data for Multi-family housing (mid-rise) (land use category 221), which consists of residential buildings between three and ten levels.

**Table 4.12-6 Adeline Corridor Specific Plan Total Automobile Trip Generation**

Uses	Units <sup>1</sup>	Daily	Weekday AM Peak Hour			Weekday PM Peak Hour		
			In	Out	Total	In	Out	Total
Residential <sup>2</sup>	1,450 DU	7,900	122	348	470	352	225	577
Retail <sup>3</sup>	65 KSF	4,490	114	70	184	190	205	395
Subtotal		12,390	236	418	654	542	430	972
MXD Adjustment <sup>4</sup>		(3,960)	(110)	(174)	(284)	(235)	(200)	(435)
Pass-by Adjustment <sup>5</sup>		(520)	(10)	(7)	(17)	(37)	(37)	(74)
<b>Net New Trips</b>		<b>7,910</b>	<b>116</b>	<b>237</b>	<b>353</b>	<b>270</b>	<b>193</b>	<b>463</b>

<sup>1</sup> DU = dwelling unit, KSF = 1,000 square feet., ( ) denotes subtraction

<sup>2</sup> ITE Trip Generation (10th Edition) land use category 221 (Mid-Rise Apartments, General Urban/Suburban):

Daily:  $T = 5.45(X) - 1.75$

AM Peak Hour:  $\ln(T) = 0.98 \cdot \ln(X) - 0.98$  (26% in, 74% out)

PM Peak Hour:  $\ln(T) = 0.96 \cdot \ln(X) - 0.63$  (61% in, 39% out)

<sup>3</sup> ITE Trip Generation (10th Edition) land use category 820 (Shopping Center, General Urban/Suburban):

Daily:  $\ln(T) = 0.68 \cdot \ln(X) + 5.57$

AM Peak Hour:  $T = 0.5(X) + 151.78$  (62% in, 38% out)

PM Peak Hour:  $\ln(T) = 0.74 \cdot \ln(X) + 2.89$  (48% in, 52% out)

<sup>4</sup> For weekdays, reductions based on application of MXD model: Daily = 32%, AM Peak Hour = 43%, PM Peak Hour = 45%

<sup>5</sup> Based on ITE Trip Generation Handbook (2nd Edition), the average PM peak hour pass-by rates for land use category 820 is 34%. A 17% daily and AM peak hour pass-by rate is applied to retail uses. This adjustment was applied to the trip generation after the MXD adjustment.

Source: Fehr & Peers 2018

- **Retail/Commercial.** A variety of uses, such as office, retail, and/or restaurant, may occupy the retail/commercial spaces. Their trip generation is estimated using ITE data for shopping center (land use category 820), which ITE defines as “integrated group of commercial establishments,” to present a conservative estimate of the potential trip generation for these uses.
- Reduction in automobile trip generation as estimated by the MXD methodology, which accounts for non-automobile trips (walk, bike, and transit trips). Based on the application of the MXD methodology, the Plan Area is estimated to generate about 32 percent fewer daily, 43 percent fewer AM peak hour, and 45 percent fewer PM peak hour automobile trips than estimated by the ITE methodology. These adjustments to the trip generation are reasonable considering that:
  - The 2010-2012 California Household Travel Survey (CHTS) shows that about 40 percent of all trips in the Plan Area census tracts (4235 and 4239.01) are by non-automobiles modes
  - The 2010-2012 CHTS also shows that about 60 percent of home-based work trips (which generally corresponds to peak hour trips) in the Plan Area census tracts are by non-automobiles modes
  - US Census American Communities Survey (ACS) 2016 five-year average journey to work data shows about 56 percent of commute trips (which generally corresponds to peak hour trips) in the Plan Area census tracts are by non-automobiles modes
- Pass-by trips are trips attracted to the site from adjacent roadways as an interim stop on the way to their ultimate destination. Pass-by trips consist of vehicles that would be on the roadway network regardless of the project; therefore, these trips result in changed travel patterns but do not add new vehicle trips to the roadway network. According to the *ITE Trip Generation Handbook (2nd Edition)*, the average weekday PM peak hour pass-by rate for retail uses (ITE land use category 820) is 34 percent. Since ITE does not provide AM peak hour and daily pass-by rates for land use category 820, this analysis applies a pass-by rate of 17 percent (half of the PM peak hour pass-by reduction) to the daily and AM peak hour retail trips.

The trip generation estimate presented in Table 4.12-6 is conservative in that it does not account for the following:

- The transportation demand management (TDM) strategies described in the Specific Plan document that developments would be required to implement, which would further reduce the automobile trips generated by development facilitated by the Specific Plan.
- The relatively low parking supply that would be provided by development projects facilitated by the Specific Plan. Based on the US Census ACS 2016 five-year average data, automobile ownership in the Specific Plan census tracts is about 1.2 automobiles per household. In comparison, it is estimated that the residential developments in the Ashby BART subarea would provide about 0.5 spaces per unit, residential developments in the other subareas would provide about 0.75 spaces per unit, and non-residential developments would provide about one space per 1,000 square feet, further discouraging driving in the Plan Area.
- The existing automobile trips generated by the Ashby BART Station parking lots. It is likely that the potential developments at the Ashby BART station would either eliminate or reduce the existing BART parking supply and reduce the number of BART riders that drive to/from the Station.

The buildout of the Specific Plan is estimated to generate about 7,910 daily, 353 AM peak hour, and 463 PM peak hour automobile trips. Table 4.12-7 presents the trips generation allocated to the subareas proportionate to the expected land uses in each subarea.

**Table 4.12-7 Adeline Corridor Specific Plan Total Automobile Trip Generation by Subarea**

Subarea	Daily	Weekday AM Peak Hour			Weekday PM Peak Hour		
		In	Out	Total	In	Out	Total
South Shattuck	1,890	29	52	82	63	47	110
North Adeline	550	5	25	30	22	11	33
Ashby BART	5,100	77	145	223	171	126	298
South Adeline	370	4	14	18	14	8	22
<b>Net New Trips</b>	<b>7,910</b>	<b>116</b>	<b>237</b>	<b>353</b>	<b>270</b>	<b>193</b>	<b>463</b>

Source: Fehr & Peers 2018

#### d. Trip Distribution

Trip distribution is defined as the directions of approach and departure that vehicles would use to arrive at and depart from development projects in Plan Area. Trip distribution for each of subareas was developed based on the locations of complementary land uses, existing travel patterns and street network in the area, the location of likely access points in each subarea, and the results of the Alameda CTC Model. Project trips for each subarea, as presented in Table 4.12-7, were then assigned to the street network based on the trip distribution.

#### 4.12.4 Significance Criteria

Consistent with the State CEQA Guidelines, impacts related to transportation and circulation would be considered potentially significant if implementation of the project would result in any of the following:

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

### a. City of Berkeley Significance Criteria

Automobiles: The City of Berkeley's performance standards are defined in the 2005 *City of Berkeley Guidelines for Development of Traffic Impact Reports*. Per the City of Berkeley's Guidelines, the project would have a significant impact if any of the following would occur:

- A signalized intersection operating at LOS D or better deteriorates to LOS E with an added average intersection delay of two seconds.
- A signalized intersection operating at LOS E continues to operate at LOS E or deteriorates to LOS F with an added average intersection delay of three seconds.
- A signalized intersection operating at LOS F continues to operate at LOS F with an increase in the volume to capacity (V/C) ratio by 0.01.
- A stop-controlled movement of an unsignalized intersection operates at LOS F, the peak hour signal warrant (*California Manual on Uniform Traffic Control Devices [MUTCD] Warrant 3*) is met, and a minimum of 10 vehicles are added to the critical movement.

The City's General Plan Policy T-18 (Level of Service) requires the City to consider how a plan or project affects all modes of transportation, including transit riders, bicyclists, pedestrians, and motorists, to determine the transportation impacts of a plan or project. Thus, consistent with the City's General Plan Policy, if a project triggers one or more of the intersection LOS thresholds listed above, the impact may be considered less than significant if the project or plan has significant benefits for pedestrian, bicycle, and/or transit riders, or significant beneficial impacts on air quality, noise, visual quality, or safety, because these benefits may offset the significant adverse impact on LOS.

Pedestrian and Bicyclists: the project would have a significant impact if it results in a Streetscore+ of 3 or higher on the street segments or major intersections along the Adeline Corridor.

### b. Alameda County Transportation Commission Significance Criteria

For projects that are expected to generate at least 100 PM peak hour trips, the project is required to use the Alameda CTC Model to assess impacts on the regional Congestion Management Program (CMP) roadways near the Plan Area. The Project would have a significant impact on the CMP roadway segments in the Project area if any of the following would occur:

- A facility operating at LOS E or better deteriorates to LOS F.
- A facility operating at LOS F continues to operate at LOS F with an increase in the V/C ratio by 0.03 or more.

## 4.12.5 Impact Analysis

<p><b>Threshold 1:</b> Would the Specific Plan conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?</p> <p><b>Threshold 2:</b> Would the Specific Plan conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways?</p>
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### a. Intersection Operations Analysis

This section evaluates impacts of the proposed Specific Plan on traffic operations at the study intersections under Existing and 2040 conditions based on the City of Berkeley's significance criteria for intersection operations.

#### Existing Plus Project Conditions

Traffic volumes under Existing Plus Project conditions consist of trips generated by development projects facilitated by the Specific Plan (see Table 4.12-7) added to the Existing traffic volumes. The Existing Plus Project conditions also accounts for the street modifications envisioned by the Specific Plan and described on page 4.12-16.

Intersection LOS calculations for Existing Plus Project conditions were completed with the traffic volumes and roadway network described above. Table 4.12-8 summarizes the intersection LOS results. Appendix E.D presents the detailed intersection LOS calculation worksheets.

**Table 4.12-8 Existing Plus Project Conditions Intersection LOS Summary**

Intersection	Traffic Control <sup>1</sup>	Peak Hour	Existing Conditions		Existing Plus Project Conditions		Significant Impact?
			Delay <sup>2,3</sup>	LOS <sup>2,3</sup>	Delay <sup>2,3</sup>	LOS <sup>2,3</sup>	
1 Shattuck Avenue/ Dwight Way	Signal	AM	25	C	27	C	No
		PM	22	C	23	C	
2 Shattuck Avenue/ Adeline Street <sup>4</sup>	Signal	AM	15	B	18	B	No
		PM	15	B	20	B	
3 MLK Jr. Way/ Ashby Avenue	Signal	AM	24	C	25	C	No
		PM	23	C	24	C	
4 Adeline Street/ Ashby Avenue	Signal	AM	31	C	33	D	No
		PM	35	C	39	D	
5 Shattuck Avenue/ Ashby Avenue <sup>4</sup>	Signal	AM	23	C	24	C	No
		PM	25	C	25	C	
6 MLK Jr. Way/ Adeline Street <sup>4</sup>	Signal	AM	12	B	18	B	No
		PM	14	B	20	B	
7 Adeline Street/ Alcatraz Avenue	Signal	AM	49	D	<b>116</b>	<b>F</b>	<b>Yes</b>
		PM	<b>75</b>	<b>E</b>	<b>&gt;150</b>	<b>F</b>	
8 Adeline Street/ MLK Jr. Way	Signal	AM	25	C	25	C	No
		PM	41	D	30	C	
9 Shattuck Avenue/ Carlton Street	Signal	AM	9	A	10	A	No
		PM	14	B	15	B	

<sup>1</sup> Signal = intersection is controlled by a traffic signal; SSSC = Intersection is controlled by a stop-sign on the side-street approach

<sup>2</sup> For signalized intersections, average intersection delay and LOS is shown. For side-street stop-controlled intersections, delay for worst movement is shown. Delay and LOS calculated using HCM2010, unless noted.

<sup>3</sup> Intersections operating at LOS E or LOS F are shown in bold.

<sup>4</sup> Delay and LOS calculated using HCM 2000, due to limitations in HCM 2010.

Source: Fehr & Peers 2018

In general, most study intersections are projected to experience more delay under Existing Plus Project conditions than under Existing Conditions, due to the additional traffic generated by the project and the narrowing of the automobile right-of-way. All study intersections, except the following, are expected to continue to operate at LOS D or better during both AM and PM peak hours:

- The signalized Adeline Street/Alcatraz Avenue intersection (#7) would operate at LOS F during both the AM and PM peak hours.

This intersection is analyzed below.

**Impact T-1** THE ADDITION OF TRAFFIC GENERATED BY THE DEVELOPMENT PROJECTS FACILITATED BY THE SPECIFIC PLAN AND THE ROADWAY MODIFICATIONS PROPOSED BY THE SPECIFIC PLAN WOULD CAUSE THE SIGNALIZED ADELINE STREET/ALCATRAZ AVENUE INTERSECTION TO DETERIORATE FROM LOS D DURING THE AM PEAK HOUR AND LOS E DURING THE PM PEAK HOUR UNDER EXISTING CONDITIONS TO LOS F DURING BOTH AM AND PM PEAK HOURS UNDER EXISTING PLUS PROJECT CONDITIONS. THIS IMPACT WOULD BE SIGNIFICANT AND UNAVOIDABLE.

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The Specific Plan includes narrowing both the northbound and southbound approaches of Adeline Street at the Adeline Street/Alcatraz Avenue intersection from three to two automobile lanes in order to widen the sidewalks and provide one-way cycletracks in both directions of Adeline Street. The impact would be triggered by either the elimination of one travel lane in each direction of Adeline Street or the addition of traffic generated by about 55 percent of the development projects facilitated by the Specific Plan and would result in a significant impact at this intersection.

### **Mitigation Measures**

Traffic operations at the Adeline Street/Alcatraz Avenue intersection can be improved by providing additional automobile travel lanes, such as third through lanes on the northbound and southbound Adeline Street approaches of the intersection. However, these modifications cannot be accommodated within the proposed automobile right-of-way and would require additional right-of-way, and/or loss of planned bicycle and/or pedestrian facilities, and are considered to be infeasible because they would be in conflict with the Specific Plan and City of Berkeley General Plan goals to promote pedestrian and bicycle travel. Since the mitigation measure would result in secondary significant impacts, it is considered infeasible.

The development projects facilitated by the Specific Plan would be required to implement a TDM Plan, which is not reflected in the trip generation assumed in this EIR. TDM strategies would reduce the automobile trips generated by development projects and reduce the magnitude of the impact at the Adeline Street/Alcatraz Avenue intersection. Since the exact strategies that would be implemented for each development project is not known at this time, the effectiveness of the TDM Plans cannot be estimated. Therefore, it cannot be guaranteed that the required TDM plans would reduce the impact to a level below significance.

### **Significance After Mitigation**

No feasible mitigation is available to reduce the LOS-based impact at this intersection. Therefore, the impact is considered significant and unavoidable. This finding is consistent with the City's General Plan Policy T-18 (Level of Service), which requires the City to consider how a plan or project affects all modes of transportation, including transit riders, bicyclists, pedestrians, and motorists, to determine the transportation impacts of a plan or project. The Specific Plan would trigger a LOS-based impact at this intersection; however, the Specific Plan would also include a number of improvements at this intersection, which would benefit pedestrians and bicyclists, such as dedicated Class 4 cycletracks and shorter pedestrian crossings. As shown in Table 4.12-11, the Specific Plan improvements would improve the Streetscore+ at the intersection from 4 to 2 for both pedestrians and bicyclists. Considering the improvement in safety and comfort for pedestrians and bicyclists which would encourage walking and biking in the project area, and consistent with the City's General Plan Policy T-18, the mitigation measures to mitigate the LOS-based impact at this

intersection are considered infeasible because they would preclude the Specific Plan's significant benefits for pedestrian and bicyclists.

**Impact T-2** THE ADDITION OF TRAFFIC GENERATED BY THE DEVELOPMENT PROJECTS FACILITATED BY THE SPECIFIC PLAN MAY ADD 10 OR MORE PEAK HOUR TRIPS TO THE CRITICAL MOVEMENT OF AN UNSIGNALIZED INTERSECTION THAT OPERATES AT LOS F AND RESULT IN THE PEAK HOUR SIGNAL WARRANT (MUTCD, WARRANT 3) BEING MET UNDER EXISTING PLUS PROJECT CONDITIONS. THIS IMPACT WOULD BE SIGNIFICANT BUT MITIGATABLE TO LESS THAN SIGNIFICANT.

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The exact location, size, and type of development projects facilitated by the Specific Plan are not known at this time. Many of these developments may have their primary access on a local street that is controlled by stop-signs at the intersection with a major street. These development projects may result in a significant impact if the stop-controlled movement at the intersection would operate at LOS F, the development project would add ten or more peak hour trips to the movement, and the intersection would meet the MUTCD signal warrant with the addition of the project development project trips.<sup>1</sup>

### Mitigation Measures

The potentially significant impact at these side-street stop-controlled intersections can be mitigated by installing a signal at these intersections or implementing other improvements, such as restricting the impacted side-street to right-turns only.

*Mitigation Measure T-2 Signal Warrant Study and Signalization.*

Development projects tiering from the Adeline Street Specific Plan EIR with primary automobile access on one of the following local streets that is currently controlled by a stop-sign at the intersection with a major street shall evaluate traffic operations and the MUTCD signal warrants at the intersection:

- Shattuck Avenue at Blake, Parker, and Derby Streets
- Adeline Street at Stuart, Russell, Essex, Woolsey, Fairview, and Harmon Streets

The signal warrant study shall be completed as part of the environmental review process for the development project. If the intersection meets the signal warrants and the development project would add ten or more trips to the critical movement that operates at LOS F during the AM and/or PM peak hour, the study shall identify improvements to mitigate the impact. The improvements may consist of signalizing the intersection, and/or restricting one or more movements at the intersection. The study shall also evaluate the secondary effects of the identified improvement, such as traffic diverted to other streets due to turn restrictions. The development project shall install the identified improvement as approved by the City of Berkeley staff prior to full occupancy of the project.

### Significance After Mitigation

Mitigation Measure T-2 would reduce the impact to a less than significant level because it would install a signal at a side-street stop-controlled intersection that may meet signal warrants as a result of a development project facilitated by the Specific Plan.

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<sup>1</sup> Signal warrant analysis is used to determine whether conditions warrant the installation of a new traffic signal, or the continued operation of an existing traffic signal. Meeting one or more signal warrants does not mean that the intersection must be signalized.

## b. 2040 No Project Conditions

The 2040 No Project conditions account for the planned increase in population and employment and planned transportation system modifications throughout the City of Berkeley and beyond. Traffic volumes for the 2040 No Project conditions were forecasted using the latest version of the Alameda CTC Countywide Travel Demand Model, which was released in June 2018. The Model is based on the Metropolitan Transportation Commission (MTC) *Plan Bay Area 2040* (i.e., Sustainable Community Strategies) transportation network and land uses for 2020 and 2040.

The Alameda CTC Model is a regional travel demand model that uses socio-economic data and roadway and transit network assumptions to forecast traffic volumes and transit ridership using a four-step modeling process that includes trip generation, trip distribution, mode split, and trip assignment. This process accounts for changes in travel patterns due to future growth and expected changes in the transportation network.<sup>2</sup> The Model land use database was modified to reflect the recently approved and proposed developments in the vicinity of the Plan Area, which consist of about 550 residential units and about 33,000 square feet of commercial space.

Based on the Model results, the Existing Conditions traffic volumes are increased by about 18 percent during the AM peak hour and by about 26 percent during the PM peak hour to estimate the traffic volumes under 2040 No Project conditions.

The only major street change currently funded and planned in the Plan Area is the replacement of the existing Class 2 bicycle lanes along Adeline Street north of Ashby Avenue with Class 4 cycletracks as part of a planned repaving project. The improvement, expected to be implemented in 2019, would accommodate the Class 4 cycletracks by placing the cycletracks on the right side of the parking lanes. The corridor would continue to provide two travel lanes in each direction, which would not affect traffic operations at the study intersections. No other major transportation network modifications are currently funded or planned in the Plan Area. Thus, the 2040 No Project analysis assumes the existing street network and signal timings at the ten study intersections.

Intersection LOS calculations for the 2040 No Project conditions were completed with the traffic volumes and roadway network described above. Table 4.12-9 summarizes the intersection LOS results. Appendix E.D presents the detailed intersection LOS calculation worksheets.

In general, the study intersections are projected to experience more delay under 2040 No Project conditions than under Existing Conditions, due to expected increase in traffic volumes. All study intersections, except the following, are expected to continue to operate at LOS D or better during both AM and PM peak hours:

- The signalized Adeline Street/Alcatraz Avenue intersection (#7) would operate at LOS F during both the AM and PM peak hours.

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<sup>2</sup> The forecasting process used in this analysis does not consider some recent or foreseeable travel changes, including increased use of transportation network companies, such as Uber and Lyft, nor the potential for autonomous vehicles. Although the technology for autonomous vehicles is expected to be available over the planning horizon (i.e., 2040), the federal and State legal and policy frameworks are uncertain. Some planners believe these technologies would reduce congestion and parking demand in urban areas, while others believe that if unregulated, they could lead to further sprawl and growth in vehicle travel. Given the speculative nature of these evolving forms of transportation, this study applies a "business as usual" approach and assumes that autonomous vehicles may be in the vehicle fleet by 2040 but operate in a similar way to current private vehicles.

- The signalized Adeline Street/MLK Jr. Way intersection (#8) would operate at LOS E during the AM peak hour and LOS F during the PM peak hour.

Table 4.12-9 2040 Conditions Intersection LOS Summary

Intersection	Traffic Control <sup>1</sup>	Peak Hour	2040 No Project Conditions		2040 Plus Project Conditions		Signiant Impact?
			Delay <sup>2,3</sup>	LOS <sup>2,3</sup>	Delay <sup>2,3</sup>	LOS <sup>2,3</sup>	
1 Shattuck Avenue/ Dwight Way	Signal	AM	36	C	43	D	No
		PM	29	C	31	C	
2 Shattuck Avenue/ Adeline Street <sup>4</sup>	Signal	AM	22	C	29	C	No
		PM	19	B	32	C	
3 MLK Jr. Way/ Ashby Avenue	Signal	AM	27	C	29	C	No
		PM	24	C	53	D	
4 Adeline Street/ Ashby Avenue	Signal	AM	38	D	44	D	No
		PM	41	D	44	D	
5 Shattuck Avenue/ Ashby Avenue <sup>4</sup>	Signal	AM	34	C	36	D	No
		PM	30	C	34	C	
6 MLK Jr. Way/ Adeline Street <sup>4</sup>	Signal	AM	12	B	53	D	No
		PM	18	B	45	D	
7 Adeline Street/ Alcatraz Avenue	Signal	AM	<b>141</b> (V/C = 1.67)	<b>F</b>	<b>&gt;150</b> (V/C = 1.98)	<b>F</b>	<b>Yes</b>
		PM	<b>143</b> (V/C = 1.58)	<b>F</b>	<b>&gt;150</b> (V/C = 2.63)	<b>F</b>	
8 Adeline Street/ MLK Jr. Way	Signal	AM	<b>77</b>	<b>E</b>	<b>63</b>	<b>E</b>	No
		PM	<b>86</b>	<b>F</b>	<b>68</b>	<b>E</b>	
9 Shattuck Avenue/ Carlton Street	Signal	AM	11	B	12	B	No
		PM	16	B	17	B	

<sup>1</sup> Signal = intersection is controlled by a traffic signal; SSSC = Intersection is controlled by a stop-sign on the side-street approach

<sup>2</sup> For signalized intersections, average intersection delay and LOS is shown. For side-street stop-controlled intersections, delay for worst movement is shown. Delay and LOS calculated using HCM2010, unless noted.

<sup>3</sup> Intersections operating at LOS E or LOS F are shown in bold.

<sup>4</sup> Delay and LOS calculated using HCM 2000, due to limitations in HCM 2010.

Source: Fehr & Peers 2018

### c. 2040 Plus Project Conditions

Traffic volumes under 2040 Plus Project conditions consist of trips generated development projects facilitated by the Specific Plan (see Table 4.12-7) added to the 2040 No Project traffic volumes. The 2040 Plus Project conditions also accounts for the street modifications envisioned by the Specific Plan and described on page 4.12-16.

Intersection LOS calculations for 2040 Plus Project conditions were completed with the traffic volumes and roadway network described above. Table 4.12-9 summarizes the intersection LOS results. Appendix E.D presents the detailed intersection LOS calculation worksheets.

In general, most study intersections are projected to experience more delay under 2040 Plus Project conditions than under 2040 No Project Conditions, due to the additional traffic generated by the project and the narrowing of the automobile right-of-way. All study intersections, except the following, are expected to continue to operate at LOS D or better during both AM and PM peak hours:

- The signalized Adeline Street/Alcatraz Avenue intersection (#7) would operate at LOS F during both the AM and PM peak hours.
- The signalized Adeline Street/MLK Jr. Way intersection (#8) would operate at LOS E during both the AM and PM peak hours. Traffic operations at this intersection would improve compared to the 2040 No Project conditions because the Specific Plan would provide a left-turn lane and protected left-turn phasing on the northbound MLK Jr. Way approach of the intersection, which would reduce the delay on this approach because left-turning vehicles would no longer need to wait for gaps in the opposing southbound approach and through vehicles on the northbound approach would not be queued behind the left-turning vehicles.

**Impact T-3** THE ADDITION OF TRAFFIC GENERATED BY THE DEVELOPMENT PROJECTS FACILITATED BY THE SPECIFIC PLAN AND THE ROADWAY MODIFICATIONS PROPOSED BY THE SPECIFIC PLAN WOULD INCREASE THE V/C RATIO BY MORE THAN 0.01 AT THE SIGNALIZED ADELINE STREET/ALCATRAZ AVENUE INTERSECTION, WHICH WOULD OPERATE AT LOS F DURING BOTH AM AND PM PEAK HOURS IN 2040 REGARDLESS OF THE PROPOSED SPECIFIC PLAN. THIS IMPACT WOULD BE SIGNIFICANT AND UNAVOIDABLE.

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The Specific Plan includes narrowing both the northbound and southbound approaches of Adeline Street at the Adeline Street/Alcatraz Avenue intersection from three to two automobile lanes in order to widen the sidewalks and provide one-way cycletracks in both directions of Adeline Street. The impact would be triggered by either the elimination of one travel lane in each direction of Adeline Street or the addition of traffic generated by about 55 percent of the development projects facilitated by the Specific Plan and result in a significant impact at this intersection.

### Mitigation Measures

Traffic operations at the Adeline Street/Alcatraz Avenue intersection can be improved by providing additional automobile travel lanes, such as third through lanes on the northbound and southbound Adeline Street approaches of the intersection. However, these modifications cannot be accommodated within the proposed automobile right-of-way and would require additional right-of-way, and/or loss of planned bicycle and/or pedestrian facilities, and are considered to be infeasible because they would be in conflict with the Specific Plan and City of Berkeley General Plan goals to promote pedestrian and bicycle travel. Since the mitigation measure would result in secondary significant impacts, it is considered infeasible.

The development projects facilitated by the Specific Plan would be required to implement a TDM Plan, which is not reflected in the trip generation assumed in this EIR. TDM strategies would reduce the automobile trips generated by development projects and reduce the magnitude of the impact at the Adeline Street/Alcatraz Avenue intersection. Since the exact strategies that would be implemented for each development project is not known at this time, the effectiveness of the TDM Plans cannot be estimated. Therefore, it cannot be guaranteed that the required TDM plans would reduce the impact to a level below significance.

## Significance After Mitigation

No feasible mitigation is available to reduce the LOS-based impact at this intersection. Therefore, the impact is considered significant and unavoidable. This finding is consistent with the City's General Plan Policy T-18 (Level of Service), which requires the City to consider how a plan or project affects all modes of transportation, including transit riders, bicyclists, pedestrians, and motorists, to determine the transportation impacts of a plan or project. The Specific Plan would trigger a LOS-based impact at this intersection; however, the Specific Plan would also include a number of improvements at this intersection, which would benefit pedestrians and bicyclists, such as dedicated Class 4 cycletracks and shorter pedestrian crossings. As shown in Table 4.12-11, the Specific Plan improvements would improve the Streetscore+ at the intersection from 4 to 2 for both pedestrians and bicyclists. Considering the improvement in safety and comfort for pedestrians and bicyclists which would encourage walking and biking in the project area, and consistent with the City's General Plan Policy T-18, the mitigation measures to mitigate the LOS-based impact at this intersection are considered infeasible because they would preclude the Specific Plan's significant benefits for pedestrian and bicyclists.

**Impact T-4** THE ADDITION OF TRAFFIC GENERATED BY THE DEVELOPMENT PROJECTS FACILITATED BY THE SPECIFIC PLAN MAY ADD 10 OR MORE PEAK HOUR TRIPS TO THE CRITICAL MOVEMENT OF AN UNSIGNALIZED INTERSECTION THAT OPERATES AT LOS F AND RESULT IN THE PEAK HOUR SIGNAL WARRANT (MUTCD, WARRANT 3) BEING MET UNDER 2040 PLUS PROJECT CONDITIONS. THIS IMPACT WOULD BE SIGNIFICANT BUT MITIGATABLE TO LESS THAN SIGNIFICANT.

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The exact location, size, and type of development projects facilitated by the Specific Plan are not known at this time. Many of these developments may have their primary access on a local street that is controlled by stop-signs at the intersection with a major street. These development projects may result in a significant impact if the stop-controlled movement at the intersection would operate at LOS F, the development project would add ten or more peak hour trips to the movement, and the intersection would meet the signal warrant with the addition of the project development project trips.

## Mitigation Measures

The potentially significant impact at these side-street stop-controlled intersections can be mitigated by implementing Mitigation Measure T-2 described under Impact T-2.

## Significance After Mitigation

Mitigation Measure T-2 would reduce the impact to a less than significant level because it would install a signal at a side-street stop-controlled intersection that may meet signal warrants as a result of a development project facilitated by the Specific Plan.

## d. Pedestrian and Bicycle Comfort

**Impact T-5** THE ROADWAY MODIFICATIONS PROPOSED BY THE SPECIFIC PLAN WOULD NOT CAUSE STREETSCORE+ OF 3 OR HIGHER FOR PEDESTRIANS AND BICYCLISTS ON THE STREET SEGMENTS ALONG THE ADELIN CORRIDOR. THIS IMPACT WOULD BE LESS THAN SIGNIFICANT.

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The impact of the proposed Specific Plan on pedestrian and bicyclist comfort is evaluated using the Streetscore+ methodology. Based on the significance criteria, the proposed

Specific Plan would have a significant impact if it results in a Streetscore+ of 3 or higher on the street segments along the Adeline Corridor.

Table 4.12-10 summarizes the Streetscore+ comfort analysis for both pedestrians and bicyclists on both sides of every segment along the corridor and Table 4.12-11 summarizes the Streetscore+ comfort analysis for both pedestrians and bicyclists at the major intersections along the corridor, assuming the implementation of the long-term improvements along the Adeline Corridor as described on page 4.12-16. Appendix E.B presents the Streetscore+ calculations.

For pedestrians, the proposed long-term improvements would improve the Streetscore+ results along the corridor primarily by providing continuous buffers between the sidewalks and the adjacent automobile lanes, improving the quality of the sidewalks, providing pedestrian-scale lighting, and narrowing the vehicle travel lanes which would result in lower prevailing automobile speeds. Similarly, the long-term improvements would improve the Streetscore+ results for pedestrians at the major intersections by updating the signal equipment at the intersections, reducing the length of the street crossings, and ensuring that intersections meet ADA requirements.

Similarly, the proposed long-term improvements would improve the Streetscore+ results for bicyclists along the corridor primarily by providing continuous dedicated Class 4 cycletracks along the corridor. The corridor would generally have a score of 1, except for the west side of Adeline Street in the North Adeline subarea, and both sides of Adeline Street in the South Adeline segment, which would have a score of 2 because the cycletrack would be separated from the adjacent parking drive aisle with a rolled curb, and no physical barriers. Similarly, the long-term improvements would improve the Streetscore+ results for bicyclists at the major intersections by providing dedicated Class 4 cycletracks at the intersections, which eliminates many of the existing conflicts for bicyclists at these intersections.

**Table 4.12-10 Specific Plan Conditions - Pedestrian and Bicycle Streetscore+ Summary (Street Segments)**

Street Segment	Segment Limits	Pedestrian <sup>1</sup>		Bicycle <sup>1</sup>	
		West Side	East Side	West Side	East Side
Shattuck Avenue	Between Dwight Way and Adeline Street	2	2	1	1
Adeline Street	Between Shattuck Avenue and Ashby Avenue	1	2	2	1
	Between Ashby Avenue and Woolsey Street	2	2	1	1
	Between Woolsey Street and Alcatraz Avenue	1	1	2	2
	Between Alcatraz Avenue and 62nd Street	1	2	1	1

<sup>1</sup> Based on the application of the Streetscore+ methodology as described in Appendix E.B

Source: Fehr & Peers 2018

**Table 4.12-11 Specific Plan Conditions - Pedestrian and Bicycle Streetscore+ Summary (Intersections)**

Intersection	Pedestrian <sup>1</sup>	Bicycle <sup>1</sup>
Shattuck Avenue/Dwight Way	2	2
Shattuck Avenue/Adeline Street	2	2
Adeline Street/Ashby Avenue	2	1
MLK Jr. Way/Adeline Street	2	1
Adeline Street /Alcatraz Avenue	2	2
Adeline Street/MLK Jr. Way	2	1

<sup>1</sup> Based on the application of the Streetscore+ methodology as described in Appendix E.A

Source: Fehr & Peers 2019

All segments of the Adeline Corridor, along with the major intersections along the corridor, would have a Streetscore+ of 1 or 2 for pedestrians and bicycles with the implementation of the long-term improvements. Therefore, the Specific Plan’s impact on the pedestrian and bicyclist comfort would be less than significant.

### Mitigation Measures

No mitigation measures are required.

### e. Congestion Management Program Analysis

**Threshold 2:** Would the Specific Plan conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways?

**Impact T-6** THE ADDITION OF TRAFFIC GENERATED BY THE DEVELOPMENT PROJECTS FACILITATED BY THE SPECIFIC PLAN AND THE ROADWAY MODIFICATIONS PROPOSED BY THE SPECIFIC PLAN WOULD RESULT IN THE STUDY CMP ROADWAY SEGMENTS TO DETERIORATE FROM LOS E OR BETTER TO LOS F, OR INCREASE V/C RATIO BY 0.03 OR MORE FOR A FACILITY OPERATING AT LOS F WITHOUT THE SPECIFIC PLAN. THIS IMPACT WOULD BE SIGNIFICANT AND UNAVOIDABLE.

Since development projects facilitated by the Specific Plan would generate more than 100 PM peak hour trips, Alameda CTC requires the use of the Countywide Travel Demand Model to assess the impacts on the regional roadways near the Plan Area. The Alameda CTC Model is described on page 4.12-27.

For the purposes of this CMP analysis, the project (i.e., future development projects in the Plan Area) is assumed to not be included in the Model to present a more conservative analysis. The PM peak hour traffic forecasts for the 2020 and 2040 scenarios were extracted for the CMP and MTS study roadway segments from that model and used as the “Without Project” forecasts. Vehicle trips generated by the project were added to the “Without Project” forecasts to estimate the “Plus Project” forecasts. This study evaluated the following roadway segments, per the Alameda CTC comment letter dated August 2, 2018:

1. Shattuck Avenue
2. Adeline Street
3. MLK Jr. Way
4. Ashby Avenue
5. Dwight Way

These segments were assessed using V/C ratios, assuming a per-lane capacity of 800 vehicles per hour. Appendix E.F presents the results. Traffic generated by the development facilitated by the Specific Plan and the roadway modifications proposed by the Specific Plan would contribute to increases in traffic congestion along the studied roadway segments under both 2020 and 2040 conditions and would cause a significant impact on the following segments:

- Both directions of Adeline Street between the two separated segments of MLK Jr. Way would operate at LOS F regardless of the Specific Plan and the Specific Plan would increase the V/C ratio by more than 0.03.

The Specific Plan includes narrowing both northbound and southbound Adeline Street between the two separated segments of MLK Jr. Way from three to two automobile lanes in order to widen the sidewalks and provide one-way cycletracks in both directions of Adeline Street. Similar to Impacts T-1 and T-3 at the Adeline Street/Alcatraz Avenue intersection, the elimination of one travel lane in each direction and the addition of traffic generated by the development projects facilitated by the Specific Plan would deteriorate traffic operations and result in a significant impact along these segments.

### **Mitigation Measures**

As discussed under Impacts to Impacts T-1 and T-3, traffic operations along this segment of Adeline Street can be improved by providing additional automobile travel lanes, such as third through lanes on the northbound and southbound Adeline Street approaches of the intersection. However, these modifications cannot be accommodated within the proposed automobile right-of-way and would require additional right-of-way, and/or loss of planned bicycle and/or pedestrian facilities, and are considered to be infeasible because they would be in conflict with the Specific Plan and City of Berkeley General Plan goals to promote pedestrian and bicycle travel, and would reduce the project benefits in improving the Streetscore+ for pedestrian and bicycle safety and comfort. Therefore the mitigation measure is considered infeasible.

### **Significance After Mitigation**

No feasible mitigation is available to reduce this impact. Therefore, this impact would remain significant and unavoidable.

## f. Air Traffic

**Threshold 3:** Would the Specific Plan result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?

**Impact T-7** THE PROPOSED SPECIFIC PLAN WOULD NOT RESULT IN A CHANGE IN AIR TRAFFIC PATTERNS, INCLUDING EITHER AN INCREASE IN TRAFFIC LEVELS OR A CHANGE IN LOCATION THAT RESULTS IN SUBSTANTIAL SAFETY RISKS. THIS IMPACT WOULD BE LESS THAN SIGNIFICANT.

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The proposed Specific Plan would not result in significant impacts on air traffic. The proposed Specific Plan would have no impact on air traffic patterns as it would not introduce new air traffic nor interfere with existing air traffic; the nearest public airport is Oakland International Airport, located approximately 12 miles south of the Plan Area. The proposed Specific Plan would not result in a change in air traffic patterns, including either an increase in air traffic levels or a change in location, which would result in substantial safety risks. Therefore, the Specific Plan's impact on air traffic is less than significant.

### Mitigation Measures

No mitigation measures are required.

## g. Hazards due to Design Features or Incompatible Uses

**Threshold 4:** Would the Specific Plan substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?

**Impact T-8** THE PROPOSED SPECIFIC PLAN WOULD NOT SUBSTANTIALLY INCREASE HAZARDS DUE TO A DESIGN FEATURE (E.G., SHARP CURVES OR DANGEROUS INTERSECTIONS) OR INCOMPATIBLE USES (E.G., FARM EQUIPMENT). THIS IMPACT WOULD BE LESS THAN SIGNIFICANT.

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The proposed Specific Plan would include interim and long-term modifications to the public right-of-way and development projects that could affect transportation safety. The following physical changes and features proposed by the Specific Plan would improve safety in the Plan Area:

- Wider sidewalks and generally larger buffers which would increase the separation between pedestrians on sidewalks and vehicles on the streets along the corridor
- Curb-extensions at intersections on key pedestrian streets which would reduce pedestrian street crossing distances and increase pedestrian visibility
- Pedestrian-scale street lighting which would improve pedestrian visibility
- Generally shorter crossing distances at intersections along the Adeline Corridor
- Improvements to uncontrolled pedestrian crossings through installation of PHBs, RRFBs or other devices
- Implementation of traffic calming devices, such as chicanes and traffic circles, which would reduce automobile speeds and/or volumes
- Universal accessibility features (Americans with Disabilities Act), such as audible signal crossings and directional accessible curb ramps, that improve accessibility and safety for all users

- Continuous Class 4 cycletracks along the Adeline Corridor that would separate bicycle and automobile traffic
- Narrower automobile lanes that would reduce automobile speeds along the corridor

All modifications to the public right-of-way would be consistent with appropriate regulations and design standards in effect at the time.

The Specific Plan includes PHBs at the bicycle boulevard crossings of the Adeline Street at Russell and Woolsey Streets and of MLK Jr. Way at Prince Street, consistent with the recommendations in the City's Bicycle Plan. These PHBs will benefit pedestrians and bicyclists by providing a protected crossing of the major streets. The PHBs would not impact traffic flow or safety along the corridor because there will be interconnect between the PHBs and the adjacent signals, which will allow the coordination of signal timings between the PHBs and the adjacent signals and minimize the delay experienced by the motorists along the corridor and the potential for queues spilling back from the PHBs and blocking the upstream signalized intersections.

The particular location and/or design elements of individual future developments under the proposed Specific Plan are not known. Each development project would be reviewed and required to be consistent with appropriate regulations and design standards in effect at the time.

The proposed Specific Plan would increase the amount of residential and commercial uses in an area that is currently dominated by these types of uses. Thus, the Specific Plan would not introduce incompatible uses in the Plan Area. Therefore, the Specific Plan would not cause a significant impact on hazards due to design features or incompatible uses.

### Mitigation Measures

No mitigation measures are required.

### h. Emergency Access

<b>Threshold 5:</b> Would the Specific Plan result in inadequate emergency access?
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**Impact T-9** THE PROPOSED SPECIFIC PLAN WOULD NOT RESULT IN INADEQUATE EMERGENCY ACCESS. THIS IMPACT WOULD BE LESS THAN SIGNIFICANT.

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The Plan Area is served by Berkeley Fire Station #5, which is located at the northwest corner of the Shattuck Avenue/Derby Street intersection, within the Plan Area.

Although the Specific Plan would narrow through lanes along the corridor to 10 or 11 feet, and eliminate travel lanes along some segments of Adeline Street, the corridor would continue to accommodate fire apparatus and other emergency response vehicles. The Specific Plan's design guidelines and proposed street modifications would provide for adequate accommodation of fire access to the building frontages and fire hydrants throughout the Plan Area.

The Plan Area would continue to provide multiple access points throughout the Plan Area. Thus, existing and future developments in the Plan Area would continue to have access from multiple access points. As a result, if one access point were blocked, emergency vehicles from Fire Station #5 or other fire stations can use other access point(s) to reach any location within the Plan Area and surrounding areas.

Thus, there would be adequate emergency service and access throughout the Plan Area, and the Specific Plan would not cause a significant impact on emergency access.

### Mitigation Measures

No mitigation measures are required.

### Significance After Mitigation

This impact would be less than significant without mitigation.

#### i. Consistency with Adopted Policies, Plans, or Program Regarding Public Transit, Bicycle and Pedestrian Facilities

**Threshold 6:** Would the Specific Plan conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities?

**Impact T-10** THE PROPOSED SPECIFIC PLAN WOULD NOT CONFLICT WITH ADOPTED POLICIES, PLANS, OR PROGRAMS REGARDING PUBLIC TRANSIT, BICYCLE, OR PEDESTRIAN FACILITIES, OR OTHERWISE DECREASE THE PERFORMANCE OR SAFETY OF SUCH FACILITIES. THIS IMPACT WOULD BE LESS THAN SIGNIFICANT.

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The City of Berkeley General Plan Transit First Policy (Policy T-4) states a strong preference for encouraging the use of non-automobile transportation modes, such as transit, bicycling, and walking and directs the City, in constructing and maintaining its transportation infrastructure, to resolve any conflicts between public transit and single occupant vehicles on Transit Routes identified on the Transit Network map in favor of the non-automobile mode. The City of Berkeley General Plan identifies the Adeline Corridor as a primary route for transit. In addition, the City's Complete Streets Policy requires that future streets allow safe and convenient travel for all street users.

The Specific Plan includes both interim and long-term modifications along the Adeline Corridor to primarily create a safer and more attractive pedestrian and bicycle environment. The interim improvements would consist of isolated physical improvements that can be independently implemented at various locations to primarily increase safety and comfort for pedestrians and cyclists, such as curb extension, RRFBs at intersections to improve pedestrian crossings, and/or PHBs at bicycle boulevard crossings of the corridor. These improvements are consistent with the City's Pedestrian Master Plan and Bicycle Plan.

The long-term improvements would primarily consist of narrowing the automobile right-of-way along the Adeline Corridor to widen the sidewalks and provide cycletracks. As described on page 4.12-30, the long-term modifications proposed by the Specific Plan along the Adeline Corridor would improve the pedestrian and bicyclist comfort (i.e., Streetscore+) along the corridor compared to current conditions. The long-term improvements would either eliminate or narrow automobile lanes, which would reduce pedestrian crossing distances at intersections along the corridor, and reduce the signal cycle lengths. These long-term modifications would make walking and cycling more attractive and encourage these activities in the Plan Area, consistent with both the General Plan and the Berkeley Complete Streets Policies.

The Specific Plan proposes continuous cycletracks along the Adeline Corridor. This is consistent with the *City of Berkeley Bicycle Plan*, which recommends Class 4 cycletracks along the corridor pending a Complete Street Corridor Study.

Bus service in the Plan Area is provided by AC Transit and not controlled by the City of Berkeley. Thus, the Specific Plan cannot modify bus service in the Plan Area. However, the Specific Plan includes modifications that would improve bus service along the Adeline Corridor. The pedestrian and bicyclist improvements described above would improve pedestrian and bicycle access for the bus stops along the corridor, as well as the Ashby BART station, and encourage more bus and BART riders to walk or bike to the bus stops and/or the BART station.

The Specific Plan would maintain the existing bus stop locations. In addition to ensuring that all bus stops would provide shelters, benches, and other amenities, the Specific Plan proposes to provide bus bulbs at all stops, which would enable buses to stop in the automobile lane while loading and unloading passengers. Bus bulbs reduce bus travel times by eliminating the need for buses to maneuver into bus pullout and wait for a gap in traffic to merge back into the automobile lane after leaving the bus stop.

The Specific Plan also proposes to accommodate Transit Signal Priority (TSP) at the traffic signals along the corridor, which would allow the signals to detect the location of the buses and provide preferable treatment, such as extending the green time or reducing the red time for approaching buses. Although the particular TSP strategies that would be implemented along the corridor are not known at this time, TSP can be used to ensure that buses operate on schedule and improve the reliability of the bus service along the corridor. It is estimated that providing bus bulbs and TSP can reduce travel times for buses along the corridor by eight to 15 percent.<sup>3</sup>

The Specific Plan would provide for high-density development in a mixed-use area with excellent pedestrian and bicycle infrastructure and in proximity of regional and local transit service. As previously documented in subsection 4.12.3(c), Trip Generation, development facilitated by the Specific Plan are estimated to generate about 45 percent fewer automobile trips than similar uses located in a more suburban and isolated setting.

Furthermore, the Specific Plan prescribes fewer parking spaces for future developments than current parking supplies in the Plan Area and requires developments to implement TDM measures, which encourage residents, workers, and visitors to use non-automobile travel modes.

Therefore, the proposed Specific Plan would not conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities.

## Mitigation Measures

No mitigation measures are required.

### 4.12.6 Vehicle Miles Traveled (Informational Only)

One performance measure used to quantify travel is vehicle miles traveled (VMT). VMT is a particularly useful metric for evaluating the impacts of development growth on greenhouse gas emissions because it can be used to estimate fuel consumption by motor vehicles. Increases in VMT cause proportional increases in greenhouse gas emissions, energy

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<sup>3</sup> Based on the following:

- Transit Cooperative Research Program Report 65, Evaluation of Bus Bulbs (2001)
- Transit Cooperative Research Program Report 83, Bus and Rail Transit Preferential Treatments in Mixed Traffic (2010)
- AC Transit Line 51 Transit Performance Initiative Project (2012)

consumption, and air pollution. This subsection presents the effects of the growth facilitated by the Specific Plan on VMT. The City of Berkeley is in the process of developing guidelines for use of VMT standards for CEQA and will have those standards in place by 2020 as mandated by the State. Both LOS and VMT analyses are included in this EIR, however, significance conclusions are based on the (LOS-based) standards that are currently in place.

VMT is typically an output from travel demand models and is calculated based on the number of vehicles multiplied by the distance traveled by each vehicle. This analysis uses total VMT per service population, where VMT includes all automobile trips with an origin and/or destination within the analyzed geographic area generated on a typical weekday. Service population is defined as the total number of residents and workers in the analyzed geographic area.

The Alameda CTC Travel Demand Model that was used to estimate future volumes (see page 4.12-27 for a description of the Model and its use in this EIR) was also used to estimate VMT for the Existing (2015) and 2040 Conditions with and without the proposed Specific Plan land use changes (Table 4.12-5). The Alameda CTC Model covers the entire nine county Bay Area. As a regional planning tool, it was developed through an extensive model validation process, and is able to replicate existing vehicular travel behavior. Therefore, it is able to provide a reasonable estimate of the VMT generated in various geographic areas on a typical weekday, as well as estimate future VMT considering local and regional land use and transportation system changes. The Model was used to estimate VMT generated by the Plan Area, City of Berkeley, Alameda County, and the entire Bay Area region under Existing and 2040 conditions with and without the Specific Plan.

The resulting VMT, shown in Table 4.12-12, accounts for 100 percent of all trips that begin and end within the analyzed geographic area and 50 percent of trips that either begin or end in the analyzed geographic area, and have their other origin or destination outside the analyzed geographic area. It does not include trips that have both an origin and destination outside the analyzed geographic area.

As shown in the table, the Plan Area has a lower VMT per service population than the City of Berkeley, Alameda County, or the Bay Area Region under all four study scenarios. The proposed Specific Plan is estimated to reduce the VMT per service population by about seven percent under both Existing and 2040 conditions. With the implementation of the Specific Plan, the VMT per service population for the Plan Area would be about 19 percent less than the City of Berkeley, 34 percent less than Alameda County, and 74 percent less than the Bay Area Region under Existing Conditions, and about 16 percent less than the City of Berkeley, 30 percent less than Alameda County, and 73 percent less than the Bay Area Region under 2040 conditions.

**Table 4.12-12 Vehicle Miles Traveled (VMT) Summary**

Geographic Area	VMT per Service Population			
	Existing No Project	Existing Plus Specific Plan	2040 No Project	2040 Plus Specific Plan
Specific Plan Area <sup>1</sup>	9.0	8.4	9.9	9.2
City of Berkeley	10.4	10.4	11.1	11.0
Alameda County	12.7	12.7	13.2	13.2
Bay Area Region	32.1	32.0	33.7	33.7

<sup>1</sup> Consisting of TAZs 92, 93, 112, 113, and 1415-1419.

Source: Fehr & Peers 2018

## 4.13 Utilities and Service Systems

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This section describes potential impacts from adoption of the Specific Plan on utilities and service systems, including infrastructure related to water supply, wastewater, solid waste, and energy.

### 4.13.1 Setting

#### a. Water Supply

##### **Water Service**

Water supply to the Plan Area is provided by the East Bay Municipal Utility District (EBMUD). Approximately 90 percent of the water used by EBMUD comes from the Mokelumne River watershed, and EBMUD transports it through pipe aqueducts to temporary storage reservoirs in the East Bay hills. EBMUD has water rights that allow for delivery of up to a maximum of 325 million gallons per day (mgd) from this source, subject to the availability of runoff and to the senior water rights of other users, downstream fishery flow requirements, and other Mokelumne River water uses. EBMUD is obligated to meet multiple operating objectives, including providing municipal water supply benefits, stream flow regulation, fishery/public trust interests, flood control, temperature management and obligations to downstream diverters. Among these factors, EBMUD's Mokelumne River flow commitments are generally tied to the variability in the Mokelumne River watershed rainfall and runoff patterns which govern the release requirements for the year.

##### **Demand Management and Water Conservation**

Northern California's water resources, including EBMUD's supplies, have been stressed by periodic drought cycles. Historical multi-year droughts have significantly diminished the supplies of water available to EBMUD's customers. During the early stages of a drought and throughout a drought period, EBMUD imposes drought management programs to reduce customer demands, thereby saving water for the following year in case drought conditions continue. EBMUD has established a goal of reducing water use by 20 percent district-wide.

EBMUD completed development of a revised Water Supply Management Program (WSMP) 2040 in April of 2012, which is the District's plan for providing water to its customers through 2040. According to the WSMP, EBMUD's water supplies are estimated to be sufficient during the planning period (2010-2040) in normal and single dry years. The WSMP 2040 emphasizes maximum conservation and recycling, with a total of 50 mgd of future supply to be provided from those two strategies. However, looking toward 2040, EBMUD's current supply is insufficient to meet customer needs during multi-year droughts despite EBMUD's aggressive water conservation and recycled water programs. Supplemental supply will also be needed to reduce the degree of rationing and to meet the need for water in drought years.

##### **Water Distribution**

EBMUD operates and maintains all treatment, storage, pumping, and distribution facilities within its service area and is responsible for all facilities up to the location of the water meter (EBMUD 2015). In the Plan Area, EBMUD's water distribution system provides potable water but is not presently equipped to distribute non-potable water. The pipeline system

includes pipes of varying sizes, ranging from six to 16 inches in diameter. The majority of those pipes are eight inches in diameter, and to a lesser extent, 10 and 12 inches in diameter.

Pressures within the overall system range from 30 pounds per square inch (psi) to 130 psi. Two pressure zones serve the Plan Area. The Claremont Pressure Zone serves the southern portion from 62<sup>nd</sup> Street to Oregon Street. In general, the Claremont Pressure Zone serves customers with service elevations of 100 to 200 feet above mean sea level (msl). This pressure zone has one 8 million gallon water storage reservoir known as Claremont Reservoir and is supplied by gravity from the Aqueduct Pressure Zone through a rate control station. The Aqueduct Pressure Zone serves the northern portion of the Plan Area from Oregon Street to Dwight Way. It also serves customers with service elevations of 100 to 200 feet above msl. This pressure zone uses the Claremont Tunnel for up to 8.9 million gallons of storage and is supplied by gravity from the Orinda Water Treatment Plant. The Orinda facility has the largest output of EBMUD's treatment plants with a peak capacity of 190 mgd.

## Water Supply Regulatory Setting

### *State*

Drinking water quality is regulated by the CDPH, the SWRCB, and the Regional Water Quality Control Board (RWQCB), San Francisco Bay Region (Region 2). The California Code of Regulations, Title 22 (State Drinking Water Standards) is the primary body of State legislation providing water system standards, including standards for water supply, storage capacity, and water quality. Other considerations include the Porter-Cologne Water Quality Control Act, the Safe Drinking Water Act, and the SWRCB Non-degradation Policy.

The Urban Water Management Planning Act of 1983 amended California Water Code to require all urban water suppliers in California to prepare and adopt an Urban Water Management Plan (UWMP) and update it every five years. This requirement applies to all suppliers providing water to more than 3,000 customers or supplying more than 3,000 acre-feet per year of water. EBMUD adopted its first UWMP in 1985, and has been updating the plan every five years since then, adjusting for current and projected water usage, water supply programs, and conservation and recycling programs. Water demand projections described in the UWMP account for anticipated future water demands within the EBMUD service territory, and changes in land uses including but not limited to densification and associated increases in water usage.

Senate Bill (SB) 610 (2002) amended California Water Code to require detailed analysis of water supply availability for certain types of development projects. The primary purpose of SB 610 is to improve the linkage between water and land use planning by ensuring greater communication between water providers and local planning agencies, and ensuring that land use decisions for certain types of development projects are fully informed as to whether sufficient water supplies are available to meet project demands. SB 610 requires the preparation of a Water Supply Assessment (WSA) for a project that is subject to CEQA and meets certain requirements, including residential developments of more than 500 dwelling units.

Assembly Bill 1881, the Model Water Efficient Landscape Ordinance (WELO), required cities and counties to adopt landscape water conservation ordinances by January 31, 2010, or to adopt a different ordinance that is at least as effective in conserving water as the ordinance. The City of Berkeley requires all new and renovated irrigated landscape of over

2,500 square feet area to comply with the WELO. The WELO reinforces landscape irrigation and water conservation best practices currently required by EBMUD's Section 31 Regulations.

Executive Order B-29-15 required the State to revise the Model WELO to increase water efficiency standards for new and retrofitted landscapes through more efficient irrigation systems, graywater usage, on-site stormwater capture, and by limiting the portion of landscapes that can be covered in turf (California Department of Water Resources 2015).

### *Regional and Local*

EBMUD is the regional public water agency serving the Plan Area and regulates water efficiency for water service customers. All applicants/proponents for new and expanded water services from EBMUD are required to comply with specifications in the Water Efficiency Requirements checklist provided in the agency's Section 31 Regulations (Appendix F). In order to meet WELO requirements, all landscaping meeting the 2,500-square-foot threshold must comply with the EBMUD's Section 31 Water Service Regulations for Outdoor Water Use. EBMUD will not furnish water service for new or expanded service unless all the applicable water-efficiency measures described in the Water Service Regulations are installed (at the project proponent's expense).

Although the Specific Plan itself does not propose construction of individual projects, residential buildout assumptions for the Specific Plan, as summarized in Section 2, *Project Description*, would exceed 500 residential units. EBMUD prepared a WSA in accordance with SB 610 for the proposed Specific Plan, as summarized under the Impact Analysis discussion below and included in Appendix F. Should future projects in the Plan Area meet the threshold requirements for preparation of a WSA, a project-specific WSA would be prepared by individual project proponents.

In response to Governor's Executive Order B-29-15, issued on April 1, 2015, EBMUD implemented mandatory water restrictions on all customers within its service area, with the goal of reducing water demand by 20 percent. EBMUD's Policy 3.07 ensures that priority for new water service connections during restrictive periods is given to proposed developments within EBMUD's service area that include housing units affordable to lower income households in accordance with California Government Code 65589.7. The policy also states that EBMUD will not deny an application for services to a proposed development that includes affordable housing unless certain conditions are met (e.g., water shortage emergency conditions are in effect).

### **BERKELEY GENERAL PLAN**

The Environmental Management Element of the City's General Plan contains the following policies and actions related to water supply (City of Berkeley 2001c):

**Policy EM-26 Water Conservation.** Ensure that neighborhoods are well served by commercial districts and community services and facilities, such as parks, schools, child-care facilities, and religious institutions.

**Action A.** Encourage drought-tolerant landscaping and low-flow irrigation systems.

**Action B.** Consider participation in the East Bay Municipal Utility District's East Bay-shore Recycled Water Project to make recycled water available for irrigation and other non-potable uses.

## b. Wastewater

EBMUD operates the large diameter interceptor sewer and provides municipal wastewater treatment for Berkeley. Sanitary sewage flows from Berkeley to EBMUD's wastewater interceptors, which then directly flows to the agency's Main Wastewater Treatment Plant (MWWTP) in Oakland. Berkeley's network of pipes begin with building connections at the upper laterals (which are privately-owned and maintained) and continue to the lower laterals and the sewer mains (which are City-owned and maintained). The City has approximately 456 miles of sanitary sewer mains, with an estimated over 31,000 lateral connections. The sewer mains vary from 1 to 100 years old, and vary in size from 6 to 48 inches in diameter. A 2012 assessment of the City's sanitary sewer system found that sewer lines in the Plan Area largely have sufficient capacity to accommodate wet-weather flow, except for sewer mains on Adeline Street south of Woolsey Street (Berkeley 2012).

The City's sewer system conveys wastewater to EBMUD's interceptor lines which flow to the MWWTP. In the Plan Area, the area west of Adeline Street and the area east of Adeline Street south of Woolsey Street and north of 63<sup>rd</sup> drain into EBMUD's North Interceptor that runs along Second Street (Pham 2018). The area east of Adeline Street north of Woolsey Street drains into EBMUD's Adeline Interceptor that runs along Adeline Street starting from Woolsey Street. The MWWTP has a primary treatment capacity of 320 mgd and a secondary treatment capacity of 168 mgd. Storage basins provide plant capacity for a short-term hydraulic peak of 415 mgd. The average annual daily flow into the MWWTP is approximately 60 mgd, representing 36 percent of the plant's secondary treatment capacity. Treated effluent is disinfected, dechlorinated, and discharged through a deepwater outfall one mile off the East Bay shoreline into San Francisco Bay.

In compliance with the July 28, 2014 Consent Decree, the City has implemented a long-term mandated Sanitary Sewer Capital Improvement Program to eliminate Sanitary Sewer Overflows and reduce storm water infiltration and inflow into the sanitary sewer system. Under this program, the City is repairing, replacing, and upgrading its portion of the sanitary sewer system, ultimately to aid EBMUD in eliminating discharges from their Wet Weather Facilities by the end of 2035.

## Wastewater Regulatory Setting

### *State*

The "Statewide General Waste Discharge Requirements for Sanitary Sewer Systems" adopted by the State Water Resources Control Board (SWRCB) in 2006, requires that every public agency in California with more than one mile of sanitary sewers prepare a Sewer System Management Plan (SSMP) that defines the management, operation and maintenance practices needed to prevent and mitigate the impact of sanitary sewer overflows (SSOs). The City of Berkeley prepared an SSMP in 2009 and updated the document in 2014 (City of Berkeley 2015).

Standards for wastewater treatment plant effluent are established using state and federal water quality regulations. After treatment, wastewater effluent is either disposed of or reused as recycled water. The RWQCBs set the specific requirements for community and individual wastewater treatment and disposal and reuse facilities through the issuance of Waste Discharge Requirements (WDR), required for wastewater treatment facilities under the California Water Code Section 13260.

Salt concentrations (such as chloride, nitrogen, sodium, etc.) in wastewater effluent are regulated based on the Water Quality Control Plan (Basin Plan) for the San Francisco Bay

Basin, which also considers surface water quality (discussed in Section 4.7, *Hydrology and Water Quality*). The RWQCB develops waste discharge requirements based on the Basin Plan, designed to protect beneficial uses of the State waters. The RWQCB Basin Plan contains an anti-degradation policy so that existing quality shall be maintained.

#### *Regional and Local*

The SSMP presents the City's approach to ensuring that its sanitary sewer system has adequate hydraulic capacity through a System Evaluation and Capacity Assurance Plan (SECAP). The City administers several programs and has established various standards to implement the SSMP and support efficient operation of the sewer system.

The City amended its Private Sewer Lateral (PSL) Ordinance (BMC Chapter 17.24), effective November 3, 2014, to comply with requirements mandated by the U.S. Environmental Protection Agency (EPA) and State and Regional Water Boards. The updated Ordinance provides more stringent regulations for the inspection, testing, repair, replacement, and ongoing maintenance of private sewer laterals that connect to sewer mains. This ordinance applies when a property is sold or transferred to a different owner, buildings are constructed or remodeled in excess of \$60,000, when the City finds that the PSL may be a public nuisance, or when a property owner elects to repair or replace their PSL. Property owners are required to eliminate wet-weather infiltration and inflow to private sewer laterals.

#### **BERKELEY GENERAL PLAN**

The Environmental Management Element of the City's General Plan contains the following policies and actions related to wastewater (City of Berkeley 2001c):

**Policy EM-24 Sewers and Storm Sewers.** Protect and improve water quality by improving the citywide sewer system.

**Action A.** Adequately fund sewer system improvements necessary to maintain water quality in natural areas and reduce public health hazards.

**Action B.** Identify and eliminate illegal roof-leader and other illegal connections to the sewer system.

**Action C.** Establish a program for the identification and remediation of faulty laterals on private property. Consider requiring inspection and repair as a condition of property transfer.

**Action D.** Identify alternative funding sources for essential infrastructure improvements such as grants, public-private partnerships, and special benefit districts.

**Action E.** Ensure that new development pays its fair share of improvements to the storm sewerage system necessary to accommodate increased flows from the development.

**Action F.** Coordinate storm sewer improvements with creek restoration projects.

#### **c. Solid Waste**

The City of Berkeley is one of the few cities in Northern California to operate its own dual stream recycling and green/food waste collection system as well as material recovery/drop-off and buyback facilities. The City provides curbside recycling and refuse collection

services to the Plan Area. Solid waste and recyclable materials collected by the City and its contracted companies are transported from the Berkeley Transfer Station, located at 1201 Second Street, for sorting or disposal. The Berkeley Transfer Station currently has a permitted capacity of 174,720 tons per year (Apa 2018). Two permitted landfills in Alameda County have the capacity to accommodate solid waste generated in Berkeley: the Altamont Landfill and the Vasco Road Sanitary Landfill (Obermeit 2018). As shown in Table 4.13-1, the combined remaining capacity for solid waste at these two landfills is approximately 72.8 million cubic yards. Currently, the City sends all solid waste for disposal to the Altamont Landfill, which is located near the Altamont Pass, northeast of the City of Livermore (Obermeit 2018). In 2015, the City of Berkeley diverted approximately 76 percent of its solid waste from landfills through recycling and/or composting efforts (Obermeit 2018).

**Table 4.13-1 Landfill Capacity Serving City of Berkeley**

Site	Maximum Permitted Throughput per Day		Maximum Permitted Capacity		Remaining Capacity	
	CY <sup>1</sup>	Tons	CY	Tons	CY	Tons
Alameda Landfill Resource Recovery Facility (estimated closure date January 1, 2025)	13,938	11,150	124,400,000	99,520,000	65,400,000	52,320,000
Vasco Road Sanitary Landfill (estimated closure date December 31, 2022)	3,148	2,518	32,970,000	26,376,000	7,379,000	5,903,200
<b>Total</b>	<b>17,086</b>	<b>13,668</b>	<b>157,370,000</b>	<b>125,896,000</b>	<b>72,779,000</b>	<b>58,223,200</b>

<sup>1</sup> CalRecycle identifies Maximum Permitted Throughput only in Tons/Day, while Maximum Permitted Capacity and Remaining Capacity are only provided in Cubic Yards; therefore, standard conversion factors provided by the EPA (EPA 2016) are used to provide all figures in both Tons and Cubic Yards. EPA identifies a standard conversion factor for Municipal Solid Waste (MSW) compacted to “Landfill Density” of 1,700 pounds per cubic yard, equating to approximately 0.8 ton per cubic yard of compacted MSW. Source: U.S. EPA 2016. Sources: CalRecycle, Solid Waste Information System (SWIS), 2018a; Obermeit 2018

## Solid Waste Regulatory Setting

### State

#### CALIFORNIA INTEGRATED WASTE MANAGEMENT ACT

In 1989, the California State Legislature enacted Assembly Bill (AB) 939, known as the Integrated Waste Management Act. The Act required all cities and counties in California to develop Source Reduction and Recycling Elements that would enable them to divert 50 percent of all solid waste from landfills by the year 2000.

The Legislature later passed Senate Bill (SB) 1016, which amended AB 939 so that the 50 percent diversion requirement is calculated based on a per capita disposal rate that is determined by a jurisdiction’s population. Jurisdictions in compliance with the diversion requirement are reviewed by the State every four years, while those not in compliance face review every two years.

In 2011, the Legislature passed AB 341, which sets a target of diverting 75 percent of the waste produced statewide from landfills by 2020 (CalRecycle 2018b).

#### **MANDATORY COMMERCIAL ORGANICS RECYCLING**

In 2014, AB 1826 required businesses to recycle their organic waste on and after April 1, 2016, depending on the amount of waste they generate per week. This law also requires that on and after January 1, 2016, local jurisdictions across California implement an organic waste recycling program to divert organic waste generated by business, including multi-family residential dwellings that consist of five or more units. Organic waste means food waste, green waste, landscape and pruning waste, nonhazardous wood waste, and food-soiled paper waste that is mixed in with food waste.

#### **GLOBAL WARMING SOLUTIONS ACT OF 2006**

In 2006, the Global Warming Solutions Act or AB 32, adopted by the Air Resources Board, included a Mandatory Commercial Recycling Measure. The Mandatory Commercial Recycling Measure focuses on diverting commercial waste as a means to reduce greenhouse gas (GHG) emissions, with a goal of reducing GHG emissions by five metric tons of carbon dioxide equivalents (MT of CO<sub>2</sub>e), consistent with the 2020 targets set by AB 32. CalRecycle adopted this Measure on January 17, 2012.

In 2012, SB 1018 required both businesses that generate 4 cubic yards or more of commercial solid waste per week and multi-family residences with five or more units to arrange for recycling services.

#### **CALGREEN BUILDING CODE**

In 2008, the California Building Standards Commission adopted the nation's first green building standards. The California Green Building Standards Code (Part 11, Title 24, known as "CALGreen") was adopted as part of the California Building Standards Code. Section 4.408, Construction Waste Reduction Disposal and Recycling, mandates that in the absence of a more stringent local ordinance, a minimum of 50 percent of non-hazardous construction and demolition debris must be recycled or salvaged. The Code requires the applicant to have a construction and waste demolition and diversion plan, for on-site sorting or construction debris, which is submitted to the City of Berkeley for approval.

#### *Regional and Local*

#### **COUNTYWIDE INTEGRATED WASTE MANAGEMENT PLAN**

In compliance with AB 939, the Alameda County Waste Management Authority adopted the Countywide Integrated Waste Management Plan (CoIWMP) in 1997. The CoIWMP provides a plan for reaching the State-mandated goal of 50 percent waste diversion and the county-mandated goal of 75 percent waste diversion. It also mandates that reduction and disposal facilities in Alameda County that require Solid Waste Facility Permits must conform with the CoIWMP's policies and siting criteria (Stop Waste 2018).

#### **BERKELEY GENERAL PLAN**

The Environmental Management Element of the City's General Plan contains the following policies and actions related to solid waste (City of Berkeley 2001c):

**Policy EM-7 Reduced Wastes.** Continue to reduce solid and hazardous wastes.

**Action A.** Achieve a 64% diversion of waste from landfills.

**Action B.** Manage wastes locally to the greatest extent feasible to minimize the export of wastes and pollution to other communities.

**Action E.** Encourage reuse, recycling, and composting.

**Action F.** Facilitate battery and used oil recycling.

**Action G.** Support programs and incentives to reduce the manufacture and use of materials which are non-recyclable or hazardous to people and the environment.

**Action H.** Develop education and promotion programs to increase recycling by occupants of multi-family buildings.

**Action I.** Through legislation and other means, reduce the use of plastic by eliminating multiple layers in packaging and encourage reusable shipping containers such as collapsible pallets and refillable bottles for bulk liquids.

**Action J.** Encourage reusable bags and packaging such as reusable bottles, whether glass or plastic.

**Action K.** Link collection of plastic to mandated recycled content in plastic packaging.

**Action L.** Advocate at the state level for higher disposal fees for products that are designed for single use and for products that do not incorporate any post-consumer recycled content.

**Policy EM-8 Building Reuse and Construction Waste.** Encourage rehabilitation and reuse of buildings whenever appropriate and feasible in order to reduce waste, conserve resources and energy, and reduce construction costs.

**Action A.** Encourage the reuse of demolition materials and recycling of construction scraps.

**Action B.** Expand the existing yard-waste recycling program to include restaurant and institutional food waste.

**Policy EM-9 Recycling and Waste Transfer Stations.** Ensure convenient access for Berkeley citizens to transfer stations, recycling, composting, and collection of household hazardous waste products.

**Action A.** Seek to identify a site for and develop a Berkeley hazardous waste drop-off facility, or develop a citywide pickup program.

#### CITY OF BERKELEY GREEN BUILDING CHECKLIST

A Green Building Checklist to ensure compliance with the 2013 California Green Building Standard Code, also known as CALGreen, is listed on the City's website for both residential and commercial projects. As of January 1, 2014, new construction, additions, and alterations are subject to CALGreen requirements. The checklist must be submitted with and incorporated into the plan sets, and any items that are marked on the checklists must then be referenced and detailed in the plans.

## 4.13.2 Impact Analysis

### a. Methodology and Significance Thresholds

Assessment of impacts is based on review of site information and conditions, analysis provided in EBMUD's current UWMP, the WSA prepared by EBMUD for the Specific Plan, and City information regarding utility-related issues, including water supply and facilities, wastewater facilities, and solid waste. According to Appendix G of the *State CEQA Guidelines*, a significant impact would occur if implementation of the proposed Specific Plan would result in one or more of the following circumstances:

1. Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board;
2. Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects;
3. Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects;
4. Have insufficient water supplies available to serve the project from existing entitlements and resources, or if new or expanded entitlements are needed;
5. Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments;
6. Be served by a landfill with insufficient permitted capacity to accommodate the project's solid waste disposal needs; or
7. Not comply with federal, state, and local statutes and regulations related to solid waste.

Impacts regarding stormwater drainage facilities (Threshold question 3) are discussed in Impact HYD-1 in Section 4.7, *Hydrology and Water Quality*.

<b>Threshold 1:</b>	Would the Specific Plan exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?
<b>Threshold 2:</b>	Would the Specific Plan require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?
<b>Threshold 5:</b>	Would the Specific Plan 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?

**Impact UTL-1** NEW DEVELOPMENT UNDER THE PROPOSED SPECIFIC PLAN WOULD GENERATE NEW SOURCES OF WASTEWATER, WHICH WOULD FLOW THROUGH THE EXISTING PIPE NETWORK AND TO EBMUD'S MAIN WASTEWATER TREATMENT PLANT (MWWTP). THE WASTEWATER TREATMENT PLANT HAS ADEQUATE CAPACITY TO SERVE DEVELOPMENT ASSOCIATED WITH THE SPECIFIC PLAN. LOCAL CONVEYANCE INFRASTRUCTURE WOULD BE UPGRADED AS NECESSARY DURING IMPLEMENTATION OF THE PROPOSED SPECIFIC PLAN, IN ALREADY DEVELOPED UTILITY CORRIDORS. IMPACTS RELATED TO WASTEWATER INFRASTRUCTURE WOULD BE LESS THAN SIGNIFICANT.

The proposed Specific Plan would facilitate new development that would generate increased sanitary sewage flows through the wastewater conveyance system to EBMUD's Main Wastewater Treatment Plant (MWWTP).

### Wastewater Treatment

EBMUD's MWWTP provides wastewater collection and treatment for the Plan Area, currently treating an average daily flow of approximately 63 mgd. With a secondary treatment capacity of 168 mgd, the MWWTP has a remaining capacity of 105 mgd beyond existing inflow. Table 4.13-2 estimates the additional wastewater flow from new residential and commercial development under the Specific Plan.

**Table 4.13-2 Estimated Wastewater Generation**

Use	Adeline Corridor Specific Plan Buildout	Average Wastewater Demand <sup>1</sup>	Expected Wastewater Generation	
			Gallons/Day	Million Gallons/Day
Apartment: Low-Rise	1,450 dwelling unit	131.2 gpd/unit	190,240	0.190
Retail Commercial	65,000 square feet	0.173 gpd/square foot	11,245	0.011
<b>Total</b>			<b>201,485</b>	<b>0.201</b>

<sup>1</sup> Assumes wastewater is 80 percent of water use shown in Table 4.13-3

Note: numbers may not add up due to rounding.

gpd = gallons per day

As shown in Table 4.13-2, it is estimated buildout of the Specific Plan would generate up to an additional 0.20 mgd, which accounts for 0.2 percent of the MWWTP's remaining secondary treatment capacity. The plant's existing wastewater treatment capacity would be sufficient to accommodate the anticipated residential and commercial development under the proposed Specific Plan. Therefore, buildout of the proposed Specific Plan would not result in the need to expand the capacity of the MWWTP or exceed the wastewater treatment requirements of the San Francisco RWQCB.

## Wastewater Conveyance

New development in the Plan Area would generate wastewater to be conveyed by privately owned upper laterals, City-owned lower laterals and sewer mains, and EBMUD's interceptor lines. As shown in Table 4.13-2, it is estimated the buildout of the Specific Plan would generate 0.20 mgd of additional flow in this wastewater conveyance system. During wet-weather conditions, additional flow could potentially contribute to overflow conditions on sewer mains under and adjacent to Adeline Street, in which sewage rises into manholes and emerges at ground level. New development would be required to comply with EBMUD's Regional Private Sewer Lateral Ordinance, by eliminating wet-weather infiltration and inflow to private sewer laterals, which would reduce wastewater flow in the sanitary sewer system. However, the construction of new or expanded sewer mains may be necessary to accommodate additional wastewater flow in the Plan Area. The precise sizing of new wastewater conveyance pipes would be determined at the time of installation and would be subject to the approval of the City to ensure that the system would be adequate. Construction of wastewater conveyance pipes would occur within developed areas, such as street corridors, that already contain underground infrastructure for utilities. The impacts of individual new sewer main construction projects are analyzed as proposed and would be less than significant due to the already developed nature of wastewater conveyance corridors. General impacts associated with construction of buildout and improvements associated with the Specific Plan are discussed throughout this EIR.

Additionally, future development associated with the Specific Plan would be required to adhere to Berkeley General Plan requirements related to wastewater infrastructure. Policy EM-24 in the Berkeley General Plan requires that new development pay its fair share of improvements to storm sewer system that would be necessary to accommodate increased flows. This policy would ensure that new developments are not approved until it can be demonstrated that adequate wastewater collection capacity exists, or until a financial commitment to create such capacity has been secured. Therefore, with implementation of General Plan policy, new development associated with the Specific Plan would have adequate wastewater conveyance systems to serve future planned development in the Plan Area. Accordingly, impacts related to wastewater conveyance would be less than significant.

## Mitigation Measures

No mitigation measures are required.

<b>Threshold 2:</b>	Would the Specific Plan require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?
<b>Threshold 4:</b>	Would the Specific Plan have insufficient water supplies available to serve the project from existing entitlements and resources, or if new or expanded entitlements are needed?

**Impact UTL-2** DEVELOPMENT UNDER THE PROPOSED SPECIFIC PLAN WOULD INCREASE WATER DEMAND. EXISTING AND PROJECTED WATER SUPPLY WOULD BE ADEQUATE TO SERVE THE PLAN AREA DEMANDS THROUGH 2040 (THE HORIZON YEAR OF THE PROPOSED SPECIFIC PLAN), WITH DEMAND MANAGEMENT MEASURES REQUIRED BY EBMUD. IMPACTS RELATED TO WATER SUPPLIES WOULD BE LESS THAN SIGNIFICANT.

According to the WSA prepared by EBMUD for the proposed Specific Plan, historical water demand in the Plan Area is approximately 58,700 gpd, and it is projected that buildout of the

Specific Plan would increase this level of water demand by 252,387 gpd (Appendix F). Table 4.13-3 shows estimated water demand by land use under implementation of the Specific Plan.

**Table 4.13-3 Estimated Specific Plan Water Demand**

Use	Specific Plan Buildout		Average Water Demand <sup>1</sup>	Average Daily Water Demand (gpd)
	Quantity	Unit		
Apartment: Low-Rise <sup>2</sup>	1,450	dwelling unit	164 gpd/unit	238,347
Retail commercial <sup>2</sup>	65,000	square feet	0.216 gpd/sf	14,040
<b>Total</b>				<b>252,387</b>

<sup>1</sup> Flowrate factors are based on reference material provided by EBMUD: 65 gpd/person for low-rise apartments; 0.216 gpd/sf for commercial retail space. Also assumes conservative estimate of 2.53 persons per household (ABAG 2018).

<sup>2</sup> Low-rise apartments are defined by CAL FIRE as up to 75 feet in height. It is anticipated that future development in the Plan Area would be under 75 feet in height. However, should individual projects exceed 75 feet in height, this analysis would remain conservative because the estimated water demand for low-rise apartments provided by EBMUD (65 gpd/person) is higher than the estimated water demand for high-rise apartments (50 gpd/person)

<sup>2</sup> Total net (or new) commercial buildout of 65,000 sf assumes ground floor commercial space that is a mix of retail or small-scale office space. Because it is not possible to predict the exact mix of retail versus office space, retail space water demand was assumed in order to be conservative with respect to water demand. gpd = gallons per day

After implementation of the Specific Plan, water demand in the Plan Area would increase to an estimated 311,100 gpd.

The projections of water demand in EBMUD’s WSA account for changing development patterns and land uses in the Plan Area. Table 4.13-4 provides a summary of the WSA’s overall water demand and supply projections, in five-year increments, for a 25-year planning horizon with consideration to varying climatic (drought) scenarios.

As shown in Table 4.13-4, EBMUD anticipates having an adequate water supply to meet demand in its service area, except during the third year of a multi-year drought starting around 2025 or later. During multi-year drought, EBMUD may require substantial reductions in water use by customers and, as discussed below, may also need to acquire supplemental supplies to meet demand (Appendix F).

EBMUD’s system storage generally allows EBMUD to continue serving its customers during dry-year events (Appendix F). EBMUD typically imposes water use restrictions based on the projected storage available at the end of September and, based on recent changes to its Demand Management Plan (DMP) Guidelines, may also implement water restrictions in response to a State of California mandate. By imposing water restrictions in the first dry year of potential drought periods, EBMUD attempts to minimize water use restrictions in subsequent years if a drought persists. Throughout dry periods, EBMUD must continue to meet its current and subsequent-year fishery flow release requirements and obligations to downstream agencies.

The UMWP 2015 includes DMP Guidelines that establish the level of water use restrictions EBMUD may implement under varying conditions (Appendix F). Under DMP Guidelines, water use restrictions may be determined based upon either projected end-of-September Total System Storage (TSS) or water use restriction mandates from the SWRCB. When State-mandated water use restrictions exceed the reductions that would otherwise be called for based upon end-of-September TSS, EBMUD’s water use reduction requirements may be guided by the applicable State mandates. Under either scenario, while EBMUD strives to keep water use reductions at or below 15 percent, if the drought is severe, mandatory water

use reductions could exceed 15 percent. New development in the Plan Area would be subject to the same drought restrictions that apply to all EBMUD customers.

**Table 4.13-4 Preliminary EBMUD Baseline Supply and Demand Analysis**

	2015	2020	2025	2030	2035	2040
<b>Normal Year</b>						
Mokelumne System	>190	>217	>218	>222	>229	>230
Demand Totals	190	217	218	222	229	230
Difference	0	0	0	0	0	0
<b>Single Dry Year or First Year of Multi-Year Drought</b>						
Mokelumne System	145	169	170	173	179	179
CVP Supplies <sup>2</sup>	36	35	35	35	35	35
Bayside <sup>3</sup>	0	0	0	0	0	0
Supply Totals	181	204	205	209	214	215
Planning Level Demand <sup>1</sup>	190	217	218	222	229	230
Rationing <sup>4</sup>	5%	6%	6%	6%	7%	7%
Demand Totals	180	203	204	208	213	214
Need for Water (TAF) <sup>5</sup>	0	0	0	0	0	0
<b>Second Year of Multi-Year Drought</b>						
Mokelumne System	81	103	103	107	112	113
CVP Supplies <sup>2</sup>	71	71	71	71	71	71
Bayside <sup>3</sup>	0	0	0	0	0	0
Supply Totals	152	174	174	178	183	184
Planning Level Demand <sup>1</sup>	190	217	218	222	229	230
Rationing <sup>4</sup>	20%	20%	20%	20%	20%	20%
Demand Totals	152	174	175	178	184	185
Need for Water (TAF) <sup>5</sup>	0	0	0	0	0	0
<b>Third Year of Multi-Year Drought</b>						
Mokelumne System	111	132	132	125	120	104
CVP Supplies <sup>2</sup>	40	40	40	40	40	40
Bayside <sup>3</sup>	1	1	1	1	1	1
Supply Totals	152	174	173	166	162	145
Planning Level Demand <sup>1</sup>	190	217	218	222	229	230
Rationing <sup>4</sup>	20%	20%	20%	20%	20%	20%
Demand Totals	152	174	174	178	183	184
Need for Water (TAF) <sup>5</sup>	0	0	2	13	24	48

<sup>1</sup> Planning Level Demand accounts for projected savings from water recycling and conservation programs as discussed in the 2015 UWMP, Chapters 6 and 7, respectively. Customer demand values are based on the Mid Cycle Demand Assessment, October 2014.

<sup>2</sup> Projected available CVP supplies are taken according to the Drought Management Program Guidelines discussed in Chapter 3.

<sup>3</sup> For the purposes of this modeling effort, it is assumed that the Bayside Groundwater Project would be brought online in the third year of a drought.

<sup>4</sup> Rationing reduction goals are determined according to projected system storage levels in the Drought Management Program Guidelines discussed in the 2015 UWMP, Chapter 3.

<sup>5</sup> Need for Water includes unmet customer demand as well as shortages on the Lower Mokelumne River.

Source: Appendix F.

EBMUD also is developing the Bayside Groundwater Project to provide a source of supplemental supply in dry years. Other potential supplemental water projects include northern California water transfers and the expansion of Contra Costa Water District's Los Vaqueros Reservoir to meet the projected long-term water supplemental need during multi-year drought periods. The Los Vaqueros Reservoir, located in Contra Costa County to the northwest of Altamont Pass, is surrounded by natural open space in the Los Vaqueros watershed (Contra Costa Water District 2018). Currently, the U.S. Bureau of Reclamation and the Contra Costa Water District are studying the feasibility of expanding the reservoir's storage capacity from 160,000 acre-feet to 275,000 acre-feet (U.S. Bureau of Reclamation et. al 2017). Expansion of the reservoir into the surrounding open space area could result in adverse effects on water quality, biological resources, geology and soils, and agricultural resources, as analyzed in the Draft Supplement to the Final Environmental Impact Statement/Environmental Impact Report (EIS/EIR) for the Los Vaqueros Reservoir Expansion (LVE) Project Phase 2. After implementation of mitigation measures, the residual impacts would not exceed those anticipated in the Final EIS/EIR for a prior expansion of the reservoir. Mitigation would include, among other actions, stormwater control measures; treatment of dewatered groundwater; avoiding, minimizing, and compensating for the loss of sensitive habitat; avoiding and minimizing the loss of wetlands; surveying, avoiding, and compensating for adverse effects on special-status species; and compensating for the loss of important farmland. Future reservoir expansion to increase water supply reliability for providers in the San Francisco Bay Area, including the Plan Area, would not result in additional environmental impacts than analyzed in this EIS/EIR. In addition to supplemental water projects, EBMUD maximizes resources through continuous improvements in the delivery and transmission of available water supplies and investments in ensuring the safety of its existing water supply facilities to ensure a reliable water supply to meet projected demands for current and future EBMUD customers within the service area.

Despite the WSA's findings that deficits are projected for multi-year droughts, compliance with the water conservation regulations and policies would help to maintain sufficient supplies in the Plan Area. New development would be subject to the California Code of Regulations concerning water-efficient landscapes (Division 2, Title 23, CCR, Chapter 2.7, Sections 490 through 495) and to the Water Conservation Act of 2009. The Water Conservation Act of 2009 sets an overall goal of reducing per capita urban water use by 20% by December 31, 2020. Although the Plan Area is not currently a candidate for recycled water, future recycled water pipeline expansion toward Berkeley could potentially serve a portion of the Plan Area. Policy EM-26 in the Berkeley General Plan also would encourage the use of drought-tolerant landscaping and low-flow irrigation systems. In addition, the proposed Specific Plan Public Space Strategy 7.6 (Landscape-Based Stormwater Management and Bay-Friendly Landscaping) includes the reduced use of water in landscaping.

Implementation of Bay-friendly landscaping in the proposed Specific Plan would encourage water conservation for new development and in proposed open space areas. Further, new development would be subject to other green building and water conservation requirements described in the Water Supply Regulatory Setting. The WSA for the proposed Specific Plan prepared by EBMUD shows that there is sufficient water supply to serve Specific Plan and overall service area demand, with demand management during multi-year drought conditions. In that event, people in the Plan Area and other EBMUD customers, would be subject to a Demand Management Plan and other water conservation requirements that will address any shortage in supply. Based on the substantial evidence discussed above, there are sufficient water supplies available to serve the proposed Specific Plan; impacts related to water supply would be less than significant.

## Mitigation Measures

No mitigation measures are required.

<b>Threshold 6:</b>	Would the Specific Plan be served by a landfill with insufficient permitted capacity to accommodate the project's solid waste disposal needs?
<b>Threshold 7:</b>	Would the Specific Plan comply with federal, state, and local statutes and regulations related to solid waste?

**Impact UTL-3** IMPLEMENTATION OF THE PROPOSED SPECIFIC PLAN WOULD GENERATE AN INCREASE OF APPROXIMATELY 1.1 TONS OF SOLID WASTE PER DAY, OR 2.2 CUBIC YARDS PER DAY. BECAUSE LANDFILLS THAT SERVE THE CITY OF BERKELEY HAVE ADEQUATE CAPACITY TO SERVE DEVELOPMENT UNDER THE PROPOSED SPECIFIC PLAN, IMPACTS RELATED TO SOLID WASTE FACILITIES WOULD BE LESS THAN SIGNIFICANT.

Implementation of the proposed Specific Plan would increase solid waste generation in Berkeley by adding an estimated 1,450 residential units and 65,000 net square feet of commercial uses in the Plan Area. CalRecycle estimates that multi-family residential uses generate an average of four pounds of solid waste per unit per day, while commercial retail generates up to 0.046 pounds per square foot per day (Cal Recycle 2018c).

As shown in Table 4.13-5, prior to implementation of recycling programs or State-mandated diversion requirements, Specific Plan buildout would generate an estimated 8,790 net pounds per day of solid waste, or 4.4 tons per day. In accordance with California's Integrated Waste Management Act of 1989, cities and counties are required to divert 50 percent of all solid wastes from landfills. As of 2015, the City of Berkeley had achieved a diversion rate of 76 percent, which substantially exceeds this State requirement. Assuming that this diversion rate continues to apply to new development in the Plan Area, implementation of the Specific Plan would generate an additional 1.1 tons per day of solid waste for disposal at landfills.

**Table 4.13-5 Proposed Specific Plan Solid Waste Generation**

Use	Specific Plan Buildout		Generation Rate	Solid Waste (pounds per day)	Solid Waste (tons per day)	Solid Waste (cubic yards per day) <sup>2</sup>
	Quantity	Units				
Multi-family Apartment	1,450	dwelling units	4.0 pounds/unit/day	5,800	2.9	5.8
Retail commercial <sup>1</sup>	65,000	square feet	0.046 pounds/square foot/day	2,990	1.5	3.0
<b>Total Before Diversion</b>				<b>8,790</b>	<b>4.4</b>	<b>8.8</b>
<b>Total Assuming 76% Diversion Rate</b>				<b>2,110</b>	<b>1.1</b>	<b>2.2</b>

<sup>1</sup> This analysis makes the conservative assumption that all commercial development consists of retail commercial space, which generates more solid waste per square foot than typical generation rates for commercial offices.

<sup>2</sup> Based on the conversion factor described under Table 4.13-1, County-Service Landfill Capacity for "landfill density" Municipal Solid Waste, of approximately 750 to 1,250 pounds per cubic yard, or an average of 1,000 pounds per cubic yard.

( ) denotes subtraction

Source: CalRecycle 2018c

As discussed in the Solid Waste Setting, the Altamont Landfill and the Vasco Road Sanitary Landfill are active landfills that can accommodate solid waste from Berkeley. These landfills have a combined remaining capacity of approximately 72.8 million cubic yards. With complete buildout of the Specific Plan, it is estimated that the Plan Area would generate an

additional 2.2 cubic yards per day of solid waste for disposal at landfills. This amount would equate to approximately 803 cubic yards per year, or 17,666 cubic yards over the 22-year implementation period to the Specific Plan's horizon year of 2040. The total need for waste disposal would represent approximately 0.02 percent of the current total remaining landfill capacity for the two landfills.

Continued compliance with applicable regulations and Berkeley General Plan policies listed in the Solid Waste Regulatory Setting would ensure that the Specific Plan complies with federal, state, and local statutes and regulations related to solid waste and would lead to increased recycling and waste diversion. For instance, project applicants in the Plan Area would be required to prepare a Construction Demolition Recycling Plan prior to issuance of a demolition permit for any proposed projects. The purpose of the Construction Demolition Recycling Plan is to divert as much debris as possible from the waste stream. Therefore, anticipated rates of solid waste disposal from the proposed Specific Plan would have a less than significant impact related to solid waste disposal facilities.

### **Mitigation Measures**

No mitigation measures are required.

### **b. Cumulative Impacts**

#### **Wastewater**

Cumulative development in Berkeley will continue to increase demands on the existing wastewater treatment and conveyance facilities. The MWTTP's current capacity is sufficient to serve increased flow anticipated from the Plan Area. New wastewater conveyance infrastructure may be necessary to serve cumulative development, including in the Plan Area. However, individual improvements to the sewer system would occur in existing utility corridors in already developed areas. Therefore, the cumulative impact related to wastewater infrastructure would be less than significant, and the Specific Plan would not considerably contribute to a cumulative impact.

#### **Water**

The analysis provided under Impact UTL-2 is cumulative in nature and considers water demand associated with the development included under the proposed Specific Plan, as well as water demands associated with other developments (existing and projected) within EBMUD's service area. EBMUD confirmed in the WSA prepared for the proposed Specific Plan that water demand for the Plan Area is accounted for in EBMUD's projections for the year 2040 (Appendix F). The UMWP 2015 also includes DMP Guidelines that establish the level of water use restrictions EBMUD may implement under varying conditions. As stated in the WSA, the proposed Specific Plan would be subject to the same drought restrictions that apply to all EBMUD customers. In addition, the proposed Specific Plan would be subject to EBMUD's regulations aimed at encouraging efficient water use, such as Sections 29 and 31 of EBMUD's Regulations Governing Water Service. Section 29, "Prohibiting Wasteful Use of Water," promotes efficient water use by EBMUD customers and includes additional restrictions on wasteful uses of potable water. Section 31, "Water Efficiency Requirements," identifies the types of water efficiency requirements (i.e., maximum flow rates for flow control devices) for water service. Therefore, the cumulative impact related to water supply would be less than significant, and the Specific Plan would not considerably contribute to a cumulative impact.

## Solid Waste

Cumulative development in Alameda County will continue to increase solid waste generation for disposal at landfills that serve the County. State-mandated solid waste diversion rates (for recycling) would continue to minimize the quantity of waste directed to area landfills, and compliance applicable regulations and with General Plan goals, policies, and actions would maintain or improve upon existing solid waste diversion rates. It is assumed the City of Berkeley will continue to divert at least 76 percent of solid waste from landfills due to its recycling and green waste programs. However, as shown in Table 4.13-1, the active landfills that can accommodate solid waste from Berkeley are expected to close by 2025. To provide for solid waste disposal through the horizon year of the Specific Plan (2040), the City may, in the future, need to contract for additional capacity at other existing or new landfills. Therefore, cumulative development could increase the need for construction of additional landfill capacity, resulting in a significant cumulative impact related to solid waste infrastructure. However, as discussed in Impact UTL-3, buildout of the Specific Plan would generate a limited amount of solid waste, representing approximately 0.02 percent of the remaining capacity of existing landfills serving Alameda County. This incremental increase in solid waste would not considerably contribute to an impact related to solid waste disposal.

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## 4.14 Effects Found not to be Significant

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CEQA Guidelines Section 15128 requires an EIR to briefly describe any possible significant 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 Specific Plan that were found not to be significant. The items 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. Any items not addressed in this section were addressed in Section 4, *Environmental Impact Analysis*, of this EIR.

### 4.14.1 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 Specific Plan provides a vision and planning framework for future growth and development in the Plan Area that includes infill residential, mixed-use, and employment center projects. The entire Plan Area is within a transit priority area and as such meets the criteria of SB 743. The Ashby BART Station, a regional transit facility, is located in the central/southern portion of the Plan Area. The area between the southern boundary of the Plan Area (at approximately Stanford Avenue) and Ward Street are within 0.5 mile of this major transit stop. The northern Plan Area boundary north of Parker Street is also within 0.5 mile of the Downtown Berkeley BART station which is a major transit stop. For the areas along Shattuck Avenue between Ward Street and Parker Street, which are not within 0.5 miles of a BART station, there is frequent AC Transit bus service via multiple fixed routes. The section of the Plan Area along Shattuck Avenue from Dwight Way to Ward Street is within 0.5 mile of a major transit stop at Shattuck and Durant Avenue. This stop is served by AC Transit’s routes 6 and 51B, which operate at service intervals of 10 minutes during morning and afternoon peak commute periods.

Because implementation of the proposed Specific Plan would result in residential, mixed-use, and employment center projects on infill sites 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 4.3, *Cultural Resources*, of this EIR. In addition, Section 4.8, *Land Use and Planning*, includes a discussion of the proposed Specific Plan’s consistency with City plans and goals, including applicable ones related to design and aesthetics.

## 4.14.2 Agricultural Resources

### a. Setting

The Plan Area is a highly urbanized area in Berkeley. The City's General Plan land use map and zoning maps do not identify any agriculture or forestry resources in Berkeley. The Farmland Mapping and Monitoring Program of the California Resources Agency does not identify lands in Berkeley as Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (California Department of Conservation [DOC] 2016). Furthermore, there are no areas of forestland or forest and rangeland identified in the city (City of Berkeley 2001a).

### 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?
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. There are no agricultural lands in the Plan Area or adjacent to the Plan Area. None of the properties in the Plan Area or adjacent to the Plan Area are under a Williamson Act contract. Also, no properties in or adjacent to the Plan Area are zoned for timberland or contain forest land or significant stands of trees (City of Berkeley 2001a). Therefore, there would be no impacts with respect to agricultural lands, Williamson Act contracts, timberland, or forest resources.

## 4.14.3 Mineral Resources

### a. Setting

The Plan Area is a highly urbanized area in Berkeley. There are no known mineral deposits or resources of local importance or value to the region or to residents of the State identified in the Plan Area (City of Berkeley 2001a). There are likewise no mining operations in the Plan Area.

### 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. 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?
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 Plan Area is not designated as a significant mineral resources zone and mineral resource extraction in this area would be generally incompatible with existing and planned uses (City of Berkeley 2001a). As such, no mineral resource impacts would occur.

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# 5 Energy Impacts and Other CEQA Required Discussions

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This section discusses other issues for which CEQA requires analysis in addition to the specific issue areas discussed in Section 4, *Environmental Impact Analysis*. These additional issues include the proposed Specific Plan’s potential to induce growth and create significant and irreversible impacts on the environment.

## 5.1 Growth Inducement

CEQA Guidelines Section 15126(d) requires a discussion of a proposed Specific Plan’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 Specific Plan’s growth inducing potential would therefore be considered significant if Specific Plan-induced growth could result in significant physical effects in one or more environmental issue areas.

### 5.1.1 Population Growth and Economic Growth

As discussed in Section 4.10, *Population and Housing*, implementation of the proposed Specific Plan could result in potential development of 1,450 housing units and 65,000 square feet of commercial space (net). This would result in the addition of approximately 3,466 residents and 195 jobs to the Plan Area by 2040. Table 5-1 compares the anticipated growth under the proposed Specific Plan to 2040 ABAG projections based on the assumptions shown in Section 4.10.

**Table 5-1 Growth Projections Through 2040**

	Population	Employment
Growth within the Specific Plan Area <sup>1</sup>	3,466	195
Growth in City of Berkeley <sup>2</sup>	22,315	39,463
City of Berkeley Total Projected <sup>3</sup>	140,900	121,700
Specific Plan Growth Relative to total City Population	2.5%	<1.0%

<sup>1</sup> Based on the average of 2.39 persons per household (see Table 4.10-1) in the Study Area, the addition of 1,450 residential units would generate an increase of approximately 3,466 residents. Based on estimates provided by Fehr & Peers, the 65,000 net new square feet of commercial space would generate 195 new jobs.

<sup>2</sup> See Table 4.10-2 in Section 4.10, *Population and Housing*

<sup>3</sup> See Table 4.10-2 in Section 4.10, *Population and Housing*

As shown in Table 5-1, the amount of population growth anticipated from the adoption and implementation of the Specific Plan would account for approximately 16 percent of the projected increase in population growth in Berkeley from 2016 to 2040 of 22,315 and represents approximately 2.5 percent of the total City population projected in 2040 of 140,900. The job growth anticipated from development that could occur from the adoption and implementation of the Specific Plan would be 0.5 percent of the projected increase in job growth in Berkeley from 2016 to 2040 of 39,463, or less than one percent of the total 2040 jobs projected in Berkeley of 121,700. Overall, growth would be within regional growth projections for the City.

Although the Specific Plan-attributed population growth would exceed Study Area<sup>1</sup> projections, the population increase would be within the City's anticipated growth range and would be added incrementally over the 20-year period of estimated buildout.

In addition, as discussed in Section 4.8, *Land Use and Planning*, the City's General Plan Land Use and Housing Elements and the City's zoning regulations encourage and prioritize higher density housing and employment in the City's commercial corridors and around BART stations. The Specific Plan Area was designated by the City of Berkeley as a Priority Development Area, an area targeted for transit-oriented development. Therefore, the proposed Specific Plan is in a location encouraged by adopted local and regional plans due to its proximity to transit and transportation corridors. It is the purpose of the proposed Specific Plan to guide growth and development near existing transit centers in an effort to reduce urban sprawl and VMT. Therefore, by its nature, the proposed Specific Plan is intended to reduce the potential for uncontrolled growth and the environmental impacts associated with uncontrolled growth in Berkeley and in the region.

Further, as explained in Section 2.4 of the *Project Description*, buildout assumptions for the proposed Specific Plan are conservative. Actual growth as a result of the Specific Plan may be less than projected buildout through the 2040 horizon year of this EIR.

### 5.1.2 Removal of Obstacles to Growth

The Plan Area is located in a fully urbanized area that is served by existing infrastructure. As discussed in Section 4.13, *Utilities and Service Systems*, and Section 4.7, *Hydrology and Water Quality*, existing infrastructure in Berkeley would be adequate to serve development under the proposed Specific Plan. No additional utility infrastructure or facilities beyond those necessary to accommodate individual projects would be required. Furthermore, the proposed Specific Plan is intended to encourage infill development that utilizes existing public transportation infrastructure. No new roads would be required. Because the proposed Specific Plan constitutes redevelopment within an urbanized area and does not require the extension of new infrastructure through undeveloped areas, Specific Plan 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

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<sup>1</sup> This analysis is based on data from a geographic area that is larger than the Plan Area itself and is referred to as the "Study Area." The Study Area used for the estimates in this section consists of 2010 Census Tracts 4234, 4235, 4239.01 and 4240.01. For additional information, see Section 4.10, *Population and Housing*.

of future generations to the proposed uses, and irreversible impacts associated with the proposed project.

The proposed Specific Plan would involve future infill development on currently developed lands in the City of Berkeley. Construction activities associated with planned development that would be accommodated under the Specific Plan 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 is not unique to Berkeley or the Plan Area. The addition of new residential and non-residential development in the Plan Area would irreversibly increase local demand for non-renewable energy resources such as petroleum and natural gas. Increasing efficient building fixtures and automobile engines, as well as implementation of policies included in the General Plan, are expected to offset the demand to some degree. Growth accommodated under the proposed Specific Plan would not significantly affect local or regional energy supplies (see Section 5.3).

Growth facilitated by the proposed Specific Plan would require an irreversible commitment of law enforcement, fire protection, water supply, and wastewater treatment. As discussed in Sections 4.11, *Public Services*, and 4.13, *Utilities and Service Systems*, impacts to public services and utilities would be reduced to a less than significant level with adherence to policies included in the proposed Specific Plan and General Plan and compliance with existing laws and regulations.

The additional vehicle trips associated with growth through 2040 would incrementally increase local traffic, noise levels, and regional air pollutant emissions. However, as discussed in Section 4.1, *Air Quality*, the proposed Specific Plan would be consistent with BAAQMD's 2017 Clean Air Plan. As discussed in Section 4.9, *Noise*, implementation of proposed policies and mitigation measures from the City's General Plan would reduce the noise impacts associated with future growth to a less than significant level. However, noise impacts during construction would be significant and unavoidable. As discussed in Section 4.12, *Transportation and Traffic*, the addition of traffic generated by the development projects facilitated by the Specific Plan and the roadway modifications proposed by the Specific Plan would result in the significant and unavoidable level of service impacts on roadway segments regulated under the County's Congestion Management Program.

### 5.3 Energy Effects

Public Resources Code Section 21100(b)(2) and Appendix F of the *CEQA Guidelines* require that EIRs include a discussion of the potential energy consumption and/or conservation impacts of proposed projects, with emphasis on avoiding or reducing inefficient, wasteful, or unnecessary consumption of energy.

California is one of the lowest per capita energy users in the United States, ranked 48<sup>th</sup> in the nation, due to its energy efficiency programs and mild climate (U.S. Energy Information Administration [EIA] 2018a). California generated 206,336 gigawatt-hours (GWh) of electricity in 2017 (California Energy Commission [CEC] 2018) and 2,110,829 million cubic feet (MCF) of natural gas in 2017, of which 431,005 MCF were consumed by residential users (EIA 2018b). Additionally, in 2015, the most recent year of data provided by the EIA, California's transportation sector consumed 1,714.4 trillion Btu of motor gasoline (EIA 2018c). The single largest end-use sector for energy consumption in California is transportation (40 percent), followed by industry (24 percent), commercial (19 percent), and residential (18 percent) (EIA 2018b).

Electricity and natural gas service in the City of Berkeley is provided by Pacific Gas & Electric (PG&E). PG&E provides natural gas and electric service to approximately 16 million people throughout a 70,000-square mile service area in northern and central California (PG&E 2018). In 2016, PG&E's power mix included 33 percent renewable energy sources (PG&E 2017b).

Development facilitated by the proposed Specific Plan would involve the use of energy during associated construction and operation phases. Energy use during construction would primarily be in the form of fuel consumption to operate heavy equipment, light-duty vehicles, machinery, and generators for lighting. Temporary grid power may also be provided to construction trailers or electric construction equipment. Long-term operation of development projects would require permanent grid connections for electricity and natural gas service to power internal and exterior building lighting, as well as heating and cooling systems. In addition, the increase in vehicle trips associated with potential development would increase fuel consumption.

Table 5-2 shows the estimated electricity and natural gas demand for buildout of the Specific Plan compared to statewide demand. Electricity and natural gas consumption were estimated using the California Emissions Estimator Model (CalEEMod) version 2016.3.2. As shown, development facilitated by the proposed Specific Plan would utilize approximately 6.8 Gigawatt hours (GWh) of electricity and approximately 12,958 million Btu of natural gas per year during operation. As shown in Table 5-2, energy consumption for buildout under the proposed Specific Plan would represent less than 0.01 percent of statewide annual demand for electricity and less than 0.01 percent of statewide annual demand for natural gas.

**Table 5-2 Plan Energy Use Relative to Statewide Energy Use**

Form of Energy	Units	Annual Plan Related Energy Use	Annual Statewide Energy Use	Project Percent of Statewide Energy Use
Electricity	Gigawatt hours	6.8 <sup>1</sup>	292,039 <sup>2</sup>	<0.01%
Natural Gas	Million British thermal units	12,958 <sup>1</sup>	1,273,910,000 <sup>3</sup>	<0.01%

<sup>1</sup> CalEEMod output (provided in Appendix G)

<sup>2</sup> California Energy Commission (CEC). 2017. *Total System Electric Generation*. Available at: [http://www.energy.ca.gov/almanac/electricity\\_data/total\\_system\\_power.html](http://www.energy.ca.gov/almanac/electricity_data/total_system_power.html).

<sup>3</sup> CEC. 2016. *California Energy Consumption Database*. <http://www.ecdms.energy.ca.gov/>

A large portion of the energy use associated with development facilitated by the proposed Specific Plan would result from fuel consumption from new vehicle trips. Table 5-3 shows the estimated annual operational fuel consumption due to vehicle travel from the proposed Specific Plan buildout. Fuel consumption was estimated using the default fleet vehicle mix and the total annual mitigated VMT from the CalEEMod trip generation estimates, and average fuel efficiencies for each vehicle category (refer to Table 4.4 included in Appendix G, which shows the default fleet vehicle mix used by CalEEMod). Based on these assumptions, the proposed Specific Plan would result in the consumption of approximately 1,053,349 gallons of vehicle fuel per year during full operation, which represents approximately 0.01 percent of annual statewide transportation fuel consumption.

**Table 5-3 Project Operational Vehicle Fuel Consumption**

Vehicle Type	Percent of Vehicle Trips <sup>1</sup>	Annual Vehicle Miles Traveled <sup>2</sup>	Average Fuel Efficiency (miles/gallon) <sup>3</sup>	Total Annual Fuel Consumption (gallons)
Passenger Cars	55.82%	10,471,050	23.9	438,119
Light/Medium Trucks	34.22%	6,418,847	17.3	371,032
Heavy Trucks/Other	9.41%	1,764,703	7.3	241,740
Motorcycles	0.56%	104,469	43.5	2,458
<b>Total</b>	<b>100.00%</b>	<b>18,759,070</b>	<b>-</b>	<b>1,053,349</b>
State Motor Vehicle Fuels				19,250,000,000 <sup>4</sup>
Plan Percent of Statewide Energy Use				<0.01%

<sup>1</sup> Percent of vehicle trips found in Table 4.4 “Fleet Mix” in CalEEMod outputs (see Appendix G)

<sup>2</sup> Mitigated annual VMT found in Table 4.2 “Trip Summary Information” in CalEEMod outputs (see Appendix G). Annual VMT per vehicle type = Mitigated annual VMT \* Percent of vehicle trips per vehicle type.

<sup>3</sup> Source: US DOT, Bureau of Transportation Statistics. 2013. National Transportation Statistics 2013, Tables 4-11, 4-134 and -23. Washington DC. Vehicle classes provided in CalEEMod do not correspond exactly to vehicle classes in USDOT 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.

<sup>4</sup> California Energy Commission 2018

Note: Total may not add up due to rounding.

In addition, construction activities would also result in short-term fuel consumption from worker trips, operation of diesel-powered equipment, and hauling trips.

### Appendix F Requirements and Energy Conservation Standards

Appendix F of the *CEQA Guidelines* requires inclusion in an EIR of relevant information that addresses “potential energy impacts of proposed projects, with particular emphasis on avoiding or reducing inefficient, wasteful and unnecessary consumption of energy” (Public Resource code Section 21100[b][3]). Although the *CEQA Guidelines* do not include formal thresholds for evaluating the significance of potential energy-related impacts, the following discussion addresses direct energy impacts of the project as framed in Appendix F of the *CEQA Guidelines* by evaluating whether the project would result in the wasteful or inefficient consumption of energy.

**Threshold:** Would the Specific Plan result in the wasteful and inefficient use of non-renewable resources during construction and operation of projects facilitated by the Plan?

Long-term operation of development projects facilitated by the proposed Specific Plan would result in the annual consumption of approximately 6,803 megawatt hours of electricity, 12,958 million Btu of natural gas, and 1,053,349 gallons of vehicle fuel each year. Increasingly efficient building fixtures and automobile engines, as well as implementation of City policies, are expected to offset the energy demand facilitated by buildout under the proposed Specific Plan to some degree. As described in Section 4.5, *Greenhouse Gas Emissions*, in a recent 2018 Climate Action Plan Update, the City outlined a commitment to

move towards 100 percent renewable electricity by 2035 and to become a fossil fuel free city.

The development facilitated by the proposed Specific Plan would be subject to energy conservation requirements in the California Energy Code (Title 24, Part 6, of the California Code of Regulations [CCR], California's Energy Efficiency Standards for Residential and Nonresidential Buildings) and the California Green Building Standards Code (CalGreen) (Title 24, Part 11, of the CCR). In addition, mitigation measures GHG-1 and GHG-2 in Section 4.5, *Greenhouse Gas Emissions*, require all-electric buildings and electric vehicle-readiness for future development in the Plan Area. With the renewable electricity requirements imposed by SB100, California's electric grid over time will rely on fewer non-renewable energy sources. Therefore, compliance with these mitigation measures would reduce the use of nonrenewable energy sources for development in the Plan Area.

Mitigation Measure GHG-3 requires new construction in the Plan Area to be consistent with the solar photovoltaic requirements of the upcoming 2019 Building Energy Efficiency Standards (Title 24 2019) and Mitigation Measure GHG-4 requires the use of cool roof technologies. Both of these measures would also reduce the use of non-renewable energy resources for future development in the Plan Area. Adherence to Title 24 requirements and required mitigation measures would ensure that buildout of the proposed Specific Plan would not result in wasteful and inefficient use of non-renewable resources due to building operation.

In addition, the Specific Plan is designed to encourage transit-oriented development and by its nature, guides growth and development near existing transit centers in an effort to reduce vehicle miles traveled and encourage the use of alternative transportation. Therefore, the proposed Specific Plan would decrease vehicle trips and associated fuel and energy use. Overall, the development facilitated by the proposed Specific Plan would be required to comply with applicable Title 24 building standards, City policies, and required mitigation measures that would reduce construction and operational energy use by decreasing vehicle trips, increasing fuel efficiency, increasing building energy efficiency, and facilitating use of renewable energy. Therefore, the proposed Specific Plan would not result in wasteful and inefficient use of non-renewable resources during construction and operation.

## 6 Alternatives

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The *CEQA Guidelines* require that the lead agency identify and evaluate a reasonable range of alternatives intended to reduce the significant environmental impacts of proposed project (the Specific Plan) while still satisfying most of the basic project objectives. The *CEQA Guidelines* also set forth the intent and extent of alternatives analysis to be provided in an EIR.

The following discussion evaluates alternatives to the proposed Specific Plan and examines the potential environmental impacts associated with each alternative. Through comparison of these alternatives to the proposed Specific Plan, the relative environmental advantages and disadvantages of each are weighed and analyzed. The *CEQA Guidelines* require the range of alternatives addressed in an EIR to be governed by a rule of reason. Not every conceivable alternative must be addressed, nor do infeasible alternatives need to be considered (*CEQA Guidelines* Section 15126.6[a]). Section 15126.6 of the *CEQA Guidelines* states that the factors that may be taken into account when addressing the feasibility of alternatives are site suitability, economic viability, availability of infrastructure, general plan consistency or other plans or regulatory limitations, and jurisdictional boundaries. Section 15126.6(b) of the *CEQA Guidelines* states that the discussion of alternatives must focus on alternatives capable of either avoiding or substantially lessening any significant environmental effects of the project, even if the alternative would impede, to some degree, the attainment of the project objectives or would be more costly. The alternatives discussion should not consider alternatives whose implementation is remote or speculative, and the analysis of alternatives need not be presented in the same level of detail as the assessment of the proposed Specific Plan.

Based on the *CEQA Guidelines*, several factors need to be considered in determining the range of alternatives to be analyzed in the EIR and the level of analytical detail that should be provided for each alternative. These factors include: (1) the nature of the significant impacts of the proposed Specific Plan, (2) the ability of alternatives to avoid or lessen the significant impacts associated with the proposed Specific Plan, (3) the ability of the alternatives to meet the objectives of the proposed Specific Plan, and (4) the feasibility of the alternatives. The analysis in this EIR shows that the proposed Specific Plan would result in significant and unavoidable impacts with respect to temporary construction noise and transportation/traffic. All other impacts of the Specific Plan can either be mitigated to a level of less than significant or would be less than significant. The alternatives examined herein represent alternatives that are feasible, that would generally meet the objectives of the Specific Plan, and that could potentially reduce or avoid the significant and less than significant impacts associated with implementation of the proposed Specific Plan.

As required by Section 15126.6 of the *CEQA Guidelines*, this section of the EIR examines a range of reasonable alternatives to the proposed Specific Plan. The following alternatives are evaluated in this EIR:

- Alternative 1: No Project Alternative
- Alternative 2: No Street Redesign Alternative
- Alternative 3: Office Focus Alternative

This section also includes a discussion of the “environmentally superior alternative” among the analyzed alternatives.

Table 6-1 provides a summary comparison of the development characteristics of the proposed Specific Plan and each of the alternatives considered. Detailed descriptions of the alternatives are included in the impact analysis for each alternative. The potential environmental impacts of each alternative are analyzed in Sections 6.1 through 6.3.

**Table 6-1 Comparison of Project Alternatives’ Buildout Characteristics**

Feature	Proposed Specific Plan	Alternative 1: No Project	Alternative 2: No Street Redesign	Alternative 3: Office Focus
Residential Units	1,450 units	1,200 units	1,450 units	870 units
Retail or Commercial	65,000 sf	65,000 sf	65,000 sf	65,000 sf
Office	0 sf	0 sf	0 sf	500,000 sf
Street Redesign	Yes	No	No	Yes

sf = square feet

As indicated above, project alternatives should feasibly be able to attain “most of the basic objectives of the project” (Section 15126.6[a] of the *CEQA Guidelines*), even though implementation of the project alternatives might, to some degree, impede the attainment of those objectives or be more costly (Section 15126.6[b] of the *CEQA Guidelines*). The following are the project objectives as described in Section 2, *Project Description*.

1. **“Complete Neighborhoods”**. Encourage “complete neighborhoods” that foster a diverse mix of uses to provide safe and convenient access for all people of all ages, abilities and income levels to meet daily needs: to live, work, play, learn, worship, dine, shop, and socialize with one another other. An important feature of an urban, complete neighborhood is that it is transit-oriented and built at a walkable and bikeable human scale.
2. **Leverage Publicly Owned Land to Achieve Community Goals**. Leverage publicly owned land, such as the Ashby BART Station Area surface parking lots, and the right-of-way to maximize affordable housing and other uses, community facilities and public improvements desired by the community;
3. **Equitable Development**. Develop regulations, incentives and guidelines that are aligned with the community’s vision and result in greater opportunities for low income and historically disenfranchised or displaced residents.
4. **Compatibility with Adjacent Neighborhoods**. Ensure compatibility with residential neighborhoods adjacent to parcels that abut the main commercial streets and encourage sensitive design transitions, public amenities and uses that benefit the surrounding neighborhood.
5. **Diverse and Affordable Housing**. Encourage development of a variety of types of housing at a range of income levels, especially for those at very low income levels and who are at high risk of involuntary displacement.
6. **Protections for Existing Affordable Housing and Tenants**. Continue and strengthen existing programs and funding for anti-eviction and technical assistance for tenants and property owners to preserve existing affordable housing.

7. **New and Expanded Funding Sources.** Explore new, locally controlled funding sources and expand financing mechanisms to fund affordable housing, public space and other high-priority “community benefits”.
8. **Strong Local Businesses and Non-profit Service Providers and Business Organizations.** Support long-term viability of existing businesses and non-profit service providers and business district and merchant organizations.
9. **Neighborhood Identity Marketing and Support.** Support broader awareness and strengthen the area’s identity as a cultural center for African-Americans and Japanese-Americans; as an arts and cultural district; as home to the Berkeley Juneteenth Festival and the Berkeley Flea and Farmers Markets, and a wealth of community-based non-profit service organizations.
10. **Attractive and Welcoming Environment for Businesses and Workers to Thrive.** Support programs that enhance the attractiveness, cleanliness and safety of Adeline Street and its storefronts/building facades; as well as opportunities for high quality jobs that allow people to live and work in the area,
11. **Better Mobility and Connectivity.** Improve safety, connectivity, accessibility and access along and across Shattuck and Adeline streets for all people of all ages, abilities and income levels to meet daily needs: to live, work, play, learn, worship, dine, shop, and socialize with one another other.
12. **Inclusive Public Space.** Increase the amount of parks, plazas and other public space that encourages pedestrian activity, recreation and access to nature for persons of all abilities, age and incomes.
13. **Efficient and Shared Parking.** Support Transportation Demand Management and carefully managed parking that addresses businesses’ and residents’ needs without undermining public transit, walking and bicycling as preferred modes of transportation.
14. **On-going Transparent and Inclusive Plan Implementation Process.** Continue to engage the community, including those who are typically under-represented in city planning processes in meaningful ways to ensure implementation of Plan goals over the long-term.
15. **Environmental Sustainability.** Create a sustainable urban environment that incorporates green building features, green infrastructure and ecology, sustainable energy systems, water efficiency and conservation, and sustainable transportation systems.

## 6.1 Alternative 1: No Project

### 6.1.1 Description

The No Project Alternative assumes that the proposed Specific Plan is not adopted and that there is no change to the existing configuration of the street and transportation network along the Adeline Corridor, consisting of a street redesign, implementation of bicycle/pedestrian lanes, and elimination of a traffic lane along Adeline Street. The Plan Area would continue to be designated as *Avenue Commercial* and *Neighborhood Commercial* per the City’s General Plan. Under the No Project Alternative, incremental land use development at existing opportunity sites would continue under current land use and zoning regulations, as shown in Table 6-2. Because the No Project Alternative would not involve City adoption of the affordable housing targets for development of the Ashby BART Station that go beyond BART’s affordable housing policy and other regulatory requirements, as well as the on-site affordable housing incentive for rest of the Plan Area, this alternative

would involve an estimated 250 fewer affordable units than the proposed Specific Plan. Over time, growth in accordance with the vision of the area set forth in the City’s General Plan would occur, though not to the same extent, nor achieve the same amount and range of affordability levels as would be envisioned under the proposed Specific Plan.

**Table 6-2 Alternative 1: No Project Growth Projections**

Plan Subarea	Residential (dwelling units)	Retail or Commercial (square feet)
South Shattuck	300	20,000
North Adeline	200	(5,000)
Ashby BART	600	50,000
South Adeline	100	0
<b>Total</b>	<b>1,200</b>	<b>65,000</b>

( ) denotes removal

### 6.1.2 Impact Analysis

The No Project Alternative would involve no changes to the existing regulatory controls and land use policies for the Plan Area. The transportation improvements and street redesign in the Plan Area associated with the proposed Specific Plan would not occur. In addition, the regulatory framework and vision set forth in the Specific Plan would not be implemented, and the policies and strategies to promote new housing options at a range of affordability levels and the strategies to develop more public spaces in the Plan Area would not be adopted. As such, impacts in the Plan Area associated with this alternative would be similar to those identified in the City’s General Plan EIR for buildout under the General Plan. This alternative would not preclude development in the Plan Area.

Because the proposed Specific Plan focuses growth in the Plan Area beyond what was generally anticipated for this area, overall impacts with respect to air quality, biological resources, cultural resources, geology and soils, GHG emissions, hazards and hazardous materials, hydrology and water quality, noise, population and housing, public services, or utilities and service systems may be reduced under this alternative. Nonetheless, some impacts in the issue areas studied in this EIR would continue to occur in the Specific Plan as a result of continued development under the City’s General Plan. While construction impacts associated with implementation of the proposed Specific Plan would be avoided (such as construction associated with the street redesign), construction associated with development in accordance with current zoning and General Plan land use designations would still occur and would result in construction impacts similar to those identified in the General Plan EIR.

Based on the policies shown Table 4.8-1 in Section 4.8, *Land Use and Planning*, the no project alternative would likely not further some policies in the General Plan to the same extent as under the proposed Specific Plan, such as General Plan Policy LU-11 (Pedestrian- and Bicycle-Friendly Neighborhoods) and Policy OS-10 (Access Improvements). Nonetheless, as this alternative involves status quo development trends which are consistent with the City’s General Plan, it would continue to be consistent with applicable land use plans and policies.

The City’s General Plan EIR identified either significant or potentially significant impacts with respect to air quality, biological resources, cultural resources, geology and soils, hydrology and water quality, public services, transportation and traffic, and utilities and service systems. However, these impacts resulted from full buildout in the City related to the General Plan and were not specifically related to buildout in the Plan Area. Overall, no

mitigation measures would be required for the No Project Alternative, except those already required for projects in Berkeley by the City’s General Plan EIR.

Table 6-3 summarizes the trip generation for the No Project Alternative. Compared to the proposed Specific Plan, this alternative would generate approximately eight percent fewer daily trips and seven percent fewer AM and PM peak hour trips. Nonetheless, even without implementation of the proposed Specific Plan, intersections in and around the Plan Area would continue to operate at unacceptable levels of service (LOS) as described in Section 4.12, *Transportation and Traffic*. Impacts at the Adeline Street/Alcatraz intersection would continue to be significant and unavoidable and impacts at the unsignalized intersections along the Adeline Corridor would continue to be significant but mitigable to less than significant. The impact related to pedestrian and bicycle comfort, which is less than significant under the proposed Specific Plan, would be significant and unavoidable because none of the Specific Plan improvements along the corridor would be implemented and many segments and intersections along the corridor would have a Streetscore+ of 3 or higher, similar to current conditions. The impact to the Congestion Management Program (CMP) roadway network, which is significant and unavoidable under the proposed Specific Plan, would be less than significant under this alternative because Adeline Street would continue to provide three lanes in each direction and the alternative would contribute fewer automobile trips to the impact.

**Table 6-3 Alternative 1: Total Automobile Trip Generation**

Uses	Units <sup>1</sup>	Daily	Weekday AM Peak Hour			Weekday PM Peak Hour		
			In	Out	Total	In	Out	Total
Residential <sup>2</sup>	1,200 DU	6,540	102	289	391	293	188	481
Retail <sup>3</sup>	65 KSF	4,490	114	70	184	190	205	395
Subtotal		11,030	216	359	575	483	393	876
MXD Adjustment <sup>4</sup>		-3,240	-89	-138	-227	-199	-171	-370
Pass-by Adjustment <sup>5</sup>		-540	-11	-7	-18	-38	-39	-77
Net New Alternative Trips		7,250	116	214	330	246	183	429
Net New Project Trips <sup>6</sup>		7,910	116	237	353	270	193	463
Percent Difference		-8%	0%	-10%	-7%	-9%	-5%	-7%

<sup>1</sup> DU = dwelling unit, KSF = 1,000 square feet

<sup>2</sup> ITE Trip Generation (10th Edition) land use category 221 (Mid-Rise Apartments, General Urban/Suburban):

- a. Daily:  $T = 5.45(X) - 1.75$
- b. AM Peak Hour:  $\ln(T) = 0.98 \cdot \ln(X) - 0.98$  (26% in, 74% out)
- c. PM Peak Hour:  $\ln(T) = 0.96 \cdot \ln(X) - 0.63$  (61% in, 39% out)

<sup>3</sup> ITE Trip Generation (10th Edition) land use category 820 (Shopping Center, General Urban/Suburban):

- a. Daily:  $\ln(T) = 0.68 \cdot \ln(X) + 5.57$
- b. AM Peak Hour:  $T = 0.5(X) + 151.78$  (62% in, 38% out)
- c. PM Peak Hour:  $\ln(T) = 0.74 \cdot \ln(X) + 2.89$  (48% in, 52% out)

<sup>4</sup> For weekdays, reductions based on application of MXD model: Daily = 29%, AM Peak Hour = 39%, PM Peak Hour = 42%

<sup>5</sup> Based on ITE Trip Generation Handbook (2nd Edition), the average PM peak hour pass-by rates for land use category 820 is 34%. A 17% daily and AM peak hour pass-by rate is applied to retail uses. This adjustment was applied to the trip generation after the MXD adjustment

<sup>6</sup> See Table 4.12-6

Source: Fehr & Peers, 2019

Although overall impacts would be lower than those of the proposed Specific Plan, the beneficial effects associated with the proposed Specific Plan (i.e., affordable housing; economic opportunities; pedestrian facility, bicycle facility, and roadway improvements; and public space and infrastructure) would not occur. Specifically, the No Project alternative would not create the benefits to pedestrian and bicycle comfort and connectivity or create additional public spaces that would occur under the proposed Specific Plan. The No Project alternative would not focus infill development along major transit corridors in order to reduce regional VMT and associated air pollutant and GHG emissions.

The No Project Alternative would not fulfill the project objectives, especially as existing development conditions do not foster “complete neighborhoods” and better mobility and connectivity, inclusive public spaces, and a range of diverse and affordable housing options. Overall, although the Plan Area would continue to be designated as *Avenue Commercial*, *Neighborhood Commercial*, and *Low to Medium Density Residential* and the General Plan goals and policies related to these land uses would apply, the overall intent for development as envisioned by the General Plan would not be implemented to the extent that it would under the Specific Plan.

## 6.2 Alternative 2: No Street Redesign

### 6.2.1 Description

Alternative 2 would involve an alternate vision for the Specific Plan in which the same land uses would be developed but no major changes to the current configuration of the street and transportation network (e.g., street redesign, implementation of bicycle/pedestrian lanes, and elimination of a traffic lane along Adeline Street) would occur. Development standards and guidelines related to right-of-way improvements along the Adeline Corridor would be removed from the Specific Plan, such as those in Specific Plan Chapter 6, Transportation. All other policies, standards, and guidelines in the proposed Specific Plan would remain. As with the proposed Specific Plan, this alternative assumes development of 1,450 residential units with 65,000 square feet of retail/commercial uses distributed throughout the four Subareas, as shown in Table 6-4.

**Table 6-4 Alternative 2: Growth Projections**

Plan Subarea	Residential (dwelling units)	Retail or Commercial (square feet)
South Shattuck	300	20,000
North Adeline	200	(5,000)
Ashby BART	850	50,000
South Adeline	100	0
<b>Total</b>	<b>1,450</b>	<b>65,000</b>

( ) denotes removal

This alternative would meet most of the project objectives as it would include the policies and standards that support residential and economic growth, neighborhood compatibility, and diverse affordable housing. However, it would not fulfill all of the project objectives, as it would not meet Objective 11, “Better mobility and connectivity”, Objective 12, “Inclusive public space”, and Objective 13, “Efficient and shared parking”, when compared to the proposed Specific Plan.

## 6.2.2 Impact Analysis

### a. Air Quality

Temporary construction-related air quality impacts of this alternative would be similar to that of the proposed Specific Plan as the amount of residential units and retail/commercial use would be the same. In addition, like the proposed Specific Plan, this alternative would encourage construction of new residences next to high-volume roadways and therefore would expose sensitive receptors to sources of toxic air contaminants (TAC). However, like the proposed Specific Plan, with implementation of mitigation measures AQ-1 and AQ-2 impacts would be less than significant. Therefore, impacts would be the same as the proposed Specific Plan and would be significant but mitigable.

According to the BAAQMD's 2017 CEQA Air Quality Guidelines, a plan is considered consistent with the 2017 Bay Area Clean Air Plan if it is consistent with current air quality plan control measures and the plan's projected VMT or vehicle trips increase less than or equal to its projected population increase. Although exact VMT projections for this alternative are not available, this alternative would increase population equal to the proposed Specific Plan but would increase the number of vehicle trips more than the proposed Specific Plan since this alternative would not include major changes to the current configuration of the street and transportation network. However, like the proposed Specific Plan, this alternative would be consistent with the applicable control measures in the 2017 Clean Air Plan. Overall, while alternative would increase per capita VMT incrementally more as the proposed Specific Plan, impacts would remain less than significant.

This alternative would not include land uses typically producing objectionable odors, such as agricultural uses, wastewater treatment plants, food processing plants, chemical plants, composting, refineries, landfills, dairies, and fiberglass molding. Impacts would be the same as the proposed Specific Plan and would be less than significant.

### b. Biological Resources

This alternative would maintain the intensity of residential and retail/commercial development within the Plan Area, but avoid changes to the street and transportation network. Nonetheless, this alternative would involve development in the same area as the proposed Specific Plan. As a result, biological resources impacts would be the same as those resulting from the proposed Specific Plan. Mitigation outlined in Section 4.2, *Biological Resources*, would continue to apply and impacts would remain significant but mitigable.

### c. Cultural Resources

This alternative would maintain the intensity of residential and retail/commercial development within the Plan Area, but avoid changes to the street and transportation network. Therefore, this alternative would involve slightly less ground-disturbance than under the proposed Specific Plan, which would reduce the potential for the discovery of unknown buried cultural resources. As a result, cultural resources impacts would be slightly reduced compared to those under the proposed Specific Plan. Impacts would remain less than significant with implementation of the City's standard conditions of approval.

### d. Geology and Soils

The No Street Redesign Alternative would also accommodate 1,450 residential units, similar to the proposed Specific Plan. Therefore, development under this alternative would expose

the same population amount to geologic hazards, including groundshaking, liquefaction, and expansion. Like the proposed Specific Plan, development under this alternative would be subject to provisions of the California Building Code (CBC), the City's Municipal Code, and policies contained in the General Plan which require buildings to be designed to withstand seismic hazards as well as site-specific geotechnical investigations. Adherence to these requirements would reduce the potential for property damage, injury, or death resulting from seismic hazards. Therefore, impacts related to groundshaking and soil instability would be the same as those identified under the proposed Specific Plan and would remain less than significant with adherence to existing regulations.

#### **e. Greenhouse Gas Emissions**

This alternative would also accommodate 1,450 residential units and 65,000 square feet of retail/commercial use, similar to the proposed Specific Plan. However, this alternative would not involve changes to the current configuration of the street and transportation network (e.g., street redesign, implementation of bicycle/pedestrian lanes, and elimination of a traffic lane along Adeline Street). Nonetheless, with mitigation, this alternative would be generally consistent with the policies of the City's Climate Action Plan, with the *Plan Bay Area 2040*, the Bay Area's Regional Transportation Plan and Sustainable Communities Strategy, and with the 2017 Scoping Plan. Impacts related to consistency with adopted GHG reduction plans would remain significant but mitigable and mitigation outlined in Section 4.5, *Greenhouse Gas Emissions*, would continue to apply.

#### **f. Hazards and Hazardous Materials**

This alternative would maintain the intensity of residential and retail/commercial development in the Plan Area compared to the proposed Specific Plan. However, residential and typical retail/commercial uses typically do not involve the storage, disposal or transportation of hazardous materials other than those typically used for cleaning or maintenance. Like the proposed Specific Plan, this alternative may also involve development that would place new residences near hazardous waste users. However, as with the proposed Specific Plan, required adherence to existing regulations and General Plan policies would reduce impacts to less than significant. Impacts would be the same as the proposed Specific Plan.

This alternative would also involve demolition, redevelopment, and construction of new structures. Construction associated with future development in the Plan Area could involve transport or handling of hazardous materials including fuels, lubricating fluids, or solvents, or exposure to lead-based paint and asbestos containing materials. However, impacts related to transport or handling of hazardous materials would be similar to those of the proposed Specific Plan and would be less than significant with adherence to existing regulations. In addition, like the proposed Specific Plan this alternative would not involve new uses that would produce or emit hazardous materials near schools and would not result in exposure of the public or the environment from existing hazardous materials sites. Impacts would be the same as the proposed Specific Plan and would be less than significant.

#### **g. Hydrology and Water Quality**

As with the proposed Specific Plan, Alternative 2 would still involve redevelopment and construction in an existing urban area that is mostly built-out and covered with impervious surfaces. Construction-related and operational erosion and sedimentation, pollutant discharges, and stormwater runoff levels would therefore be similar under this alternative to

the proposed Specific Plan. Compliance with NPDES Permit requirements, City ordinances, and General Plan policies would ensure that water quality and runoff impacts would remain less than significant, the same as the proposed Specific Plan.

Full buildout of this alternative would not introduce substantial new impervious areas that would interfere with groundwater recharge, similar to the proposed Specific Plan, and would therefore not deplete groundwater supplies or interfere with groundwater recharge. Under this alternative, the Specific Plan would still include policies involving landscape-based stormwater management (i.e., Specific Plan Public Space Strategy 7.6) to improve stormwater capacity. However, because this alternative does not involve redesign of the street corridor, fewer opportunities for landscaping may be available in the Plan Area. Therefore, compared to the Specific Plan, this alternative may involve increased impervious surfaces at the horizon year (2040) than assuming the street redesign were to occur. Nonetheless, implementation of this alternative would not substantially alter drainage patterns compared to existing conditions. Impacts to groundwater and drainage would be the same as the proposed Specific Plan and would be less than significant.

The Plan Area is not located within a FEMA-designated flood hazard area, dam or tsunami inundation area, and/or near a large water body or in proximity to the San Francisco Bay such that a seiche could affect the Plan Area. Therefore, as with the proposed Specific Plan, implementation of future development under this alternative would not introduce new flood-related hazards. Specifically, development under this alternative would not place housing and other structures within FEMA-designated flood hazard areas, would not impede or redirect flood flows, would not expose people or structures to significant risk of loss, injury, or death involving flooding, and would not result in inundation by seiche, tsunami, or mudflow. Impacts would be the same as under the proposed Specific Plan and would be less than significant.

## **h. Land Use and Planning**

As with the proposed Specific Plan, this alternative assumes development of 1,450 residential units with 65,000 square feet of retail/commercial uses distributed throughout the four Subareas. However, this alternative would not include changes to the current configuration of the street and transportation network (e.g., street redesign, implementation of bicycle/pedestrian lanes, and elimination of a traffic lane along Adeline Street); therefore, development standards and guidelines related to right-of-way improvements along the Adeline Corridor would be removed from the Specific Plan, such as those in Chapter 6, Transportation. All other policies, standards, and guidelines in the proposed Specific Plan would remain under this alternative.

Based on the policies shown Table 4.8-1 in Section 4.8, *Land Use and Planning*, this alternative would likely not further some policies in the General Plan to the same extent as under the proposed Specific Plan, such as General Plan Policy LU-11 (Pedestrian- and Bicycle-Friendly Neighborhoods) and Policy OS-10 (Access Improvements). Nonetheless, this alternative would still involve transit-oriented development in accordance with General Plan Policy LU-3 (Infill Development), Policy LU-7 (Neighborhood Quality of Life), Policy L-9 (Non-Residential Traffic), Policy LU-21 (Transit-Oriented Development), Policy LU-30 (Ashby BART Station), and Policy H-12 (Transit-Oriented New Construction). Therefore, this alternative would generally be consistent with the goals of the General Plan related to transit-oriented development in the Plan Area. However, due to the lack of street and transportation improvements, this alternative would be less consistent with the policies of the General Plan compared to the proposed Specific Plan. Nonetheless, these potential policy inconsistencies would not result in significant environmental impacts. Impacts to land

use and planning would be the slightly greater under this alternative, but would remain less than significant.

#### **i. Noise**

This alternative would maintain the intensity of residential and retail/commercial development in the Plan Area compared to the proposed Specific Plan. Because the same type of construction equipment would be used and generally the same overall level of development would occur, noise and vibration levels would be similar to the proposed Specific Plan. Similar to the proposed Specific Plan, implementation of Mitigation Measures N-2 and N-3 would minimize the exposure of sensitive receptors to construction noise and vibration, to the extent feasible. Nonetheless, sensitive receptors located adjacent to construction sites in the Plan Area would still be exposed to substantial noise levels from construction activity and the impact from construction noise would remain significant and unavoidable, as with the proposed Specific Plan.

Like the proposed Specific Plan, this alternative would involve development adjacent to residential neighborhoods. Existing and future sensitive receptors within the Plan Area would be exposed to operational noise from buildout under this alternative, and this alternative would introduce additional sensitive receptors to the Plan Area. However, development under this alternative would be subject to the General Plan's goals, policies and Land Use and Noise Compatibility Guidelines provided in the Environmental Management Element and the City's Municipal Code requirements. With adherence to existing policies and regulations, similar to the proposed Specific Plan, impacts would be less than significant and no mitigation would be required.

This alternative would develop the same trip-generating land uses and would generate the same peak hour vehicle trips as the proposed Specific Plan. Consequently, noise level increases associated with vehicle traffic on roadways near and within the Plan Area would be the same as the Specific Plan and would remain less than significant.

#### **j. Population and Housing**

As shown in Table 6-4, this alternative assumes the same land use scenario as envisioned by the proposed Specific Plan, which would result in the development of an estimated 1,450 residential units and 65,000 square feet of retail/commercial uses distributed throughout the four Subareas, as shown in Table 6-4. Because this alternative would result in the same number of residents, housing units, and jobs as the proposed Specific Plan, impacts related to population and housing would be the same as those identified for the proposed Specific Plan. Like the proposed Specific Plan, impacts would be less than significant.

#### **k. Public Services**

This alternative would result in development of an estimated 1,450 residential units and 65,000 square feet of retail/commercial use in the Plan Area through 2040, the same as under the proposed Specific Plan. Therefore, the demand for emergency medical, fire, and police services would be the same compared to the proposed Specific Plan. As with the proposed Specific Plan, in the event new fire or police facilities are needed to serve future development, facilities would be infill development that is unlikely to cause additional significant environmental impacts beyond those identified in this EIR. With compliance with the Fire Code, BMC Section 19.48, and General Plan Policy S-22, impacts to police fire protection services would also remain less than significant, the same as under the proposed Specific Plan.

Based on the students per household generation rates used in the public services analysis for the proposed Specific Plan (see Section 4.11, *Public Services and Recreation*), this alternative would also generate approximately 277 new students incrementally over time (through 2040). Therefore, demand for school services would be the same compared to the proposed Specific Plan. Nonetheless, as with the proposed Specific Plan, payment of State-mandated school impact fees would reduce impacts from future residential projects to a less than significant level.

Based on the City's current supply of 12 acres of parkland per 1,000 residents, the addition of 3,466 residents associated with this alternative would not cause the ratio of parkland to fall below the City's standards of two acres per 1,000 residents. Nonetheless, as with the proposed Specific Plan, this alternative would increase demand for parks in an area of City that is currently underserved. Like the proposed Specific Plan, this alternative would facilitate the development of new public space areas in the Plan Area that could serve as park or recreational space to meet the increased demand, but not to the same extent of the proposed Specific Plan without the street redesign. By planning for some new public space and recreational opportunities in the Plan Area, this alternative would not result in substantial overuse of existing parks or recreational facilities which may cause physical deterioration of these facilities. Impacts would be less than significant, the same as the proposed Specific Plan.

#### **I. Transportation and Traffic**

This alternative would generate the same vehicle trips generation as the proposed Specific Plan. This alternative would continue to trigger LOS impacts at intersections but would reduce the magnitude of the impacts compared to the proposed Specific Plan because it would continue to maintain the current street configuration. Similar to the proposed Specific Plan, impacts at the Adeline Street/ Alcatraz Avenue intersection would continue to be significant and unavoidable and the impacts at the unsignalized intersections along the corridor would be significant but mitigatable to less than significant. Impacts related to pedestrian and bicycle comfort, which are less than significant under the proposed Specific Plan, would be significant and unavoidable because none of the Specific Plan improvements along the corridor would be implemented. Further, the impact to the CMP roadway network, which is significant and unavoidable under the proposed Specific Plan, would be less than significant under Alternative 2 because Adeline Street would continue to provide three lanes in each direction.

Like the proposed Specific Plan, this alternative would not increase hazards, result in inadequate emergency access, or conflict with adopted policies, plans, or program regarding public transit, bicycle and pedestrian facilities. These impacts would be less than significant.

#### **m. Utilities and Service Systems**

As with the proposed Specific Plan, this alternative assumes development of 1,450 residential units with 65,000 square feet of retail/commercial uses distributed throughout the four Subareas. Therefore, buildout under this alternative would result in the same estimated water use, wastewater generation, and solid waste generation. Overall, impacts would be the same as under the proposed Specific Plan and would be less than significant.

## 6.3 Alternative 3: Office Focus

### 6.3.1 Description

The Office Focus Alternative would involve changes to the land use scenario envisioned under the Specific Plan to prioritize office development in the Plan Area. This alternative would involve the same overall building envelope as the proposed Specific Plan, but approximately 40 percent of the development square footage in the Plan Area would be office instead of residential. As with the proposed Specific Plan, this alternative would include changes to the current configuration of the street and transportation network along the Adeline Corridor, consisting of a street redesign, implementation of bicycle/pedestrian lanes, and elimination of a traffic lane along Adeline Street. This alternative assumes development of 870 residential units (a 60 percent decrease), 65,000 square feet of retail/commercial use, and 500,000 square feet of office use, as shown in Table 6-5.

**Table 6-5 Alternative 3: Growth Projections**

Plan Subarea	Residential (dwelling units)	Commercial (square feet)	Office (square feet)
South Shattuck	250	20,000	45,000
North Adeline	200	(5,000)	0
Ashby BART	320	50,000	455,000
South Adeline	100	0	0
Total	870	65,000	500,000

( ) denotes removal

This alternative would meet most of the project objectives as it would include the policies and standards that support residential and economic growth, neighborhood compatibility, diverse affordable housing, and better mobility and connectivity. This alternative would further Objective 1 to provide “complete neighborhoods” by supporting development of housing and jobs near transit (such as the Ashby BART station). However, it would not fulfill Objective 6, Diverse and Affordable Housing, to the same extent as the proposed Specific Plan since this alternative would involve fewer units as those envisioned in the horizon year (2040) under the proposed Specific Plan.

### 6.3.2 Impact Analysis

#### a. Air Quality

Temporary construction-related air quality impacts of this alternative would be similar to that of the proposed Specific Plan as the though the amount of residential construction would decrease, the amount of office construction would increase. Therefore, this alternative would place fewer residences next to high-volume roadways and therefore would expose fewer sensitive receptors to sources of TAC. Nonetheless, like the proposed Specific Plan, with implementation of mitigation measures AQ-1 and AQ-2 to impacts related to construction emissions and exposure of sensitive receptors to air pollution would be less than significant. Therefore, impacts would be the same as the proposed Specific Plan and would be significant but mitigable.

According to the BAAQMD’s 2017 CEQA Air Quality Guidelines, a plan is considered consistent with the 2017 Bay Area Clean Air Plan if it is consistent with current air quality plan control measures and the plan’s projected VMT or vehicle trips increase less than or

equal to its projected population increase. Although exact VMT projections for this alternative are not available, this alternative would decrease population compared to the proposed Specific Plan but would increase the number of vehicle trips more than the proposed Specific Plan due to the implementation of office use. However, like the proposed Specific Plan, this alternative would be consistent with the applicable control measures in the 2017 Clean Air Plan. Overall, while alternative would increase per capita VMT incrementally compared to the proposed Specific Plan, impacts would remain less than significant.

This alternative would not include land uses typically producing objectionable odors, such as agricultural uses, wastewater treatment plants, food processing plants, chemical plants, composting, refineries, landfills, dairies, and fiberglass molding. Impacts would be the same as the proposed Specific Plan and would be less than significant.

#### **b. Biological Resources**

This alternative would decrease the intensity of residential development, include changes to the street and transportation network, and increase the amount of office development within the Plan Area. Nonetheless, this alternative would involve development in the same area as the proposed Specific Plan. As a result, biological resources impacts would be the same as those resulting from the proposed Specific Plan. Mitigation outlined in Section 4.2, *Biological Resources*, would continue to apply and impacts would remain significant but mitigable.

#### **c. Cultural Resources**

This alternative would decrease the intensity of residential development, include changes to the street and transportation network, and increase the amount of office development within the Plan Area. Nonetheless, this alternative would still involve development of the same areas as the proposed Specific Plan. As a result, cultural resources impacts would be the same as those resulting from the proposed Specific Plan and impacts would be less than significant with implementation of the City's standard conditions of approval.

#### **d. Geology and Soils**

This alternative would accommodate 580 less residential units than the proposed Specific Plan. Therefore, this alternative would expose fewer residents amount to geologic hazards, including groundshaking, liquefaction, and expansion when compared to the proposed Specific Plan. However, like the proposed Specific Plan, development under this alternative would be subject to provisions of the CBC, the City's Municipal Code, and policies contained in the General Plan which require buildings to be designed to withstand seismic hazards as well as site-specific geotechnical investigations. Adherence to these requirements would reduce the potential for property damage, injury, or death resulting from seismic hazards. Therefore, impacts related to groundshaking and soil instability would be slightly decreased compared to the proposed Specific Plan but would remain less than significant with adherence to existing regulations.

#### **e. Greenhouse Gas Emissions**

This alternative would accommodate 580 fewer residential units and 500,000 more square feet of office space. As shown in Table 6-7, this alternative would increase trips compared to the proposed Specific Plan. Therefore, GHG emissions associated with mobile trips would likely increase compared to the proposed Specific Plan. This alternative also involves infill and changes to the current configuration of the street and transportation network (e.g.,

street redesign, implementation of bicycle/pedestrian lanes, and elimination of a traffic lane along Adeline Street). Therefore, with mitigation, this alternative would be generally consistent with the policies of the City's Climate Action Plan, with the *Plan Bay Area 2040*, the Bay Area's Regional Transportation Plan and Sustainable Communities Strategy, and with the 2017 Scoping Plan. Impacts related to consistency with adopted GHG reduction plans would remain significant but mitigable and mitigation outlined in Section 4.5, *Greenhouse Gas Emissions*, would continue to apply.

#### **f. Hazards and Hazardous Materials**

This alternative would increase office development in the Plan Area compared to the proposed Specific Plan. However, office uses typically do not involve the storage, disposal or transportation of hazardous materials other than those typically used for cleaning or maintenance. Like the proposed Specific Plan, this alternative may also involve mixed-use structures that would place new residences near hazardous waste users. However, as with the proposed Specific Plan, required adherence to existing regulations and General Plan policies would reduce impacts to less than significant. Impacts would be the same as the proposed Specific Plan.

This alternative would also involve demolition, redevelopment, and construction of new structures. Construction associated with future development in the Plan Area could involve transport or handling of hazardous materials including fuels, lubricating fluids, or solvents, or exposure to lead-based paint and asbestos containing materials. However, impacts related to transport or handling of hazardous materials would be similar to those of the proposed Specific Plan and would be less than significant with adherence to existing regulations. Like the proposed Specific Plan, this alternative would not involve new uses that would produce or emit hazardous materials near schools and would not result in exposure of the public or the environment from existing hazardous materials sites. Impacts would be the same as the proposed Specific Plan and would be less than significant.

#### **g. Hydrology and Water Quality**

Although Alternative 3 involves a decrease in residential units and an increase in office space, this alternative would still involve redevelopment and construction in an existing urban area that is mostly built-out and covered with impervious surfaces. Construction-related and operational erosion and sedimentation, pollutant discharges, and stormwater runoff levels would therefore be similar under this alternative to the proposed Specific Plan. Overall, impacts related to hydrology and water quality would be similar to those identified under the proposed Specific Plan and would be less than significant.

#### **h. Land Use and Planning**

In addition to development of 870 residential units, 65,000 square feet of retail/commercial use, and 500,000 square feet of office use, this alternative would also include changes to the current configuration of the street and transportation network along the Adeline Corridor, consisting of a street redesign, implementation of bicycle/pedestrian lanes, and elimination of a traffic lane along Adeline Street as with the proposed Specific Plan. Therefore, the overall content of the policies, standards, and guidelines of the Specific Plan would remain the same under this alternative. Although this alternative would still be consistent with the same policies in the General Plan (see Section 4.8, *Land Use and Planning*), it would meet policies related to the provision of housing to a lesser extent than the proposed Specific Plan in providing only 870 residential units (as opposed to 1,450 units in the proposed

Specific Plan). Nonetheless, this alternative would generally be consistent with the goals of the General Plan related to transit-oriented development in the Plan Area. Further, potential policy inconsistencies associated with the reduced number of housing units would not result in significant environmental impacts. Impacts would be the same as the proposed Specific Plan and would be less than significant.

#### **i. Noise**

This alternative would decrease residential and increase non-residential (office) buildout in the Plan Area compared to the proposed Specific Plan. Construction noise and vibration levels would be similar to the proposed Specific Plan as the same type of construction equipment would be used. The overall duration of noise and vibration associated with construction would not change as available land would be replaced with non-residential uses. Similar to the proposed Specific Plan, implementation of Mitigation Measures N-2 and N-3 would minimize the exposure of sensitive receptors to construction noise and vibration, to the extent feasible. Nonetheless, sensitive receptors located adjacent to construction sites in the Plan Area would still be exposed to substantial noise levels from construction activity and the impact from construction noise would remain significant and unavoidable, as with the proposed Specific Plan.

Like the proposed Specific Plan, this alternative would involve development adjacent to residences and other noise-sensitive receptors. Existing and future sensitive receptors within the Plan Area would be exposed to operational noise from buildout under this alternative, although this alternative would introduce fewer sensitive receptors to the Plan Area compared to the proposed Specific Plan. Development under this alternative would be subject to the General Plan's goals, policies and Land Use and Noise Compatibility Guidelines provided in the Environmental Management Element and the City's Municipal Code requirements. With adherence to existing policies and regulations, impacts would be the same as the proposed Specific Plan and would be less than significant.

As shown in Table 6-6, Alternative 3 would generate more AM and PM peak hour vehicle trips than the proposed Specific Plan. Consequently, noise level increases associated with vehicle traffic on roadways near and within the Plan Area would be higher. Therefore, impacts would incrementally increase compared to the proposed Specific Plan. Nonetheless, the increase in traffic associated with new Plan Area trips would not increase traffic levels by more than 10 percent and therefore would not result in a significant increase in traffic noise. Impacts would remain less than significant, the same as under the proposed Specific Plan.

#### **j. Population and Housing**

As shown in Table 6-6, this alternative would involve an increase in 2,079 residents, 870 housing units, and 1,862 new jobs in the Specific Plan area compared to existing conditions. Compared to the proposed Specific Plan, this alternative would result in a decrease of 1,387 residents and 580 housing units, but would result in an increase of 1,667 new jobs.

**Table 6-6 Alternative 3: Population, Jobs, and Housing**

	Proposed Specific Plan	Alternative3	Difference	% Change
Population (# residents) <sup>1</sup>	3,466	2,079	(1,387)	(40%)
Housing (# units)	1,450	870	(580)	(40%)
Employment (# jobs) <sup>2</sup>	195	1,862	1,667	854%

<sup>1</sup> Assuming 2.39 residents per household; see Table 4.10-3 in Section 4.10, *Population and Housing*.

<sup>2</sup> Based on estimates provided by Fehr & Peers, the 65,000 net new square feet of retail/commercial space would generate 195 new jobs; see Table 4.10-3 in Section 4.10, *Population and Housing*. In addition, data collected by The Natelson Company, Inc. 2001, indicate an estimated 300 median sf per employee for high-rise office uses. Total job growth under Alternative 2 assumes addition of 195 new jobs from 65,000 sf of retail/commercial space and new jobs from 500,000 sf of office space (500,000 sf / 300 sf per employee = 1,667).

( ) denotes decrease

In the year 2040, the Study Area is projected to have grown by 2,745 people and 344 jobs to have a total population of 17,454 and 5,357 jobs (see Table 4.10-2 in Section 4.10, *Population and Housing*). Overall, growth under the Specific Plan would be below the Study Area population growth projections but would exceed the job growth forecast. However, the population and job increase would be within the City’s anticipated growth range and would be added incrementally over the 20-year period of estimated buildout. Further, the Plan Area was designated by the City of Berkeley as a Priority Development Area, an area targeted for transit-oriented development. Therefore, as with the proposed Specific Plan, this alternative would not result in growth exceeding regional projections and the growth that would occur is in a location encouraged by adopted local and regional plans due to its proximity to transit and transportation corridors. Overall growth impacts would be less than significant, the same as the proposed Specific Plan.

Similar to the proposed Specific Plan, although this alternative would increase development of new housing and office space in the Plan Area, the increase in the density of development may potentially cause displacement of existing residents. However, this alternative would retain the policies and provisions included in the proposed Specific Plan that encourage the protection of residents at risk of displacement in or near the Plan Area. Therefore, impacts related to displacement would be less than significant, the same as the proposed Specific Plan.

**k. Public Services**

This alternative would result in 580 fewer residential units than the proposed Specific Plan but increase non-residential office development by 500,000 square feet. Overall, potential impacts with respect to police and fire department facilities would likely be similar as those associated with the proposed Specific Plan. As with the proposed Specific Plan, impacts would continue to be less than significant.

Based on the students per household generation rates used in the public services analysis for the proposed Specific Plan (see Section 4.11, *Public Services and Recreation*), this alternative would generate approximately 166 new students, a reduction of 111 students compared to the proposed Specific Plan. Therefore, demand for school services would also decrease. With payment of State-mandated school impact fees, impacts to schools would be less than significant under this alternative, similar to the proposed Specific Plan.

This alternative would reduce the number of residential units compared to the proposed Specific Plan, and would reduce population within the Plan Area compared to full buildout of the proposed Specific Plan. Therefore, the demand for parks and recreational facilities

would be reduced compared to the proposed Specific Plan. Nonetheless, as with the proposed Specific Plan, impacts to parks and recreation facilities would be less than significant.

## I. Transportation and Traffic

Table 6-7 summarizes the trip generation for this alternative. Compared to the proposed Specific Plan, this alternative would generate approximately 28 percent more daily trips, 71 percent more AM Peak hour trips, and 57 percent more PM peak hour trips. Therefore, this alternative would continue to trigger LOS impacts at study area intersections and would increase the magnitude of the impacts compared to the proposed Specific Plan. Similar to the proposed Specific Plan, impacts at the Adeline Street/ Alcatraz Avenue intersection would continue to be significant and unavoidable and impacts at the unsignalized intersections along the corridor would be significant but mitigable to less than significant. Similar to the proposed Specific Plan, the impact to pedestrian and bicycle comfort would be less than significant because this alternative would implement the Specific Plan improvements along the corridor. Further, the impact to the CMP roadway network, which would be significant and unavoidable under the proposed Specific Plan, would remain significant and unavoidable under this alternative. However, this alternative would increase the magnitude of this impact because it would contribute more vehicle trips to the affected roadway segments. Like the proposed Specific Plan, this alternative would not increase hazards, result in inadequate emergency access, or conflict with adopted policies, plans, or program regarding public transit, bicycle and pedestrian facilities. These impacts would be less than significant.

**Table 6-7 Alternative 3: Total Automobile Trip Generation**

Uses	Units <sup>1</sup>	Daily	Weekday AM Peak Hour			Weekday PM Peak Hour		
			In	Out	Total	In	Out	Total
Residential <sup>2</sup>	870 DU	4,740	74	211	285	215	138	353
Retail <sup>3</sup>	65 KSF	4,490	114	70	184	190	205	395
Office <sup>4</sup>	500 KSF	5,060	427	69	496	84	441	525
Subtotal		14,290	615	350	965	489	784	1,273
MXD Adjustment <sup>5</sup>		-3,620	-215	-124	-339	-177	-283	-460
Pass-by Adjustment <sup>6</sup>		-520	-10	-7	-17	-37	-37	-74
Net New Alternative Trips		10,100	387	218	605	271	456	727
Net New Project Trips <sup>7</sup>		7,910	116	237	353	270	193	463
Percent Difference		+28%	+234%	-8%	+71%	+0%	+136%	+57%

<sup>1</sup> DU = dwelling unit, KSF = 1,000 square feet

<sup>2</sup> ITE Trip Generation (10th Edition) land use category 221 (Mid-Rise Apartments, General Urban/Suburban):

Daily:  $T = 5.45(X) - 1.75$

AM Peak Hour:  $\ln(T) = 0.98 \cdot \ln(X) - 0.98$  (26% in, 74% out)

PM Peak Hour:  $\ln(T) = 0.96 \cdot \ln(X) - 0.63$  (61% in, 39% out)

<sup>3</sup> ITE Trip Generation (10th Edition) land use category 820 (Shopping Center, General Urban/Suburban):

Daily:  $\ln(T) = 0.68 \cdot \ln(X) + 5.57$

AM Peak Hour:  $T = 0.5(X) + 151.78$  (62% in, 38% out)

PM Peak Hour:  $\ln(T) = 0.74 \cdot \ln(X) + 2.89$  (48% in, 52% out)

<sup>4</sup> ITE Trip Generation (10th Edition) land use category 710 (General Office, General Urban/Suburban):

Daily:  $\ln(T) = 0.97 \cdot \ln(X) + 2.50$

AM Peak Hour:  $T = 0.94(X) + 26.49$  (86% in, 14% out)

PM Peak Hour:  $\ln(T) = 0.95 \cdot \ln(X) + 0.36$  (16% in, 84% out)

<sup>5</sup> For weekdays, reductions based on application of MXD model: Daily = 25%, AM Peak Hour = 35%, PM Peak Hour = 36%

<sup>6</sup> Based on ITE Trip Generation Handbook (2nd Edition), the average PM peak hour pass-by rates for land use category 820 is 34%. A 17% daily and AM peak hour pass-by rate is applied to retail uses. This adjustment was applied to the trip generation after the MXD adjustment.

<sup>7</sup> See Table 4.12-6

Source: Fehr & Peers, 2019.

### m. Utilities and Service Systems

Compared to the proposed Specific Plan, this alternative would reduce residential buildout by 580 units and would increase non-residential buildout by 500,000 square feet of office use. As shown in Table 6-8, wastewater generation would be reduced by 39,096 gallons per day (19 percent) under this alternative compared to the proposed Specific Plan. Impacts would be reduced compared to the proposed Specific Plan and would remain less than significant.

**Table 6-8 Alternative 3: Estimated Wastewater Generation**

Use	Alternative Buildout	Average Wastewater Demand <sup>1</sup>	Expected Wastewater Generation	
			Gallons/Day	Million Gallons/Day
Office	500,000 sf	0.074 gpd/sf	37,000	0.037
Retail/Commercial	65,000 sf	0.173 gpd/sf	11,245	0.011
Apartment: Low-Rise	870 dwelling units	131.2 gpd/unit	114,144	0.114
Alternative 3 Total			162,389	0.162
Proposed Specific Plan for Comparison			201,485	0.201

<sup>1</sup> Assume wastewater is 80 percent of water use shown in Table 4.13-3.

Note: numbers may not add up due to rounding. ( ) denotes subtraction; sf = square feet

As shown in Table 6-9 and based on the water use factors used in Section 4.13, *Utilities and Service Systems*, this alternative would require an estimated 203,612 gallons of water per day. This represents a reduction of 48,775 gallons per day (19 percent) when compared to the proposed Specific Plan. Therefore, impacts related to water supply would be reduced compared to the proposed Specific Plan and would remain less than significant.

**Table 6-9 Alternative 3: Estimated Water Demand**

Use	Alternative Buildout		Average Water Demand <sup>1</sup>	Average Daily Water Demand (gpd)
	Quantity	Unit		
Office	500,000	sf	0.093 gpd/sf	46,500
Retail/Commercial	65,000	sf	0.216 gpd/sf	14,040
Apartment: Low-Rise	870	dwelling units	164 gpd/unit	143,072
Alternative 3 Total				203,612
Proposed Specific Plan Total for Comparison				252,387

<sup>1</sup> Flowrate factors are based on reference material provided by EBMUD: 65 gpd/person for low-rise apartments; 0.216 gpd/sf for commercial retail space; 0.093 gpd/sf for office space. Also assumes conservative estimate of 2.53 persons per household (ABAG 2018).

Note: numbers may not add up due to rounding. ( ) denotes subtraction; sf = square feet

As shown in Table 6-10 and based on the solid waste generation rates used for the proposed Specific Plan shown in Section 4.13, *Utilities and Service Systems*, this alternative would generate approximately 2,273 pounds of solid waste per day (accounting for a 76 percent waste diversion rate), which is an incremental increase of 163 pounds compared to the proposed Specific Plan. Overall, impacts associated with solid waste generation would remain less than significant, as with the proposed Specific Plan.

Table 6-10 Alternative 3: Solid Waste Generation

Use	Alternative Buildout		Generation Rate <sup>1</sup>	Solid Waste (pounds per day)	Solid Waste (tons per day)	Solid Waste (cubic yards per day) <sup>2</sup>
	Quantity	Units				
Office <sup>1</sup>	500,000	Sf	6 pounds/ 1,000 square feet/day	3,000	1.5	3.0
Retail/Commercial	65,000	Sf	0.046 pounds/ square foot/day	2,990	1.5	3.0
Apartment: Low-Rise	870	dwelling units	4.0 pounds/ unit/day	3,480	1.7	3.5
<b>Alternative 3 Total</b>				<b>9,470</b>	<b>4.7</b>	<b>9.5</b>
Alternative 3 Total Assuming 76% Diversion Rate				2,273	1.1	2.3
Proposed Specific Plan Total Assuming 76% Diversion Rate for Comparison				2,110	1.1	2.2

<sup>1</sup> Source for Generation rates <https://www2.calrecycle.ca.gov/WasteCharacterization/General/Rates#Residential>

<sup>2</sup> Based on the conversion factor described under Table 4.14-1, County-Service Landfill Capacity for “landfill density” Municipal Solid Waste, of approximately 750 to 1,250 pounds per cubic yard, or an average of 1,000 pounds per cubic yard.

## 6.4 Alternatives Considered But Rejected

Three other options for alternatives were proposed by members of the public or public agencies during development of the Specific Plan and the EIR scoping period. These additional options and why they were considered but rejected are described in more detail below:

1. **Higher density residential use (i.e., 15-20 story residential towers) at the Ashby BART Station.** This option would allow high density development at a greater height than currently envisioned under the proposed Specific Plan at the Ashby BART station. This option would result in increased traffic, but would likely result in a decrease in overall VMT and GHG emissions due to the proximity of housing near BART. However, this option was rejected from further consideration because it was not consistent with the majority of the community feedback.
2. **Adeline Corridor right-of-way redesign only, no affordable housing policies.** This alternative would involve improvements to the Adeline Corridor right-of-way as envisioned under the Specific Plan but would not involve the provisions in the proposed Specific Plan related to land use and affordable housing. Current State and local land use and affordable housing regulations would continue to apply. This option would omit the additional affordable housing targets for BART and public land and the local density bonus that are currently components of the proposed Specific Plan. Redevelopment of the BART Station would still include a number of affordable housing units because of BART's affordable housing policy, the City's inclusionary housing requirement, and the possibility of a developer taking advantage of the highest tier of the state density bonus law. While this would deliver a significant amount of affordable housing, this option was ultimately rejected in favor of an even higher target for affordable housing at the BART station and the overall Plan Area that is included in the proposed Specific Plan. The affordable housing target set forth in the proposed Specific Plan is consistent with the City's and community's goal of supporting affordable housing as one of the highest priorities of the Plan. Under this option, the allowed land uses and the street and transportation improvements would be the same as under the proposed Specific Plan. The removal of affordable housing goals and policies would likely increase traffic and

VMT since market-rate housing typically generates more vehicle trips compared to affordable housing. This scenario was rejected from further consideration because affordable housing is an integral aspect of the Specific Plan's goals.

3. **Implementation of a dedicated bus lane.** This option would involve the same land uses as those proposed under the Specific Plan, but would remove an additional lane along Adeline Street for the addition of a dedicated bus lane. While the additional bus lane would decrease GHG emissions and VMT by improving transit service, the removal of one lane would increase traffic in the Plan Area to an extent undesirable from an overall mobility perspective. Therefore, this scenario was rejected from further consideration.

## 6.5 Environmentally Superior Alternative

CEQA requires the identification of the environmentally superior alternative among the options studied. When the "No Project" alternative is determined to be environmentally superior, CEQA also requires identification of the environmentally superior alternative among the development options.

Table 6-11 indicates whether each alternative's environmental impact is greater, lesser, or similar to the proposed Specific Plan. As shown therein, the No Project Alternative would reduce all of the proposed Specific Plan impacts and would be environmentally superior to the proposed Specific Plan. Although overall impacts would be lower than those of the proposed Specific Plan, the beneficial effects associated with the proposed Specific Plan (i.e., affordable housing; economic opportunities; pedestrian facility, bicycle facility, and roadway improvements; and public space and infrastructure) would not occur. In addition, the No Project Alternative would not fulfill the project objectives; especially as existing development conditions do not offer connectivity along and across Shattuck and Adeline streets. While the goals and policies associated with the Plan Area's existing *Avenue Commercial, Neighborhood Commercial, and Low to Medium Density Residential* land uses would apply, the overall intent for development as envisioned by local and regional goals would not be implemented to the extent that it would under the policies, standards, and guidelines of the proposed Specific Plan.

Among the other alternatives being considered, both Alternative 2 and Alternative 3 reduce the magnitude of environmental impacts in certain areas but increase the magnitude of impacts in other areas. Alternative 2 would slightly reduce impacts related to cultural resources but would increase land use and planning impacts, whereas Alternative 3 would slightly reduce impacts related to geology and soils but would increase noise impacts.

Nonetheless, Alternative 2 could be considered the environmentally superior alternative as it would reduce the significant and unavoidable impact related to the CMP network. In addition, because this alternative maintains the current street configuration, it would reduce the magnitude of the impacts at the intersection of Adeline Street/Alcatraz Avenue. Because Alternative 3 would increase trips, it would increase the magnitude of traffic-related impacts which is why it is not considered to be the environmentally superior alternative.

Although Alternative 2 would be considered the environmentally superior alternative, this alternative would result in an additional significant and unavoidable impact associated with bicycle and pedestrian comfort. This alternative would meet most of the project objectives as it would include the policies and standards that support residential and economic growth, neighborhood compatibility, and diverse affordable housing. However, it would not fulfill all of the project objectives, as it would not meet Objective 11, "Better mobility and

connectivity”, Objective 12, “Inclusive public space”, and Objective 13, “Efficient and shared parking”, when compared to the proposed Specific Plan.

**Table 6-11 Comparison of Alternatives**

<b>Issue</b>	<b>Proposed Specific Plan Impact Classification*</b>	<b>Alternative 1: No Project</b>	<b>Alternative 2: No Street Re-Design</b>	<b>Alternative 3: Office Focus</b>
Air Quality	Significant but Mitigable	+ (No impact)	= (Significant but Mitigable)	= (Significant but Mitigable)
Biological Resources	Significant but Mitigable	+ (No impact)	= (Significant but Mitigable)	= (Significant but Mitigable)
Cultural Resources	Less than Significant	+ (No impact)	+ (Less than Significant)	= (Less than Significant)
Geology and Soils	Less than Significant	+ (No impact)	= (Less than Significant)	+ (Less than Significant)
Greenhouse Gas Emissions	Significant but Mitigable	+ (No impact)	= (Significant but Mitigable)	= (Significant but Mitigable)
Hazards and Hazardous Materials	Less than Significant	+ (No impact)	= (Less than Significant)	= (Less than Significant)
Hydrology and Water Quality	Less than Significant	+ (No impact)	= (Less than Significant)	= (Less than Significant)
Land Use and Planning	Less than Significant	= (No impact)	- (Less than Significant)	= (Less than Significant)
Noise	Significant and Unavoidable	+ (No impact)	= (Significant and Unavoidable)	- (Significant and Unavoidable)
Population and Housing	Less than Significant	+ (No impact)	= (Less than Significant)	= (Less than Significant)
Public Services and Recreation	Less than Significant	+ (No impact)	= (Less than Significant)	+ (Less than Significant)
Transportation and Traffic	Significant and Unavoidable	+ (No impact)	+ (Significant and Unavoidable)	- (Significant and Unavoidable)
Utilities and Service Systems	Less than Significant	+ (No impact)	= (Less than Significant)	+ (Less than Significant)

\* Impact classifications are shown for the greatest impact in the issue area (i.e., if Class II and III impacts were identified in the issue area, the table indicates the overall impact in that issue area as Class II).

- impact would be worse than that of the proposed Specific Plan

+ impact would be improved than that of the proposed Specific Plan

= impact would be the same as the proposed Specific Plan

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