



Southside Zoning Ordinance Amendments Project

Initial Study

prepared by

City of Berkeley

Planning and Development Department

1947 Center Street ,2nd Floor

Berkeley, California 94704

Contact: Elizabeth Greene, AICP, Senior Planner

prepared with the assistance of

Rincon Consultants, Inc.

449 15th Street, Suite 303

Oakland, California 94612

July 2020



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Environmental Scientists | Planners | Engineers

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Initial Study

1. Project Title

Southside Zoning Ordinance Amendments Project

2. Lead Agency Name and Address

City of Berkeley
Planning and Development Department
1947 Center Street, 2nd Floor
Berkeley, California 94704

3. Contact Person and Phone Number

Elizabeth Greene, AICP
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4. Project Location and Setting

The project location is the “Southside” or “Southside Area” of the City of Berkeley, as defined in the 2011 Southside Plan (City of Berkeley 2011) and shown in Figure 1 (Regional Location) and Figure 2 (Southside Area). The Southside Area encompasses approximately 28 full city blocks and several more partial city blocks, directly south of the main campus of the University of California at Berkeley (“the University”). It is generally bounded by Bancroft Way and the University on the north; Dwight Way on the south (including parcels on both sides of Dwight Way); Prospect Street on the east (including parcels on both sides of Prospect Street); and Fulton Street on the west (including some parcels extending west from Fulton towards Shattuck Avenue and Downtown Berkeley). The Southside Area also includes properties extending south along Telegraph Avenue between Dwight Way and Parker Street.

Existing Land Use and Ownership

The Southside contains a diverse mix of land uses, including housing, offices, retail, religious and cultural institutions, schools, hotels, parking, recreational uses, and public streets. The most common existing use is residential, which currently occupies approximately 60 percent of the developable land in the Southside (excluding streets).

In addition to housing, the Southside includes the important retail and social corridor of Telegraph Avenue, a major student-oriented street that provides storefront shopping, restaurants, community activity, and street vendors.

Figure 1 Regional Location



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 Project Location 

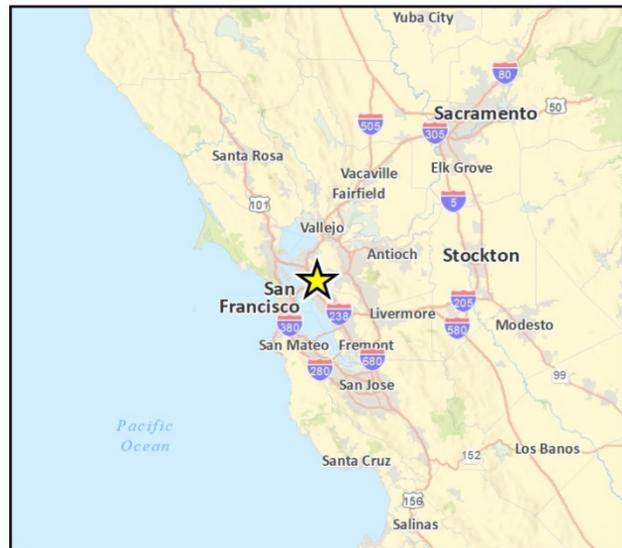


Fig 1 Regional Location

Figure 2 Southside Area Location



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Fig. 2 Southside Area Location

An array of other shops and businesses used by students, visitors, and residents is also found elsewhere in the Southside. This includes longstanding establishments such as Caffe Strada and Free House at College Avenue and Bancroft Way; the retail and commercial block along Dwight Way between Shattuck Avenue and Fulton Street; and the many shops and restaurants along streets perpendicular to Telegraph Avenue – particularly along Bancroft Way and Durant Avenue.

Most land in the area is owned by private individuals or institutions. However, the Southside contains a significant number of University-owned parcels, mostly west of College Avenue, as shown in Figure 3. Some of these University-owned parcels contain University-operated housing, such as the Unit 1 and 2 Residence Halls along College Avenue; the Unit 3 Residence Halls on Dana Street between Channing Way and Durant Avenue; Beverly Cleary Hall between Haste Street and Channing Way; and Martinez Commons near Telegraph Avenue between Channing Way and Haste Street.

The Southside also contains University-owned housing operated by the Berkeley Student Cooperative (the largest student non-profit housing cooperative in the United States, in operation since 1933), including Fenwick Weavers Village and the Rochdale Apartments. Other University-owned land has a non-residential use associated with the University, such as the Miller Institute and Anna Head Alumnae Hall, the Tang Health Center, the Legends Aquatic Center, the UC Berkeley Safe Transportation Research and Education Center, and the University's Residential and Housing Services Center.

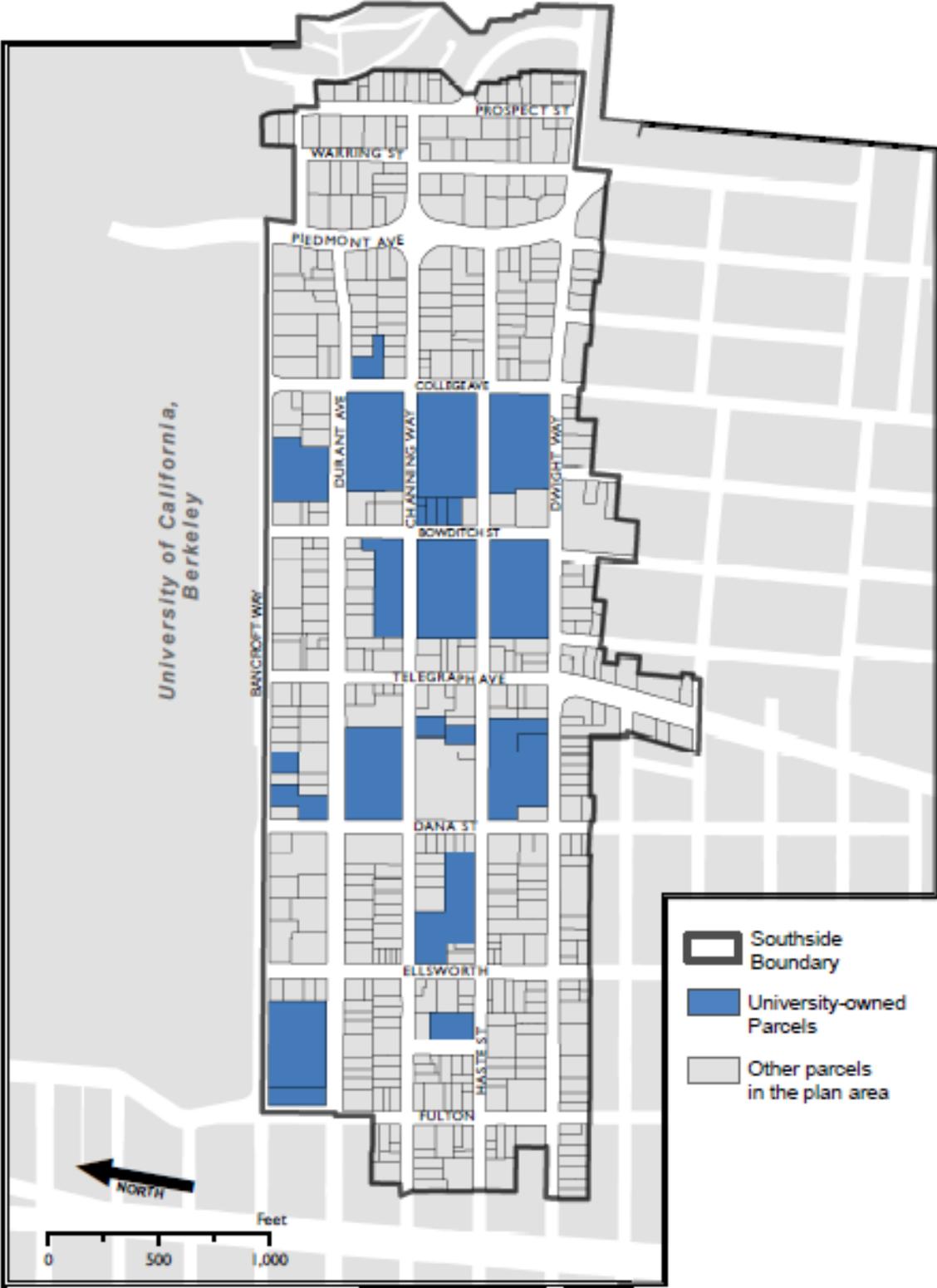
Other University-owned land is currently identified as the location of potential development projects in the planning phases, mostly focused on University housing and open space. The locations being considered for housing development by the University within the Southside include People's Park, 2020 Bancroft, the former Anna Head School, Unit 3, and the Channing/Ellsworth complex.

In addition to University-owned housing, there is a significant amount of existing housing that is privately owned or owned by institutions besides the University. Some privately-owned housing – such as Wesley House and David Blackwell Hall along Bancroft Way; the Metropolitan at Durant Street and Ellsworth Street; or the Garden Village Apartments along Dwight Way – serves the student population. Other housing, particularly further south from the University such as along Dwight Way or along Fulton Street, is not specifically student-focused and likely has a mix of student and non-student residents. Several large houses owned by fraternities and sororities are located along Piedmont Avenue and further uphill to the east. There are also a significant number of non-University institutional uses throughout the Southside, including the Wright Institute, the American Baptist Seminary of the West, the Berkeley Free Clinic, and the Berkeley Architectural Heritage Association.

Historic Resources

The Southside is the location of many designated historic landmarks or structures of merit. This includes the Julia Morgan-designed Berkeley City Club; many of Berkeley's oldest and largest places of worship such as the Bernard Maybeck-designed First Church-Christian Scientist, Saint Mark's Episcopal Church, Trinity Church, First Congregational Church of Berkeley, and Newman Hall-Holy Spirit Parish; and a variety of architecturally significant historic housing such as the Thorsen House, the Picardo Arms Apartments, and many other early 20th century apartments, retail, and mixed-use buildings.

Figure 3 University-owned Parcels



Existing Development Pattern

The existing building heights and intensities east of College Avenue are generally lower than those west of College Avenue. This is consistent with the historic zoning pattern pre-dating the 2011 Southside Plan, which limited heights to four stories east of College Avenue (formerly the R-4H district before 2009, currently the R-3 district) while allowing up to six stories west of College Avenue (formerly the R-4 district before 2009, currently a mix of districts including R-SMU, R-S, and C-T). At the same time, the development pattern east of College Avenue remains relatively compact, with a large percentage of parcels containing three- or four-story apartment buildings with high lot coverage and urban frontages close to the street. Many of these middle-density housing types were built in the early- to mid-20th century and have defined the urban form and character of this area for decades. Many of the parcels east of College Avenue are small (less than 0.5-acre, with many less than 0.25-acre), and very few have obvious development opportunities such as vacant land or buildings, surface parking lots, or under-utilized single-story buildings, or structures.

The existing pattern of height, intensity, and parcel pattern west of College Avenue is more varied, with existing intensity focused along Telegraph Avenue and Bancroft Way, as well as at major University-owned sites such as the eight- and nine-story Unit 1 and Unit 2 Residence Halls. Heights along Telegraph Avenue range from three to five stories, mostly consisting of mixed-use buildings with housing over retail, along with some single-story retail buildings. Multi-unit housing and many institutional buildings in a range of heights, intensities, and building types are common in other locations west of College Avenue. This includes smaller three- and four-story urban apartment buildings – mostly built in the early to mid-20th century – along with many five- and six-story apartment and mixed-use buildings constructed in the early to mid-20th century as well as more recently.

Most of the tallest and most prominent existing buildings in the Southside are west of College Avenue and include the historic six-story Picardo Arms apartment building at 2491 Ellsworth Street; the historic six-story Telegraph Commons Apartments; the seven-story historic Graduate Hotel and restaurant (formerly The Durant Hotel); and the landmarked six-story Berkeley City Club, along with more recently constructed buildings such as the eight-story David Blackwell Hall and the five-story Metropolitan. Other prominent buildings, including the historic Trinity Church and First Congregational Church, have features such as steeples or towers with heights rivaling nearby six- and seven-story buildings. Many of the large multi-story buildings on the UC Berkeley campus are also visible from much of the Southside. The area west of College Avenue includes the largest University-owned buildings and residence halls, including several eight- and nine-story buildings, as described above.

Besides the main retail areas along and perpendicular to Telegraph Avenue (described above), most of the ground-floor frontages in the Southside are residential, along with some institutional and office frontages. There are a small number of single-family residential buildings in the Southside. Many buildings that were originally single-family residences have been converted into multi-unit housing or non-residential uses over time. In contrast to the area east of College Avenue, the area west of College Avenue contains a greater mix of small parcels (less than 0.5 acre) and large parcels (greater than 0.5 acre), and more sites where new housing may be likely to be built, such as those with existing surface parking lots or single-story structures. The area west of College Avenue has also seen the majority of recent new housing development and proposals in recent years, particularly along Telegraph Avenue and Bancroft Way.

Existing Street and Circulation Pattern

Telegraph Avenue functions as a gathering place and spine of pedestrian activity for the Southside and adjacent neighborhoods, connecting the main University campus with other Berkeley neighborhoods – and eventually Downtown Oakland – further south. College Avenue is also an important north-south corridor connecting the University with neighborhoods further south such as the Elmwood in Berkeley and Rockridge in Oakland. Larger east-west corridors such as Bancroft Avenue and Dwight Way provide connections between the Southside and other neighborhoods in central and west Berkeley. The remainder of the Southside is connected by a regular grid of streets and small blocks, most of which measure around 250 feet (north-south) by 600 feet (east-west), and all of which have sidewalks on both sides of the street. This connected grid – along with the Southside’s location near the University, large student population, compact development pattern, and mix of residential and non-residential uses – contribute to some of the highest rates of walking and cycling in Berkeley, and some of the lowest measured vehicle miles traveled (VMT) per resident in the City.

5. Regulatory Land Use Setting

City of Berkeley General Plan

Berkeley’s General Plan, adopted in 2001, is a comprehensive, 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.

General Plan land use designations for parcels in the Southside include Avenue Commercial, Residential Mixed-Use, Medium Density Residential, and High Density Residential. Minor adjustments to the General Plan may be necessary for consistency with zoning amendments adopted as part of the Southside Zoning Ordinance amendments.

City of Berkeley Southside Plan

The existing Southside Plan was adopted in 2011. The 2011 Southside Plan and its strategies and policy guidance are intended to remain as the primary planning policy document for the Southside, both during and after the proposed Southside Zoning Ordinance amendments in the Southside Area. The 2011 Southside Plan’s boundaries are shown in Figure 2 and are identical to the “Southside Area” project boundary for this study. The 2011 Southside Plan’s major goals (pages 7-8) are intended to be supported by the proposed Southside Zoning Ordinance amendments, and are as follows:

- **Housing.** Create additional housing at appropriate locations to help meet the housing demand for students and people employed nearby, thus taking advantage of proximity to the University and Downtown to reduce automobile dependence and to increase travel to work or school by non-automobile transportation. Encourage the provision of affordable housing.
- **Land Use.** Provide for a high-density residential and commercial mixed-use edge to the University of California campus and the “spine” along Telegraph Avenue. The high-density edge and spine are the focus for infill development. Development becomes progressively less dense and more residential in use the greater the distance from Bancroft Way and Telegraph Avenue, providing a buffer and transition to the lower density residential areas to the east and south of the Southside Area.
- **Transportation.** Increase the quality, amenity, and use of all non-automotive modes (public transit, bicycles, and pedestrian), and reduce the number of trips made in single-occupant automobiles.
- **Economic Development.** Enhance the commercial district so that it better meets the needs of the wide variety of users who frequent the neighborhood. Improve access, marketing, and safety.
- **Community Character.** Recognize, preserve, and enhance the unique physical character of the Southside.
- **Public Safety.** Improve public safety, address social needs, and act to minimize loss of life and property in the event of a natural disaster.

The 2011 Southside Plan also includes a series of specific land use and housing strategies (pages 30-31), which remain applicable and supported by the proposed Southside Zoning Ordinance amendments. These strategies are as follows:

- Encourage creation of additional affordable housing in the Southside for students and for year-round residents, including UC employees and other area employees, by the University, the private sector, student cooperatives, non-profits or a combination of these groups working in partnership;
- Encourage the construction of infill buildings, particularly new housing and mixed-use developments, on currently underutilized sites such as surface parking lots and vacant lots;
- Preserve and conserve the unique physical, historic, and social character of the Southside;
- Preserve and enhance historic and architecturally significant buildings, and ensure that new development complements the existing architectural character of the area through design review;
- Encourage reinvestment in deteriorating housing stock to improve the overall physical quality of the neighborhood;
- Enhance the pedestrian orientation of the Southside;
- Improve the Bancroft Way corridor as a physical connection and transition between the University and the Southside;
- Encourage a land use pattern in the Southside which provides for a high-density residential and commercial mixed-use edge to the University of California campus and a “spine” along Telegraph Avenue. The high-density edge and spine are adjoined by areas which progressively become less dense and more residential in use and provide a buffer and transition to the lower density residential areas to the east and south of the Southside Area;

- Refine and reinforce the existing land use patterns in the Southside by acknowledging five distinct “subareas” of land uses in the area: two residential subareas, a mixed-use subarea, and two commercial subareas. Create specific policies for each subarea;
- Limit office and institutional development to areas closest to the UC campus and to the Bancroft-Durant transit corridor. Give preference to housing over new office and institutional development throughout the Southside; and
- Encourage relocation of office and institutional uses from residential subareas to appropriate locations closer to campus and to transit corridors.

The strategies, goals, and policies of the 2011 Southside Plan are not intended to be significantly updated or changed as part of this process.

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 that currently exist in the Southside Area are as follows:

- C-T (Telegraph Avenue Commercial District)
- R-SMU (Residential Southside Mixed Use District)
- R-S (Residential Southside High Density District)
- R-3 (Multiple-Family Residential District)
- C-SA (South Area Commercial District)

These existing zoning districts are shown in Figure 4, and their requirements are summarized in Table 1.

In addition, parcels located east of College Avenue are subject to the Hillside (H) Overlay which is primarily designed to protect views and allow for flexibility in front yard setbacks to accommodate steep slopes.

The 2011 Southside Plan also established a “Car-Free Housing Zone,” which currently applies to the C-T district, the R-SMU district, and some portions of the R-S district. The C-T district, R-SMU district, and R-S district – along with the Car-Free Housing Zone – only occur in the Southside. The R-3 and C-SA districts occur in other parts of the City as well as the Southside.

Figure 4 Existing Southside Zoning Districts

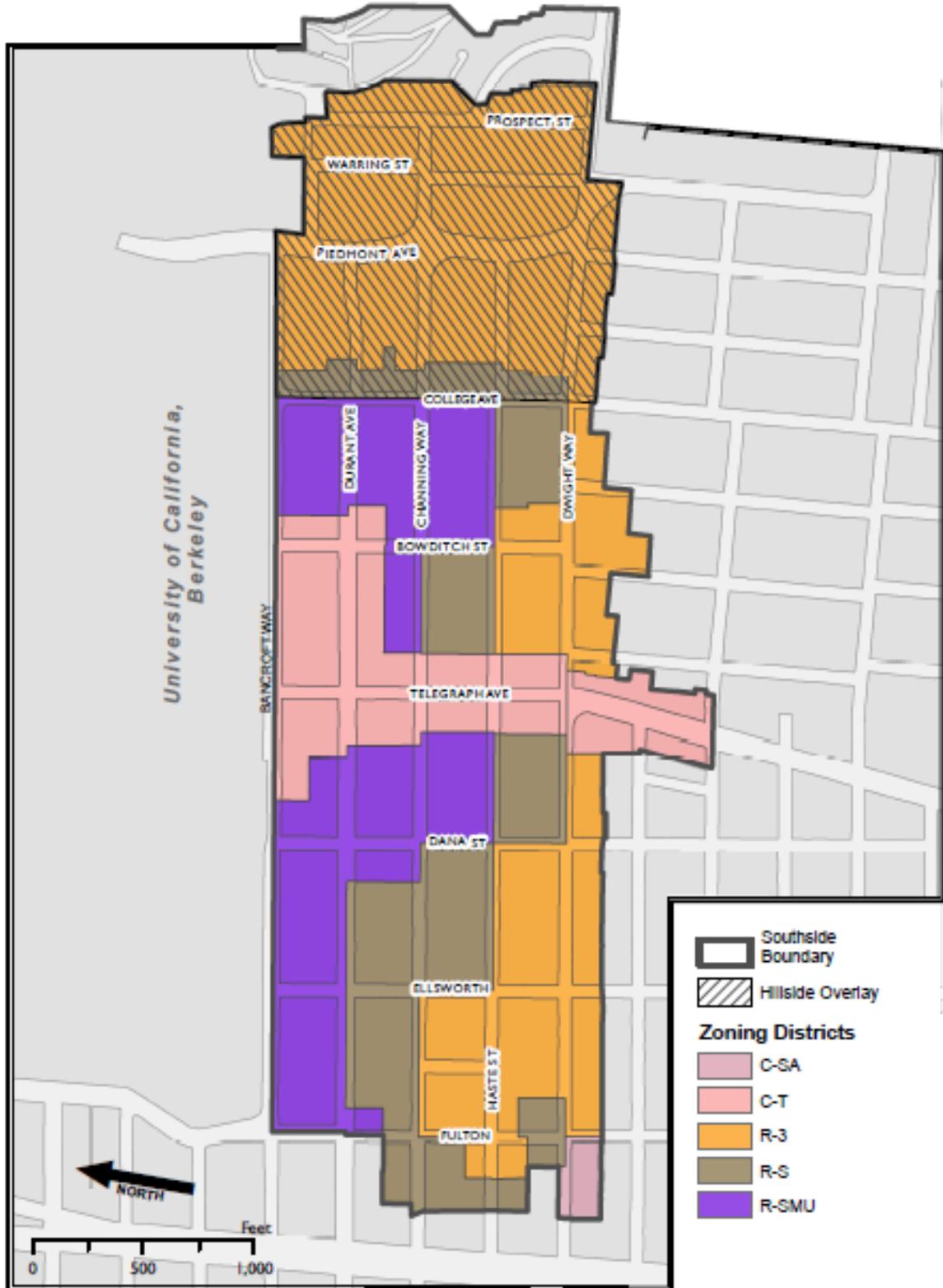


Table 1 Summary of Existing Southside Zoning District Standards

	C-T (north of Dwight)	C-T (south of Dwight)	R-SMU	C-SA	R-S	R-3
General Plan Designation	Avenue Commercial	Avenue Commercial	Residential Mixed Use	Avenue Commercial	High Density Residential	Medium Density Residential
Max Height (stories)	None (assume 6 based on height)	4	4 (5 with UP)	5 if residential, 3 if non-res	3 (4 with UP)	3
Max Height (feet) ¹	65' (75' with UP)	50' (65' with UP)	60' (65' or 75' with UP)	60' if residential; 36' if non-res	35' (45' with UP)	35'
Front Setback	None	None	10' (0' with AUP)	15' (see R-4)	10' (0' with AUP)	15'
Rear Setback	None	None	10' – 19' (0' with AUP)	15'-21' (see R-4)	10' – 17' (can be reduced w/ AUP)	15' (can be reduced w/ AUP)
Side Setback	None	None	4' – 10' (0' with AUP)	4'-12' (see R-4)	4' – 8'	4' – 6'
Side Setback (street)	None	None	6' – 10' (0' with AUP)	6'-15' (see R-4)	6' – 10'	6' – 10'
Max Lot Coverage	100%	100%	40% - 60% (100% with AUP)	40-50% (see R-4)	55% - 70%	40% - 50%
Residential Parking	None required	None required	None required	1 parking space/unit	None required if in Car-Free Housing (C-FH) zone; 1 parking space/unit if not in C-FH zone	1 parking space/unit
Max Residential Density	See R-3 standards. (GLA density can be increased with UP)	See R-3 standards (GLA density can be increased with UP)	175 sf/GLA resident (greater density with UP)	See R-4 Standards (GLA density can be increased with UP)	350 sf/GLA resident (no option to exceed)	350 sf/GLA resident (no option to exceed)
Max FAR	5.0 (6.0 with UP)	4.5	N/A	4.0	N/A	N/A
Min Open Space	40 sf/DU	40 sf/DU	40 sf/DU 20 sf/GLA resident	40sf/DU	50 sf/DU 20 sf/GLA resident	200 sf/DU 90 sf/GLA resident
Ground-floor residential	Not allowed	Not allowed	Allowed	Allowed	Allowed	Allowed

Notes: AUP: Administrative Use Permit; DU: Dwelling Unit; GLA: Group Living Accommodations; UP: Use Permit

¹ Parcels located east of College Avenue are also subject to the Hillside (H) Overlay height standards, which allow for an average maximum height of 35 feet and three stories. These limits can be exceeded with an Administrative Use Permit

6. Project Background

Since 2016, the City Council has forwarded six referrals to the Planning Commission related to increasing housing production and availability in the Southside Area. The six council referrals are show in Table 2.

Table 2 Southside Council Referrals

Date of Referral	Council Referral Description
7/12/16	Allow increased development potential in the Telegraph Commercial (C-T) District between Dwight Avenue and Bancroft Avenue and develop community benefit requirements, with a focus on labor practices and affordable housing.
4/4/17	Create a Use Permit process to allow non-commercial use on the ground floor in appropriate locations, where commercial might otherwise be required. A pilot project is suggested for the C-T District.
5/30/17	Develop a pilot Density Bonus program for the C-T District to generate in-lieu fees that could be used to build housing for homeless and extremely low-income residents.
10/31/17	Facilitate student housing by increasing the height and Floor Area Ratio (FAR) in the portions of the R-SMU, R-S and R-3 District which are located within the Southside Area west of College Avenue.
1/28/18	Convert commercial space in the C-T to residential use, expand the Car-Free Housing overlay in the Southside, allow two (2) 12-story high-rises for student housing, and consider micro-units and modular units.
5/1/18	Convert commercial space into residential use within all districts in the Southside located west of College Avenue.

Responding to these six council referrals – along with City policy goals for increasing the availability and production of housing at all income levels – is the primary impetus for this project to update the zoning requirements in the Southside Area.

7. Project Objectives

Specific topical objectives and scope assumptions for the proposed Zoning Ordinance amendments are as follows:

- **Focus on Zoning and Housing.** Update the Southside zoning standards, particularly as they relate to housing capacity and the six referrals from City Council (listed in Table 2).
- **Encourage Affordable Housing.** Support affordable housing production at a mix of income levels, including housing for students, existing and future residents, and those that may have been displaced or burdened by rising housing costs.
- **Continue to Preserve Important Southside Resources.** Encourage the continued protection and support of important existing Southside resources, including historic buildings, cultural resources, local businesses and merchants, and existing housing – including market rate and rent-controlled housing, and including both renter-occupied and owner-occupied housing.
- **Understand and Coordinate with University Development Plans.** Understand and coordinate with University development plans, recognizing that the City does not have final zoning control over land owned by the University of California, which is controlled by the State of California.
- **Provide Programmatic CEQA Analysis for Future Housing.** Provide programmatic CEQA clearance for future housing development.

- **Address Fire Safety and Disaster Preparedness.** Address continued planning for fire safety and disaster preparedness in the Southside, including coordination with the Fire Department on other citywide disaster preparedness efforts.
- **Encourage Alternatives to Driving.** Encourage walking, biking, transit, ride-sharing, and other alternatives to driving.
- **Align Development Standards with City Housing Goals.** Refine development standards to support City goals for housing availability and production at all income levels.

There are a number of topics for which this process will defer to other laws or processes outside the scope of this effort, including the following specifically:

- Improvements to street and public rights-of-way will be addressed through the Southside Complete Streets effort and other Public Works efforts such as the 5-year Street Paving Plan.
- The City of Berkeley’s JSISHL (Joint Subcommittee for the Implementation of State Housing Law) is currently developing citywide guidance for regulating residential density. The Southside zoning effort will defer to this ongoing citywide process and will not propose changes in these areas.
- State laws related to housing and development – such as State Density Bonus for affordable housing, accessory dwelling units, and objective standards – will continue to apply in the Southside as in other parts of the City.
- City policies and requirements – including for inclusionary housing, required fees, and historic preservation – will continue to apply in the Southside as elsewhere in the City.

8. Proposed Ordinance Modifications

For the purposes of this analysis, the “proposed project” includes the proposed Zoning Ordinance amendments that would apply to the Southside. Table 3 identifies these proposed modifications to the existing zoning ordinance that are intended to achieve the project objectives listed in Section 7 and the City Council referrals described in Section 6. The proposed zoning modifications represent a range of zoning standards, concepts, or intended results that will be studied in this Initial Study and Environmental Impact Report (EIR), and which form the basis for the buildout forecast and assumptions studied in the EIR (Section 9 below).

These proposed zoning modifications are intended to increase housing capacity and production in the Southside through changes in a targeted number of zoning parameters: building heights, building footprints (including setbacks and lot coverage), parking, ground-floor residential use, and adjustments to the existing zoning district boundaries (shown in Figure 5). Focusing on these specific components of zoning is anticipated and intended to expand housing capacity on a limited number of suitable future development sites, as described in Section 9.

Proposed changes are limited to development standards in existing zoning districts within the Southside Area.

Figure 5 Proposed Zoning District Boundary Changes

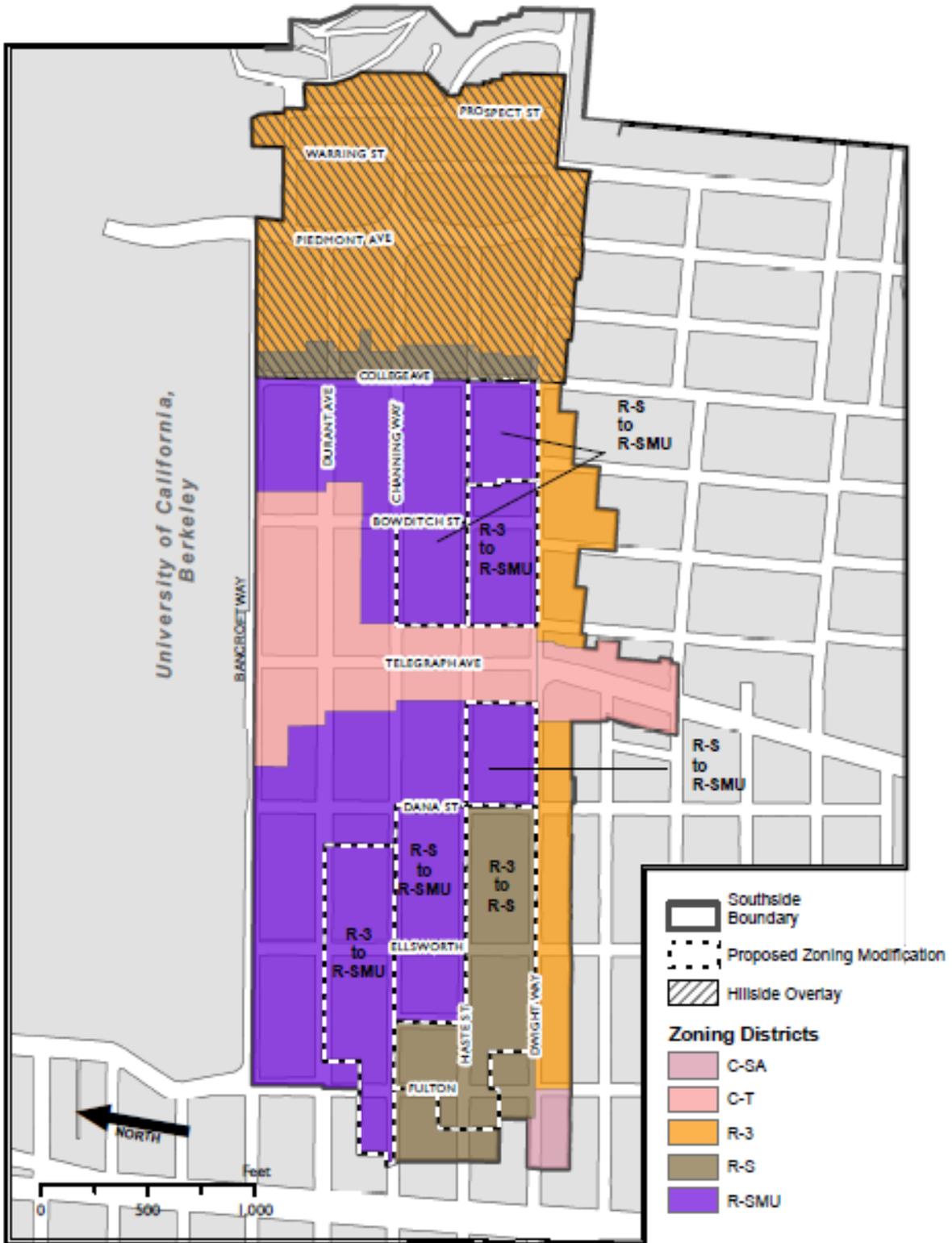


Table 3 Proposed Zoning Ordinance Modifications**Building Height**

Zoning standards for building height are anticipated to be changed in the following ways:

- For all Southside zoning districts, remove the Use Permit option to exceed height limits. Height limits stated in the Zoning Ordinance will be the maximum allowed through local zoning and are not intended to be exceeded through Use Permits.
- Institute building height limits in the Southside Area as follows:
 - Allow up to 65' (6 stories) in R-SMU, and up to 68' if including ground-floor retail (increase from 60', 4 stories)
 - Allow up to 68' (6 stories) in C-T north of Dwight (increase from 65', no stories given)
 - Allow up to 55' (5 stories) in R-S (increase from 35', 3 stories)
 - Allow up to 45' (4 stories) in R-3 within the Southside (increase from 35', 3 stories)
 - No changes for C-SA (60', 5 stories for residential) and C-T south of Dwight (50', 4 stories)
- Include zoning provisions to allow construction of 12-story buildings in the R-SMU and/or C-T (north of Dwight) districts. The Buildout Forecast for the environmental analysis will study construction of 12-story buildings providing up to 503 units in the Southside, within the R-SMU or C-T districts, but the exact zoning tool or provision for enabling these buildings will be determined when zoning is finalized following environmental analysis.

Building Footprint (Setback and Lot Coverage)

Zoning standards for building setbacks and lot coverage are anticipated to be changed in the following ways:

- For all Southside zoning districts, remove specified discretionary review option to modify setbacks and lot coverage.
- Allow 0' front setback by right for R-SMU, R-S, and C-SA (currently already allowed with an AUP in R-SMU and R-S, and by right in C-T).
- Allow 0' street side setbacks (for frontages along side streets) for R-SMU, and R-S.
- Allow 0' side setback by right for non-residential portions of R-SMU buildings.
- Reduce upper-story side setbacks for R-SMU, R-S, R-3 in the Southside.
- Reduce lower-story and upper story rear setbacks for R-SMU, R-S, and R-3 in the Southside.
- Eliminate requirement for shadow studies in C-T.
- Change existing lot coverage requirements as follows:
 - Permit 85% lot coverage in all R-SMU locations by right (increase from current 60% maximum)
 - Permit 75% lot coverage in all R-S locations by right (increase from current 70% maximum)
 - Permit 70% lot coverage in all Southside R-3 locations by right (increase from current 50% maximum)
 - No changes to C-SA locations.

Parking

Zoning standards for parking are anticipated to be changed in the following ways:

- Extend provisions of the Car-Free Housing (C-FH) Zone to all districts found in the Southside including R-3 (within Southside), and all of R-S. C-FH provisions will continue to apply in C-T and R-SMU.
- Adjust the provisions of the Car-Free Housing Zone as follows:
 - Allow removal of parking from existing housing anywhere in the C-FH without a Use Permit (parking for existing housing in the C-FH can currently be removed with a Use Permit).
 - Allow conversion of existing structured parking space into habitable residential or non-residential use anywhere in the C-FH.
- Eliminate all automobile parking minimums in the Southside and allow any new housing to be built with no automobile parking or reduced automobile parking. Institute parking maximums.

Ground-Floor Residential Use

Zoning standards for ground-floor residential use are anticipated to be changed in the following ways:

- Allow ground-floor residential anywhere in C-T if it is located behind an active commercial use, with the commercial use fronting the street.
- In all Southside locations where there is ground-floor residential use, potentially include zoning provisions to incentivize or require ground-floor activation, including features such as:
 - Frequent pedestrian entries, porches, and/or stoops
 - Avoidance of blank walls through use of regular windows, façade details, and massing breaks
 - Active uses like community rooms, lobbies, usable space instead of utilities or parking
 - Other strategies to encourage active, pedestrian-oriented ground-floor residential frontages.

9. Buildout Assumptions

The maximum potential 20-year buildout scenario that may occur with proposed zoning modifications, as described in Table 3, is shown in Table 4. The buildout scenario in Table 4 is based on a housing capacity analysis of the Southside, as described below the table and in further detail in Appendix A, and provides the basis for the CEQA analysis. As shown, the proposed project could result in up to 4,597 new units or 10,344 new residents in the Southside compared to existing conditions. Compared to what would be allowed under existing zoning without use permits, the proposed project could add up to 1,574 units or 3,543 residents. Compared to what would be allowed under existing zoning with use permits (which enable additional building height over base existing zoning), the proposed project could add up to 793 units or 1,784 residents. This analysis also assumes a reduction of up to 130,000 square feet of retail space in the Southside associated with buildout under the Zoning Ordinance amendments. A further description of the existing Southside zoning scenario both with and without the use of use permits and the methodology for calculating the estimated buildout is found in Appendix A.

To develop the estimates in Table 4, the project team surveyed parcels in the Southside and eliminated the following types of sites from consideration for future development:

- UC-owned parcels (i.e., People’s Park)
- Known designated historical resources
- Recent developments (built within the last 10 years; currently entitled; or currently under construction)
- Existing hotels
- Existing occupied religious or cultural institutional buildings, such as churches or student faith organizations that are currently in use (parking lots or vacant structures owned by religious or cultural institutions are considered potential development parcels in the analysis).

Of those remaining, the following types of sites were identified and analyzed for housing capacity if built at a maximum intensity scenario under proposed zoning modifications, as well as a maximum intensity scenario under existing zoning, with totals summarized in Table 4:

- Surface parking lots
- One- and two-story non-historic, non-residential buildings (retail, office, services, restaurant, banks, or other), either occupied or vacant.

Table 4 Maximum Buildout Assumptions Under Proposed and Existing Zoning

	Number of Potential Lots		Total Lot Area Available (square feet)		Estimated Max Units			Estimated Max Beds/People		
	Existing Zoning	Proposed Zoning	Existing Zoning	Proposed Zoning	Existing Zoning	Existing Zoning (with Use Permit)	Proposed Zoning	Existing Zoning	Existing Zoning (with Use Permit)	Proposed Zoning
C-SA	5	5	31,612	31,612	99	99	99	222	222	222
C-T(n)	34	34	225,072	225,072	1,850	2,220	2,035	4,163	4,996	4,580
C-T(s)	6	6	57,913	57,913	286	381	333	643	857	750
R-3	4	1	17,560	7,928	33	33	38	74	74	86
R-S	9	5	89,884	45,547	310	438	296	698	985	665
R-SMU	6	13	58,928	112,896	245	433	993	551	975	2,235
Additional units, 12-story	N/A	N/A	N/A	N/A	N/A	N/A	503	N/A	N/A	1,131
Additional units, existing residential sites	N/A	N/A	N/A	N/A	200	200	300	450	450	675
Total	64	64	480,968	480,968	3,023	3,804	4,597	6,801	8,560	10,344

10. Required Approvals

In order for the proposed Southside Zoning Ordinance amendments to be implemented, they 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 the approvals and actions necessary to adopt and implement the project. Such actions/approvals include:

- **Certification of the EIR.** Certify the Southside Zoning Ordinance Amendments Project EIR and make environmental findings pursuant to CEQA.
- **Amendments to the City of Berkeley Municipal Code.** Amend Municipal Code text and map to include the proposed Southside Zoning Ordinance amendments.
- **Amendments to the Berkeley General Plan.** Amend General Plan text to ensure consistency with the proposed Southside Zoning Ordinance amendments.

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.

11. Have California Native American Tribes Traditionally and Culturally Affiliated with the Project Area Requested Consultation Pursuant to Public Resources Code Section 21080.3.1?

No California Native American Tribes have requested consultation pursuant to Public Resources Code Section 21080.3.1. (See also Section 18, *Tribal Cultural Resources*) at the date of this Initial Study. Subsequent outreach and potential consultation will be discussed in an EIR.

Environmental Factors Potentially Affected

This project would potentially affect the environmental factors checked below, involving at least one impact that is “Potentially Significant” or “Less than Significant with Mitigation Incorporated” as indicated by the checklist on the following pages.

- | | | |
|---------------------------------------------------------------|--------------------------------------------------------------|------------------------------------------------------------------------|
| <input type="checkbox"/> Aesthetics | <input type="checkbox"/> Agriculture and Forestry Resources | <input checked="" type="checkbox"/> Air Quality |
| <input checked="" type="checkbox"/> Biological Resources | <input checked="" type="checkbox"/> Cultural Resources | <input checked="" type="checkbox"/> Energy |
| <input checked="" type="checkbox"/> Geology/Soils | <input checked="" type="checkbox"/> Greenhouse Gas Emissions | <input type="checkbox"/> Hazards and Hazardous Materials |
| <input type="checkbox"/> Hydrology/Water Quality | <input checked="" type="checkbox"/> Land Use/Planning | <input type="checkbox"/> Mineral Resources |
| <input checked="" type="checkbox"/> Noise | <input checked="" type="checkbox"/> Population/Housing | <input checked="" type="checkbox"/> Public Services |
| <input type="checkbox"/> Recreation | <input checked="" type="checkbox"/> Transportation | <input checked="" type="checkbox"/> Tribal Cultural Resources |
| <input checked="" type="checkbox"/> Utilities/Service Systems | <input type="checkbox"/> Wildfire | <input checked="" type="checkbox"/> Mandatory Findings of Significance |

Determination

Based on this initial evaluation:

- I find that the proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.
- I find that although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because revisions to the project have been made by or agreed to by the project proponent. A MITIGATED NEGATIVE DECLARATION will be prepared.
- I find that the proposed project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.
- I find that the proposed project MAY have a “potentially significant impact” or “less than significant with mitigation incorporated” impact on the environment, but at least one effect (1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and (2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed.

- I find that although the proposed project could have a significant effect on the environment, because all potential significant effects (a) have been analyzed adequately in an earlier EIR or NEGATIVE DECLARATION pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier EIR or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the proposed project, nothing further is required.



Signature

Elizabeth Greene

Printed Name

July 22, 2020

Date

Senior Planner

Title

Environmental Checklist

1 Aesthetics

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
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Except as provided in Public Resources Code Section 21099, would the project:

a. Have a substantial adverse effect on a scenic vista?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b. Substantially damage scenic resources, including but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c. In non-urbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings? (Public views are those that are experienced from a publicly accessible vantage point). If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d. Create a new source of substantial light or glare that would adversely affect daytime or nighttime views in the area?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

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 as an area within 0.5 miles of an existing or planned major transit stop. A “major transit stop” is defined in Section 21064.3 of the California Public Resources Code as a rail transit station, a ferry terminal served by either a bus or rail transit service, or the intersection of two or more major bus routes with a frequency of service interval of 15 minutes or less during the morning and afternoon peak commute periods.

The proposed project includes Zoning Ordinance amendments particularly as they relate to housing capacity. A goal of the ordinance revisions is to support housing production at a mix of income levels, including housing for students, existing and future residents, and those that may have been displaced or burdened by rising housing costs. The entire Southside Area is within a transit priority area and as such meets the criteria of SB 743. Alameda-Contra Costa Transit District (AC Transit) bus lines 6 and 51B intersect within the Southside Area and operate at service intervals of 10 minutes

during morning and afternoon peak commute periods. The Downtown Berkeley BART Station, a regional transit facility is located less than 0.5 miles from the Southside, and is served by AC Transit bus lines 6, 7, 18, 36, 51B, 52, 65, 67, 79 and 88, among others. Because implementation of the Zoning Ordinance amendments would result in additional housing at higher density than currently allowed, and 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. The analysis of potential historical resources impacts will be analyzed in an EIR.

2 Agriculture and Forestry Resources

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
Would the project:				
a. Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b. Conflict with existing zoning for agricultural use or a Williamson Act contract?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c. Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code Section 12220(g)); timberland (as defined by Public Resources Code Section 4526); or timberland zoned Timberland Production (as defined by Government Code Section 51104(g))?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d. Result in the loss of forest land or conversion of forest land to non-forest use?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e. Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland to non-agricultural use or conversion of forest land to non-forest use?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Agricultural and Forestry Resources Setting

The Southside 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).

Impact Analysis

- a. *Would the project convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?*
- b. *Would the project conflict with existing zoning for agricultural use or a Williamson Act contract?*
- c. *Would the project conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code Section 12220(g)); timberland (as defined by Public Resources Code Section 4526); or timberland zoned Timberland Production (as defined by Government Code Section 51104(g))?*
- d. *Would the project result in the loss of forest land or conversion of forest land to non-forest use?*
- e. *Would the project involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland to non-agricultural use or conversion of forest land to non-forest use?*

There are no agricultural lands in the Southside or adjacent to the Southside. None of the properties in the Southside or adjacent to the Southside are under a Williamson Act contract. Also, no properties in or adjacent to the Southside 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. Further analysis in an EIR is not warranted.

NO IMPACT

3 Air Quality

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

Air Quality Setting

Air Quality Standards and Attainment

The Southside Area is in the San Francisco Bay Area Air Basin (SFBAAB) and is under the jurisdiction of Bay Area Air Quality Management District (BAAQMD). Air quality in the SFBAAB is affected by the emission sources located in the region, as well as by natural factors. Atmospheric conditions such as wind speed and direction, air temperature gradients, and local and regional topography influence air quality.

Local air districts and the California Air Resources Board (CARB) monitor ambient air quality to assure that air quality standards are met, and if they are not met, to also develop strategies to meet the standards. In the Bay Area, air quality monitoring stations operated by the BAAQMD measure pollutant ground-level concentrations. Depending on whether the standards are met or exceeded, the SFBAAB is classified as being in “attainment” or “nonattainment.” Under state law, air districts are required to prepare a plan for air quality improvement for pollutants for which the district is in non-compliance. As of 2017, the SFBAAB is in nonattainment for federal standards for ozone and particulate matter (PM_{2.5}) (BAAQMD 2017a). The SFBAAB is in nonattainment for state standard for ozone and particulate matter (PM₁₀ and PM_{2.5}). The health effects associated with criteria pollutants for which the SFBAAB is in nonattainment are described in Table 5.

Table 5 Health Effects Associated with Non-Attainment Criteria Pollutants

Pollutant	Adverse Effects
Ozone	(1) Short-term exposures: (a) pulmonary function decrements and localized lung edema in humans and animals and (b) risk to public health implied by alterations in pulmonary morphology and host defense in animals; (2) long-term exposures: risk to public health implied by altered connective tissue metabolism and altered pulmonary morphology in animals after long-term exposures and pulmonary function decrements in chronically exposed humans; (3) vegetation damage; and (4) property damage.
Suspended particulate matter (PM ₁₀)	(1) Excess deaths from short-term and long-term exposures; (2) excess seasonal declines in pulmonary function, especially in children; (3) asthma exacerbation and possibly induction; (4) adverse birth outcomes including low birth weight; (5) increased infant mortality; (6) increased respiratory symptoms in children such as cough and bronchitis; and (7) increased hospitalization for both cardiovascular and respiratory disease (including asthma). ^a
Suspended particulate matter (PM _{2.5})	(1) Excess deaths from short- and long-term exposures; (2) excess seasonal declines in pulmonary function, especially in children; (3) asthma exacerbation and possibly induction; (4) adverse birth outcomes, including low birth weight; (5) increased infant mortality; (6) increased respiratory symptoms in children, such as cough and bronchitis; and (7) increased hospitalization for both cardiovascular and respiratory disease, including asthma. ^a

^a More detailed discussions on the health effects associated with exposure to suspended particulate matter can be found in the following documents: EPA, Air Quality Criteria for Particulate Matter, October 2004.

Source: U.S. EPA, <http://www.epa.gov/airquality/urbanair/>

Sensitive Receptors

Sensitive receptors that are in proximity to localized sources of particulate matter, toxics, and carbon monoxide are of particular concern. Locations that may contain a high concentration of these sensitive population groups include residential areas, hospitals, daycare facilities, elder care facilities, elementary schools, and parks. The most common existing land use in the Southside is residential, which currently occupies approximately 60 percent of the developable land in the Southside (excluding streets). In addition, the Southside contains park and recreational uses. Sensitive receptors in the Southside include these residential and park uses.

Impact Analysis

- a. *Would the project conflict with or obstruct implementation of the applicable air quality plan?*
- b. *Would the project result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard?*
- c. *Would the project expose sensitive receptors to substantial pollutant concentrations?*

The most recently adopted air quality plan in the SFBAAB is the 2017 Clean Air Plan (“2017 Plan”) (BAAQMD 2017b). 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. 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.

Emissions generated by development facilitated under the Zoning Ordinance amendments would include temporary construction emissions and long-term operational emissions. Construction activities such as the operation of construction vehicles and equipment over unpaved areas, grading, trenching, and disturbance of stockpiled soils have the potential to generate fugitive dust (PM₁₀) through the exposure of soil to wind erosion and dust entrainment. In addition, exhaust emissions associated with heavy construction equipment would potentially degrade air quality. Emissions could exceed BAAQMD significance thresholds and could expose nearby sensitive receptors to pollution.

Long-term emissions associated with operational impacts would include emissions from vehicle trips, electricity use, landscape maintenance equipment, and consumer products and architectural coating associated with onsite development. Emissions could exceed BAAQMD significance thresholds and could expose nearby sensitive receptors to pollution.

Impacts are potentially significant and will be analyzed in an EIR.

POTENTIALLY SIGNIFICANT IMPACT

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

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 Southside does not include such uses and such uses would not be facilitated by the proposed project. Odor emissions from the proposed project would be limited to those associated with new residential uses such as vehicle and engine exhaust and idling. During construction activities, only temporary odors from vehicle exhaust and construction equipment engines would occur. Construction-related odors would cease upon completion. The project also would not result in the generation of other emissions that could adversely affect air quality. Restaurant uses have the potential to generate odors in the form of smells associated with cooking and preparing food. However, restaurant uses are not considered substantial odor generators per the BAAQMD's CEQA Guidelines. Should restaurant odor complaints occur, the City's Environmental Health Department would be responsible for managing and remedying the complaint. Overall, the proposed Zoning Ordinance amendments would not result in significant impacts related to objectionable odors or other emissions during construction or operation, and this impact would be less than significant. Further analysis in an EIR is not warranted.

LESS THAN SIGNIFICANT IMPACT

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4 Biological Resources

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
Would the project:				
a. Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b. Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c. Have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d. Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
e. Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
f. Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Biological Resources Setting

a. Habitats

The Southside is highly 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], 2020a; Mayer and Laudenslayer, 1988). As such, vegetation is limited largely to landscaping in commercial areas, residential neighborhoods, and in People’s Park. Many large mature landscaping and street trees are scattered throughout the Southside. 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*).

b. Waterways and Drainages

There are no mapped or designated federally or State protected wetlands within the Southside (U.S. Fish and Wildlife Service [USFWS] 2020a). The Southside 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 in the Southside, as the surrounding vicinity is highly urbanized and developed. Underground water drainages and culverts are the only water courses or water bodies in the Southside Area. Figure 10 in Section 10, *Hydrology and Water Quality*, shows stormwater, drainage, and creeks in and around the Southside.

c. Special Status Biological Resources

For the purpose of this analysis, 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 2020b), USFWS Critical Habitat Portal (USFWS 2020c), California Natural Diversity Database (CNDDDB) (CDFW 2020a), and California Native Plant Society (CNPS) *Online Inventory of Rare and Endangered Plants of California* (CNPS 2020) 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 Southside.

Sensitive Communities and Critical Habitat

No natural communities considered sensitive by the CDFW occur in the Southside, but the CNDDDB lists two sensitive natural communities that occur within a 5-mile radius of the Southside. Federally designated critical habitat for one species also occurs within a 5-mile radius of the Southside. Table 6 lists these sensitive communities and critical habitat.

Table 6 Sensitive Communities and Critical Habitats Documented within a Five-mile Radius of the Southside

Communities Considered Sensitive by the CDFW
Northern Coastal Salt Marsh
Northern Maritime Chaparral
Critical Habitat
Alameda Whipsnake (<i>Masticophis lateralis</i>)
Source: CNDDDB (CDFW 2020a); Critical Habitat Portal (USFWS 2020c)

Northern Coastal Salt Marsh is located approximately three miles southwest of the Southside in the Mclaughlin Eastshore State Park at the interchange of I-580 and I-80 just west of Emeryville. Northern Maritime Chaparral is located approximately 4.5 miles northeast of the southside on the southern shoreline of Briones Reservoir (CDFW 2020a). Critical habitat for Alameda whipsnake occurs approximately 0.4 mile east of the eastern boundary of the Southside (USFWS 2020c).

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 USFWS IPaC (2020b), CNDDDB (CDFW 2020b), and CNPS (2020) 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*). Strictly marine, estuarine, and aquatic species were excluded from further analysis given the upland terrestrial nature of the Southside. Plant species with specific habitat requirements not present in the Southside such as vernal pools, alkali or serpentine soils, or higher elevation ranges were also excluded from this analysis. The results of these scientific database queries were compiled into Table B-1 and Table B-2 included in Appendix B. A total of 80 special status plants and 44 special status animals were identified by these queries. Of those, 58 have known occurrences within a 5-mile radius of the Southside Area. Many of

these species have sensitivity ratings below the CEQA threshold for significant impacts from development in urban settings such as the Southside Area. Five special status animal species are known to occur within the or in the immediate vicinity. Special status animal species include:

Western Bumble Bee

Western bumble bee (*Bombus occidentalis*) is a state candidate for listing (Endangered). The historic range of this species covered much of the western United States, from the Pacific coast to the Colorado Rocky Mountains. This species has a wide variety of plant associations, including but not limited to, species in the genera: *Melilotus*, *Cirsium*, *Trifolium*, *Centaurea*, *Chrysothamnus*, and *Eriogonum* (Koch, Strange, and Williams, 2012). There is one known occurrence with a range loosely overlapping the Southside Area.

American Peregrine Falcon

The American peregrine falcon (*Falco peregrinus anatum*) is a CDFW Fully Protected species. The American peregrine falcon typically occurs near wetlands, lakes, rivers, or other water; on cliffs, banks, dunes, or mounds, although they can also use human-made structures for nesting or perching. There is one known occurrence with a range that loosely overlaps the eastern boundary of the Southside Area at Panoramic Way.

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. There is one known occurrence with a range loosely overlapping the Southside Area.

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. There is one known occurrence with a range loosely overlapping the Southside Area.

Townsend's big-eared bat

The Townsend's big-eared bat (*Corynorhinus townsendii*) is a CDFW Species of Special Concern in the Vespertilionidae. This species is found throughout California in a wide variety of habitats, most commonly in mesic sites. This species is found in all but subalpine and alpine habitats and may be found at any season throughout its range (Zeiner et al. 1990). Day and night roosts for these species can include open buildings with deep cover to protect bats from high temperatures. The Townsend's big-eared bat has an occurrence record in the Southside Area.

a. 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 at the eastern boundary of the Southside Area (CDFW 2020b). 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 this connectivity area become increasingly less permeable as they extend toward Berkeley and developed areas of Alameda County. Although the Southside Area is at the edge of an ECA, given the highly urbanized nature of the area, it does not function as wildlife connectivity or movement area, even on a local scale.

b. Regulatory Setting

Federal, State, and local authorities share regulatory authority over biological resources under a variety of statutes and guidelines.

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.

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 (CFG Code 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) (CFG Code 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.

Local

City of Berkeley 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 (City of Berkeley 2001b). 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.

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

City of Berkeley Oak 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.

Impact Analysis

- a. *Would the project have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?*

For this analysis, special status plant and animal species include those described under *Special Status Plant and Animal Species*, above. Because the proposed Zoning Ordinance amendments do not include specific development projects, a precise, project-level analysis of the specific impacts of individual development projects on special-status species is not included in this Initial Study. Nonetheless, as the Southside lacks habitat and native vegetation, special status species are not anticipated to be encountered. Development that could result from the Zoning Ordinance amendments could introduce structures of greater height and density compared to current conditions, but such development would occur on properties that are already developed with urban uses. New development facilitated under the project would not differ substantially from the urban development already in the Southside in regard to implications for biological resources. Development facilitated by the proposed project would occur in existing urbanized areas and would not involve construction in environmentally sensitive areas, which are absent in the Southside.

Trees and other vegetation in the Southside may support species of nesting migratory birds protected under California Fish and Game Code (CFGC) or special status species such as the American peregrine falcon (Fully Protected). Therefore, impacts to nesting special status birds and non-special status migratory birds could occur. However, development projects that require a use permit are required to comply with the following standard condition of approval that addresses these potential impacts:

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.

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.

As mentioned above and presented in Table B-1 and Table B-2 in Appendix B, 44 special status animals and 80 special status plants are known to or have potential to occur in the vicinity of the Southside. Of these, 39 (19 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 Southside Area is highly urbanized and developed, most special status species do not occur in the Southside 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. As discussed above, five special status animal species have been recorded within the Southside Area, and have low potential to occur.

Impacts to western bumble bee may occur if a colony is present in undeveloped areas. However, no impacts to previously undisturbed areas would occur, as all work would take place on previously developed sites. Nonetheless, foraging individuals within the Southside Area could be injured or killed during construction. Additionally, special-status bat species have some potential to occur throughout the Southside 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, impacts to these species are potentially significant and mitigation is required.

Mitigation Measures

The following mitigation measures are required.

BIO-1 Worker Environmental Awareness Program

Prior to initiation of construction activities (including staging and mobilization), all personnel associated with project construction shall attend a Worker Environmental Awareness Program (WEAP) training, conducted by a qualified biologist, to aid workers in recognizing special status resources that may occur in the construction area. The specifics of this program shall include identification of the sensitive species and habitats, a description of the regulatory status and general ecological characteristics of sensitive resources, and review of the limits of construction and mitigation measures required to reduce impacts to biological resources within the work area. A fact sheet conveying this information shall also be prepared for distribution to all contractors, their employers, and other personnel involved with construction. All construction employees shall sign a form provided by the trainer indicating they have attended the WEAP and understand the information presented to them. The form shall be submitted to the City to document compliance.

BIO-2 Special-status Bat Species Avoidance and Minimization

For projects in the Southside Area that involve demolition of uninhabited buildings or removal of mature trees large enough to contain crevices and hollows that could support bat roosting, focused surveys to determine the presence/absence of roosting bats shall be conducted prior to demolition

or tree removal. 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 Measures BIO-1 and 2, impacts to special species associated with future development in the Southside under the proposed project would be avoided. This impact would be less than significant. Mitigation measures BIO-1 and BIO-2 will be included in the EIR's executive summary and mitigation monitoring and reporting program. Further analysis of this issue in an EIR is not warranted.

LESS THAN SIGNIFICANT WITH MITIGATION INCORPORATED

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

As noted above, no natural communities considered sensitive by the CDFW occur in the Southside. Two sensitive natural community types occur within a five-mile radius of the Southside. Two occurrences of Northern Coastal Salt Marsh are located approximately 3.3 miles to the southwest and 3.8 miles to the northwest, and two occurrences of Northern Maritime Chaparral are located approximately four miles to the southeast and five miles to the northeast of the Southside. These sensitive natural communities would not be affected by the proposed project due to their respective distances from the Southside. Because no sensitive or riparian habitats are expected to occur in the Southside, no impacts are expected. Although trees and vegetation that occur in the Southside 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. Further analysis in an EIR is not warranted.

LESS THAN SIGNIFICANT IMPACT

- c. *Would the project have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?*

There are no mapped or designated federally protected wetlands in the Southside (USFWS 2020a). Some underground drainage culverts may intersect the Southside; however, these are not federally protected and therefore are not subject to USACE jurisdiction. Due to the developed nature of the Southside, there would not be potential for impacts to protected wetlands and as such there would be no impact. Further analysis in an EIR is not warranted.

NO IMPACT

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

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 Southside. Impacts to the movement of wildlife would be less than significant. Further analysis in an EIR is not warranted.

LESS THAN SIGNIFICANT IMPACT

- e. *Would the project conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?*

Projects implemented as a result of the proposed Zoning Ordinance amendments 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. Ongoing 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 Southside would be required to adhere to the Tree Ordinance. The proposed project does not include components 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. Further analysis in an EIR is not warranted.

LESS THAN SIGNIFICANT IMPACT

- f. *Would the project conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?*

There are no habitat conservation plans or natural community conservation plans adopted in the Southside. Therefore, development facilitated by the proposed project would not conflict with such plans and no impact would occur. Further analysis in an EIR is not warranted.

NO IMPACT

5 Cultural Resources

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
Would the project:				
a. Cause a substantial adverse change in the significance of a historical resource pursuant to §15064.5?	■	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b. Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?	■	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c. Disturb any human remains, including those interred outside of formal cemeteries?	■	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Cultural Resources Setting

The California Environmental Quality Act (CEQA) requires a lead agency determine whether a project may have a significant effect on historical resources (Public Resources Code [PRC], Section 21084.1) 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), a resource included in a local register of historical resources, or any object, building, structure, site, area, place, record, or manuscript that a lead agency determines to be historically significant (State CEQA Guidelines, Section 15064.5[a][1-3]).

A resource is considered historically significant if it:

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

In addition, if it can be demonstrated that a project would cause damage to a unique archaeological resource, the lead agency may require reasonable efforts be made 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]).

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

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

Impact Analysis

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

The proposed project would allow increased development potential in the Southside. Construction activities associated with future projects could involve partial or complete demolition of buildings that are historical resources or projects adjacent to known historical resources. Therefore, the proposed project may result in a substantial adverse change in the significance of a historical resource. Impacts related to historic resources are potentially significant and will be analyzed further in an EIR.

POTENTIALLY SIGNIFICANT IMPACT

- b. Would the project cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?*
- c. Would the project disturb any human remains, including those interred outside of formal cemeteries?*

Construction activities related to future development facilitated under the proposed project could involve ground disturbance below the level of previous ground disturbance in the Southside Area. Therefore, there is a potential for discovery of archeological resources or human remains during construction. These impacts are potentially significant and will be discussed further in an EIR.

POTENTIALLY SIGNIFICANT IMPACT

6 Energy

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
Would the project:				
a. Result in a potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?	■	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b. Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?	■	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Energy Setting

California is one of the lowest per capita energy users in the United States with a per capita total consumption of 200 million British thermal units (Btu), ranked 48th in the nation, due to its energy efficiency programs and mild climate (U.S. Energy Information Administration [EIA] 2020). California generated 194,842 gigawatt-hours (GWh) of electricity in 2018 (California Energy Commission [CEC] 2019). In 2017, the most recent year of data provided by the EIA, the single largest end-use sector for energy consumption in California is transportation (40 percent), followed by industry (23 percent), commercial (19 percent), and residential (18 percent) (EIA 2018b). California’s transportation sector consumed 3,175 trillion Btu of motor gasoline (EIA 2020).

Electricity service in the City of Berkeley is provided by Pacific Gas & Electric (PG&E) or East Bay Community Energy (EBCE) and natural gas service is provided by 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 2020a). In 2018, PG&E’s power mix included 39 percent renewable energy sources (PG&E 2020b). EBCE pools the electric load of participating municipal, commercial, and residential accounts for the purpose of purchasing electricity from renewable sources such as solar and wind (EBCE 2020). EBCE has three electricity service options, all of which provide at least 5 percent more renewable energy than PG&E’s power mix.

Impact Analysis

- a. *Would the project result in a potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?*
- b. *Would the project conflict with or obstruct a state or local plan for renewable energy or energy efficiency?*

Development facilitated by the proposed Zoning Ordinance amendments 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 potential increase in vehicle trips associated with development would increase fuel consumption. Overall, the proposed project could result in wasteful, inefficient, or unnecessary consumption of energy resources or could conflict with local or state plans for renewable energy or energy efficiency. Impacts are potentially significant and will be analyzed further in an EIR.

POTENTIALLY SIGNIFICANT IMPACT

7 Geology and Soils

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
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Would the project:

a. Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:				
1. Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
2. Strong seismic ground shaking?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
3. Seismic-related ground failure, including liquefaction?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
4. Landslides?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b. Result in substantial soil erosion or the loss of topsoil?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c. 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?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d. Be located on expansive soil, as defined in Table 1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
e. Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
f. Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Geologic Setting

a. Regional and Local Geology

Berkeley is situated 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 Webb 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 Complex, marine and nonmarine sedimentary rock of the Cretaceous Great Valley Complex, and Cenozoic marine and nonmarine shale, sandstone, and conglomerate (Norris and Webb 1990).

Specifically, 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 Barberry 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 2001b; Elevation.maplogs.com 2018).

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).

As mapped by the U.S. Department of Agriculture (USDA), Natural Resource Conservation Service (NRCS), the Southside Area features two soil types (USDA 2017). The Southside Area is made up primarily of Tierra complex slopes (Map Unit 150) that have from two to five percent slopes. The portion of the Southside Area east of Piedmont Avenue is composed of Tierra complex slopes (Map Unit 151) that have five to fifteen percent slopes. Soils in the Tierra complex present a high rate of surface runoff and high shrink-swell potential (USDA 2017, USDA 1981).

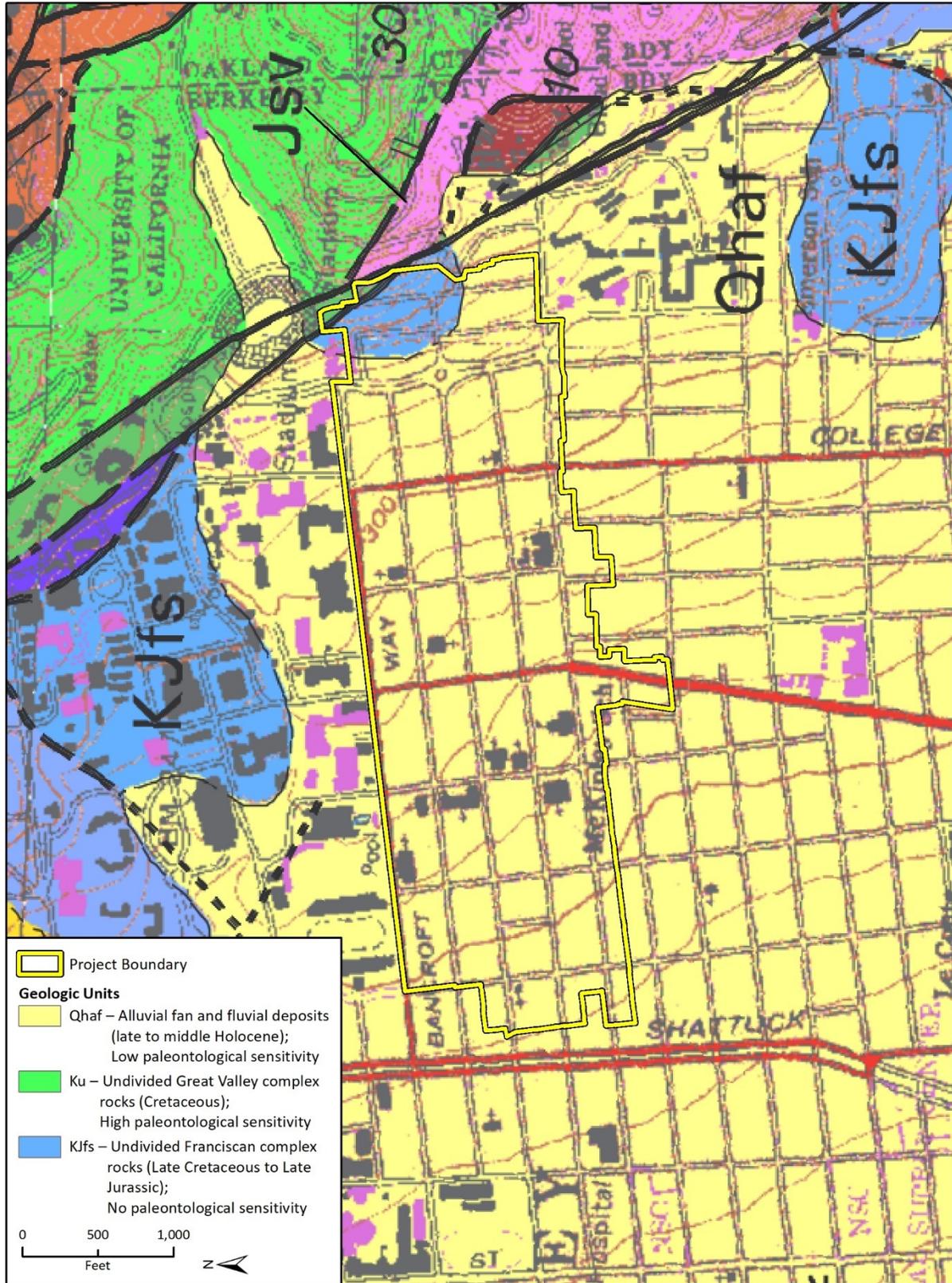
b. Paleontological Setting

The Southside Area includes three geologic units mapped at the surface: late to middle Holocene alluvial fan and fluvial deposits (Qh_{af}), Cretaceous rocks from the Great Valley Complex (Ku), and Late Cretaceous to Late Jurassic metasedimentary rocks from the Franciscan Complex (KJfs) (Graymer 2000). Figure 6 depicts the geologic units underlying the Southside Area and the immediate vicinity.

Late to middle Holocene alluvial fan and fluvial deposits (Qh_{af}) are mapped throughout most of the Southside Area, consisting of medium dense to dense, gravelly sand or sandy gravel of valleys and stream channels.

Cretaceous rocks from the Great Valley Complex (Ku), mapped in in the northeast portion of the Southside Area, consist of sandstone, siltstone, shale, and minor conglomerate (Graymer 2000). According to geologic mapping by Dibblee and Minch (2005), this unit is locally divided into the Panoche Formation (Kp), which consists of a dark brownish gray, bedded, and micaceous clay shale with interbedded olive brown, fine-grained graywacke, sandstone, and dolomite.

Figure 6 Geologic Units Underlying the Southside Area



Geologic basemap provided by R.W. Graymer, 2000, Geologic map and map database of the Oakland metropolitan area, Alameda, Contra Costa, and San Francisco Counties, California: U.S. Geological Survey Miscellaneous Field Studies MF-2342

Metasedimentary rocks of the Late Cretaceous to Late Jurassic Franciscan Complex (KJfs), mapped in the eastern project area, consist of submetamorphosed eugeosynclinal marine sedimentary and mafic igneous rocks, including dark gray to black metabasalt greenstone.

c. Seismic Hazards

Similar to much of California, the Southside Area is located in a seismically active region. 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. As shown in Figure 7, several faults are within and near the Southside Area. These major faults and fault zones include:

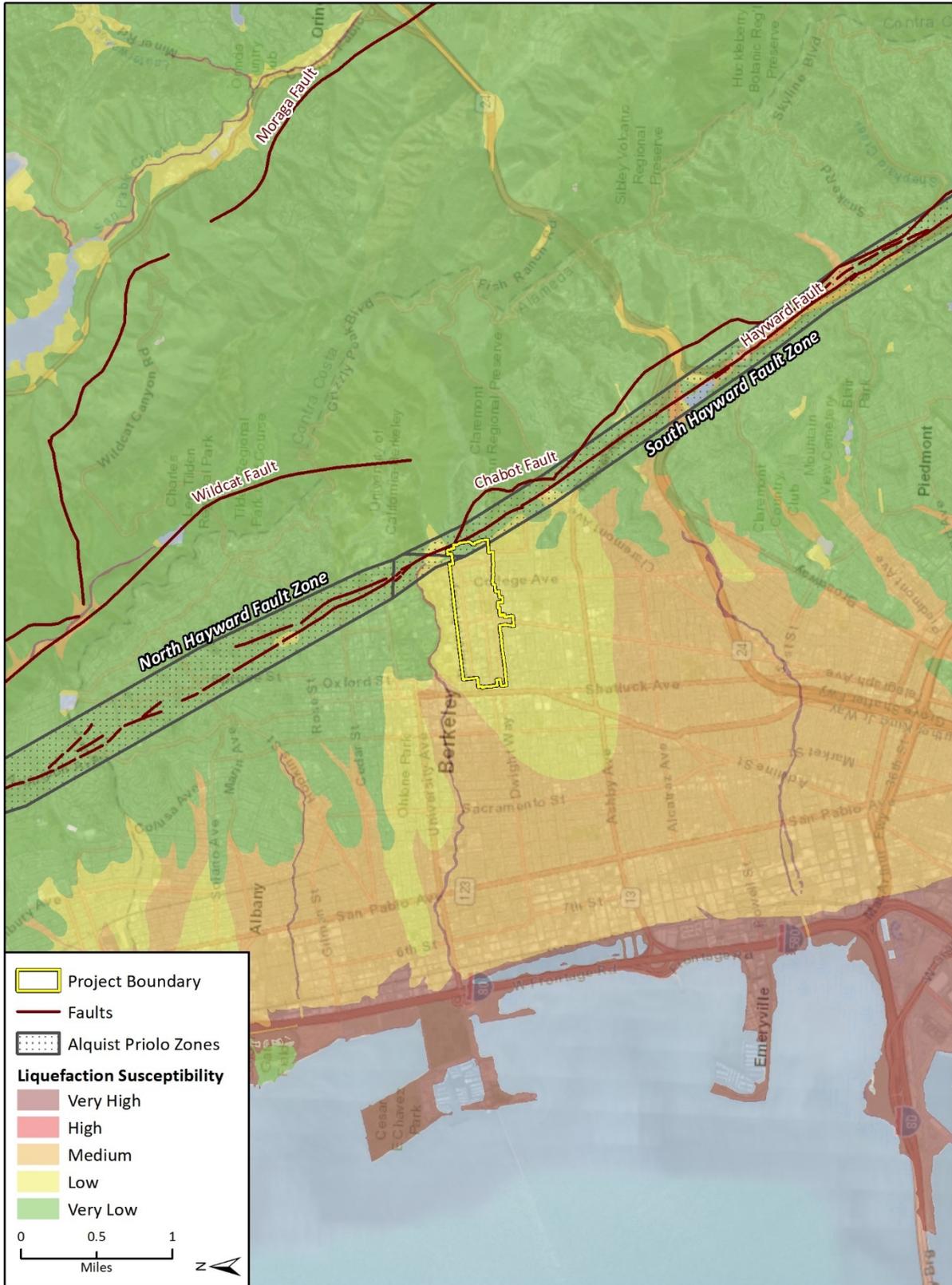
- **The San Andreas Fault**, the most likely source of a major earthquake in California, is located approximately 15 miles west of Berkeley. The San Andreas Fault is the primary surface boundary between the Pacific and the North American plates. There have been numerous historic earthquakes along the 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.
- **The Hayward Fault**, one of ten major faults that make up the San Andreas Fault Zone, runs east of the Southside 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 Southside area due to its close proximity to urban communities and infrastructure. The Hayward Fault and surrounding area is a designated Alquist-Priolo Zone. As shown in Figure 7, the Hayward Fault crosses through the Southside Area at its eastern edge.
- **Other active faults** near the Southside 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 Southside Area are ground shaking, liquefaction, and settlement (City of Berkeley 2001c).

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 Southside Area assumes a 6.9 magnitude earthquake on the Hayward Fault

Figure 7 Southside Area Fault Lines and Liquefaction Susceptibility



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

system. The predicted ground-shaking from such an earthquake would be “very violent” or “violent” throughout the Southside (ABAG 2016).

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. 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 Southside Area (City of Berkeley 2001c). As Figure 7 shows, the Southside includes areas identified as having very low to low susceptibility to liquefaction.

Seismically induced settlement occurs in loose to medium dense unconsolidated soil above groundwater. These soils compress (settle) when subject to seismic shaking. The settlement can be exacerbated by increased loading, such as from the construction of buildings. Settlement can also result solely from human activities including improperly placed artificial fill, and structures built on soils or bedrock materials with differential settlement rates.

Landslides

Landslides result when the driving forces that act on a slope (i.e., the weight of the slope material, and the weight of objects placed on it) are greater than the slope’s natural resisting forces (i.e., the shear strength of the slope material). Slope instability may result from natural processes, such as the erosion of the toe of a slope by a stream, or by ground shaking caused by an earthquake. Slopes can also be modified artificially by grading, or by the addition of water or structures to a slope. Development that occurs on a slope can substantially increase the frequency and extent of potential slope stability hazards.

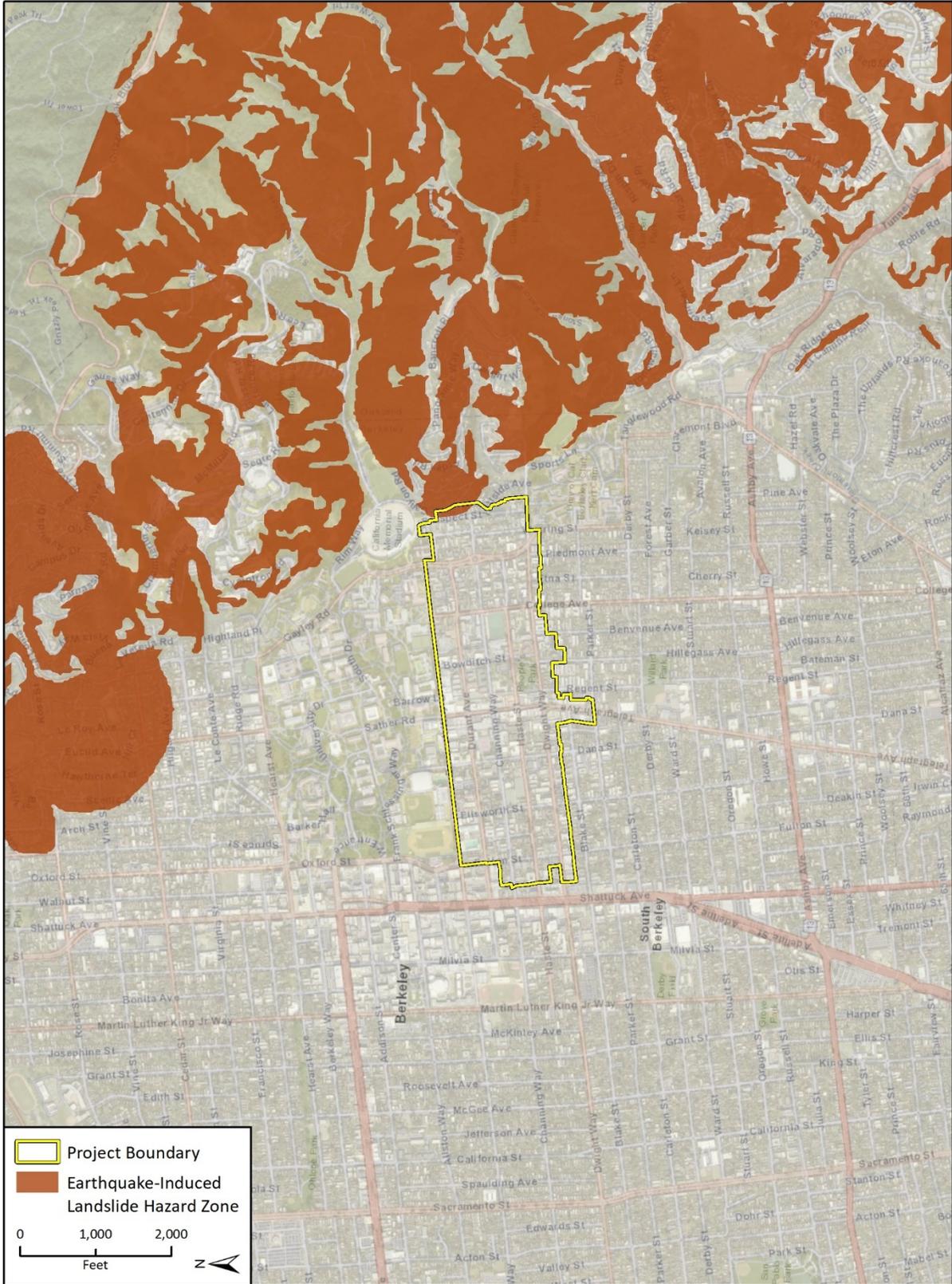
Areas susceptible to landslides are typically characterized by steep, unstable slopes in weak soil/bedrock units which have a record of previous slope failure. There are numerous factors that affect the stability of the slope, including: slope height and steepness, type of materials, material strength, structural geologic relationships, ground water level, and level of seismic shaking.

According to the Disaster Preparedness and Safety Element of the City of Berkeley General Plan (City of Berkeley 2001c), landslide risk is low throughout the majority of Berkeley. However, localized areas of instability exist throughout the Berkeley Hills. Figure 8 shows identified landslide hazard zones in relation to the Southside. While most of the area is generally flat, its eastern portion is located in the hills and is located at the western edge of the Earthquake Induced Landslide Zone.

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 moistures 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

Figure 8 Southside Area Landslide Susceptibility



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Additional data provided by CGS, 2016.

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. The USGS has mapped soils in the Southside Area as having high potential for shrink-swell (USDA 2017, USDA 1981).

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.

d. Regulatory Setting

State Geologic Hazards

City of Berkeley Building Codes

The California Building Standards, Title 24, Part 2 as adopted by the City of Berkeley provides building codes and standards for the design and construction of structures in the City of Berkeley. It requires, among other things, seismically resistant construction and foundations and 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 City of Berkeley Building Codes within the Southside.

The referenced codes and standards include requirements for evaluations of geologic conditions at a project site and design and construction standards to address geologic hazards. Geotechnical investigations are performed to identify the geologic conditions at a site and to evaluate whether a proposed project is feasible given the existing geological conditions. The Geotechnical report must be completed by a California licensed professional and must provide recommendations for foundation and structural design to address any geologic hazards. Such reports are required under the following conditions:

- New structures designed under the California Building Code in accordance with CBC 1803.5.11 and CBC 1803.5.12.
- New structures designed under the California Residential Code and located in a seismic hazard zone in accordance with CRC R401.4. This requirement does not apply to new accessory structures including utility sheds, garages and accessory dwelling units.
- New structures within a delineated earthquake fault zone:
 - A single-family wood-frame or steel-frame dwelling exceeding two stories or when any dwelling is part of a development of four or more dwellings. Public Resources Code Chapter 7.5
 - Multi-family and commercial of any kind.
 - Alterations or additions to any structure within a seismic hazard zone which exceed either 50 percent of the value of the structure or 50 percent of the existing floor area of the structure. Public Resources Code Chapter 7.8
- In accordance with CBC 1803.5.2 and CRC R401.4.1 where design values exceed the presumptive values or the classification, strength or compressibility of the soil is in doubt.

- Where deep foundations will be used, a geotechnical investigation shall be conducted in accordance with CBC 1803.5.5.
- For new structures assigned to Seismic Design Category C, D, E or F, a geotechnical investigation shall be conducted in accordance with CBC 1803.5.11

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. As described above under *Geologic Setting*, several faults are within and near the Southside.

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.”

State Paleontological Resources

California Environmental Quality Act

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.

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

The following policies 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.

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 new and existing buildings.

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.

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

Impact Analysis

- a.1. *Would the project directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving 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?*
- a.2. *Would the project directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving strong seismic ground shaking?*

The Southside 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 along the eastern edge of the Southside Area. The Hayward fault system near the Southside 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 Southside, regardless of development proposed under the Zoning Ordinance amendments. The area is currently developed and populated. Implementation of the proposed project would increase population and structural development in the area that would be exposed to these hazards.

However, several applicable laws, regulations, and policies would reduce hazards related to rupture and seismic ground shaking. Under the Alquist-Priolo Earthquake Fault Zone Act, development of a building for human occupancy is generally restricted within 50 feet of an identified fault. This restriction would not completely remove such a structure from potential damage if a major seismic event were to occur along the identified fault, but it would minimize potential for habitable structures to receive the most direct damage potentially associated with a major seismic event.

The proposed project 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 Southside 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. As described in the *Regulatory Setting* section above, the City of Berkeley Building Codes includes requirements for foundation and structural design to resist seismic hazards. In addition, the Building Codes outlines specific instances of when geotechnical investigations are required based on soil conditions and proposed construction methods, including for any project within Earthquake Fault Zones or Seismic Hazard Zones. New projects in the Southside would be reviewed by the Building and Safety Division during the normal plan review process to confirm that the necessary geotechnical investigations are completed and that the structural design of the project is consistent with design measures recommended in the Geological report prior to issuance of required building permits. The City would therefore ensure that development occurring in the Southside would be designed and constructed consistent with the current City of Berkeley Building Codes and with the findings and recommendations of the site-specific geotechnical reports to effectively minimize or avoid potential hazards associated with redevelopment and/or new building construction. Proper engineering, including compliance with the City of Berkeley Building Codes, would minimize the risk to life and property associated with potential seismic activity in the area. Impacts related to fault rupture and seismic shaking would be less than significant with no mitigation required. Further analysis in an EIR is not required.

LESS THAN SIGNIFICANT IMPACT

- a.3. *Would the project directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving seismic-related ground failure, including liquefaction?*
- c. *Would the project 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?*

As Figure 7 shows, the Southside Area is located in areas of Low to Very Low liquefaction hazard potential. The Southside does not contain areas identified as having Medium or High liquefaction potential. Therefore, potential development under the proposed project would not directly or indirectly cause the risk of loss, injury or death related to liquefaction.

However, as described in the Setting Section above, the soils in the Southside have been identified as potentially unstable and having high potential for shrink-swell. Therefore, implementation of the proposed amendments could result in new development on unstable soils. 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 investigations would be required for individual development projects within the portions of the Southside susceptible to seismic-related ground failure to identify the degree of potential hazards, design parameters for the project based on the hazard, and describe appropriate design measures to address hazards. These geotechnical studies

customarily include recommendations for foundation design, as well as soil improvement techniques, both of which help mitigate these unstable soils.

In addition, projects that require discretionary approval would be reviewed for their compliance with General Plan policies, including *Policy S-13A: Hazards Identification and Policy S-14B: Land Use Regulation* of the City's General Plan Disaster Preparedness and Safety Element. Future development in the Southside and located in areas with identified hazards would be required to appropriately address and be designed to withstand associated hazards to the maximum extent feasible. In general, the proposed project 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.

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 seismic-related ground failure or unstable soils would be less than significant. Further analysis in an EIR is not warranted.

LESS THAN SIGNIFICANT IMPACT

a.4. Would the project directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving landslides?

As shown in Figure 8, while most of the Southside is not located within an identified landslide hazard zone, the portion east of Prospect Street is at the western edge of the landslide hazard zone. Therefore, the increase in development potential allowed by the proposed project could result in impacts related to landslides. However, as described under criterion (a.3) above, the Public Resources Code (PRC) Section 2690-2699.6, *Seismic Hazards Mapping Act* and CBC requirements as adopted in the BMC would require site-specific geotechnical investigations for individual development projects within the landslide-susceptible portions of the Southside to identify the degree of potential hazards, design parameters for the project based on the hazard, and describe appropriate design measures to address hazards. Future development in the Southside would be reviewed for consistency with these recommendations to ensure hazards related are adequately mitigated. Moreover, the proposed project 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 City of Berkeley Building Codes, PRC Section 2690-2699.6, and the City's Municipal Code would ensure that potential impacts associated with landslides would be less than significant. Further analysis in an EIR is not warranted.

LESS THAN SIGNIFICANT IMPACT

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

As mapped by the NRCS, the Southside Area is composed primarily of Tierra complex two to five percent slopes and Tierra complex five to fifteen percent slopes (USDA 2017). The Southside Area lies in a generally flat region, approximately 100 feet above mean sea level, and the Southside 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 10, *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.

The existing soil composition of the overall Southside, along with required compliance with aforementioned regulations, NPDES permit and regulations, ensures that impacts associated with substantial soil erosion or loss of topsoil would be less than significant. Further analysis in an EIR is not warranted.

LESS THAN SIGNIFICANT IMPACT

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

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. As described in the Geologic *Setting* Section above, the soil types within the Southside Area have high potential for shrink-swell behavior, or expansiveness. The City of Berkeley Building Codes require that a geotechnical investigation be prepared for projects proposed to be constructed on expansive soils. Moreover, the report is required to be approved by the City to ensure that recommended action in the report would prevent structural damage. Building on unsuitable soils would have the potential to create future subsidence or collapse issues that could result in the settlement of infrastructure, and/or the disruption of utility lines and other services.

Compliance with existing State and local laws and regulations and General Plan policies, would ensure that impacts from development in the Southside associated with expansive soil are minimized by requiring the submittal and review of detailed soils and/or geologic reports prior to construction. Such evaluations must contain recommendations for ground preparation and earthwork specific to the site, which then become an integral part of the construction design.

Berkeley Building Codes and other City requirements require site-specific investigations for projects where there are soil-related hazards and implementation of design recommendations in the investigations, would ensure that potential impacts associated with expansive soils would be minimized or avoided. Impacts associated with expansive soils would be less than significant. Further analysis in an EIR is not warranted.

LESS THAN SIGNIFICANT IMPACT

- e. *Would the project have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?*

Future development in the Southside Area would be served by the East Bay Municipal Utility District (EBMUD), which is responsible for collection, treatment and disposal of wastewater from all residential and commercial sources within its sewer service area. Projects facilitated by the

proposed Zoning Ordinance amendments 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 and further analysis in an EIR is not warranted.

NO IMPACT

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

The potential for the project to result in significant impacts to paleontological resources was evaluated based on its potential to disturb paleontologically sensitive geologic units during construction. The analysis involved a review of pertinent geologic maps and geologic literature, and a paleontological locality search to identify any known fossil localities within the Southside Area, or from geologic units mapped in the Southside Area. Fossil collections records from the Paleobiology Database and University of California Museum of Paleontology (UCMP) online database were reviewed to identify known fossil localities in Alameda County (Paleobiology 2020; UCMP 2020). Following the geologic map review, literature review, and UCMP database search, a paleontological sensitivity was assigned to the geologic units mapped within the Southside Area based on Society of Vertebrate Paleontology (SVP) guidelines (SVP 2010). The SVP has developed a system for assessing paleontological sensitivity and describes sedimentary rock units as having high, low, undetermined, or no potential for containing scientifically significant nonrenewable paleontological resources (SVP 2010). This system 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.

Late to middle Holocene deposits (Qhaf) mapped through the majority of the Southside Area are too young (i.e., less than 5,000 years old) to preserve paleontological resources at or near the surface, and are considered to have a **low paleontological sensitivity at the surface** as defined by SVP (2010) standards; however, late to middle Holocene deposits may grade downward into more fine-grained deposits of early Holocene to late Pleistocene age that could preserve fossil remains at shallow or unknown depths. The depths at which these units become old enough to contain fossils is highly variable, but generally does not occur at depths of less than five feet. Early Holocene to late Pleistocene alluvial sediments have a well-documented record of abundant and diverse vertebrate fauna throughout California. Localities have produced fossil specimens of mammoth (*Mammuthus columbi*), horse (*Equus*), camel (*Camelops*), and bison (*Bison*), as well as various birds, rodents, and reptiles (Jefferson 1985, 2010; Paleobiology Database 2020; UCMP 2020). Therefore, areas mapped as Late to middle Holocene deposits (Qhaf) alluvial deposits are assigned a **high paleontological sensitivity at depths greater than five feet** (SVP 2020).

Cretaceous rocks from the Great Valley Complex (Ku), which include the Panoche Formation (Kp), have yielded several paleontological resources throughout California. A search of the paleontological locality records maintained in the online Paleobiology Database indicates that the Panoche Formation (Kp) has rendered various significant fossil specimens of extinct cephalopod (Ammonoidea), sea urchin (Echinoidea), and cartilaginous fish (Elasmobranchii) within neighboring counties (Paleobiology Database 2020). Therefore, Cretaceous rocks from the Great Valley Complex (Ku, Kp) are assigned a **high paleontological sensitivity**.

Late Cretaceous to Late Jurassic metasedimentary rocks from the Franciscan Complex (KJfs) formed from the cooling of molten rock that was subsequently metamorphosed. The high-heat and high-pressure conditions in which these rocks formed are not suitable for life or fossilization. Therefore, metasedimentary rocks from the Franciscan Complex (KJfs) have **no paleontological sensitivity** (SVP 2020).

Because the Southside Area is underlain by geologic units assigned a high paleontological sensitivity, paleontological resources may be encountered during ground-disturbing activities associated with project construction (e.g., grading, excavation, or other ground disturbing construction activity). Construction activities may result in the destruction, damage, or loss of undiscovered scientifically important paleontological resources, and would be considered a significant impact under CEQA. Cretaceous rocks from the Great Valley Complex [Ku, Kp] have a high paleontological sensitivity and ground disturbance at or near the surface has potential to result in significant impacts to paleontological resources. Early Holocene to late Pleistocene alluvial deposits that may be present at depths greater than five feet in areas mapped as Late to middle Holocene deposits (Qhaf) have a high paleontological sensitivity, and ground disturbance to depths greater than five feet has potential to result in significant impacts to paleontological resources.

The implementation of Mitigation Measure GEO-1 would reduce impacts to paleontological resources to a less than significant level by including an implementation program requiring paleontological resource studies for projects in high sensitivity geological units within the Southside Area and implementation of further requirements to avoid or reduce impacts to such resources on a project-by-project basis.

Mitigation Measures

The following mitigation measure is required.

GEO-1 Paleontological Resources Studies

If the City of Berkeley determines that development of individual projects would not result in impacts to geologic units with high paleontological sensitivity, and as depicted in Figure 6, then specific project impacts shall be deemed less than significant and no further mitigation would be required. If ground disturbance is proposed to occur in areas mapped as Cretaceous rocks from the Great Valley Complex [Ku, Kp]; or if ground disturbance is expected to exceed five feet in depth in areas mapped as Late to middle Holocene deposits (Qhaf), then the provisions provided below shall be implemented to reduce potential impacts to a less than significant level. The City of Berkeley shall require the following specific requirements for individual projects that could disturb geologic units with high paleontological sensitivity:

1. **Qualified Paleontologist.** The project applicant shall retain a Qualified Paleontologist to implement the following measures prior to excavations that have potential to impact paleontological resources. The Qualified Paleontologist shall direct all mitigation measures related to paleontological resources. A qualified professional paleontologist is defined by the SVP standards as an individual preferably with an M.S. or Ph.D. in paleontology or geology who is experienced with paleontological procedures and techniques, who is knowledgeable in the geology of California, and who has worked as a paleontological mitigation project supervisor for a least two years (SVP 2010).
 - a. The qualified professional paleontologist shall design a Paleontological Resources Mitigation and Monitoring Program (PRMMP) for submission to the City prior to the issuance of grading permits. The Plan will outline the procedures and protocol for conducting paleontological monitoring and mitigation. Monitoring shall be conducted by a qualified paleontological monitor who meets the minimum qualifications per standards set forth by the SVP. The PRMMP shall address the following procedures and protocols:

- Timing and duration of monitoring
- Procedures for work stoppage and fossil collection
- The type and extent of data that should be collected with any recovered fossils
- Identify an appropriate curatorial institution
- Identify the minimum qualifications for qualified paleontologists and paleontological monitors
- Identify the conditions under which modifications to the monitoring schedule can be implemented
- Details to be included in the final monitoring report.

Prior to issuance of a grading permit, copies of the PRMMP shall be submitted for review to the Department of Planning and Development at the City of Berkeley.

2. **Paleontological Worker Environmental Awareness Program (WEAP).** Prior to any ground disturbance, the applicant shall incorporate information on paleontological resources into the Project's Worker Environmental Awareness Training (WEAP) materials, or a stand-alone Paleontological Resources WEAP shall be submitted to the Department of Planning and Development at the City of Berkeley. The Qualified Paleontologist or his or her designee shall conduct training for construction personnel regarding the appearance of fossils and the procedures for notifying paleontological staff should fossils be discovered by construction staff. The Paleontological WEAP training shall be fulfilled simultaneously with the overall WEAP training, or at the first preconstruction meeting at which a Qualified Paleontologist attends prior to ground disturbance. Printed literature (handouts) shall accompany the initial training. Following the initial WEAP training, all new workers and contractors must be trained prior to conducting ground disturbance work.
3. **Paleontological Monitoring.** Paleontological monitoring shall be conducted during ground disturbing construction activities (i.e., grading, trenching, foundation work) in previously undisturbed (i.e., intact) sediments with high paleontological sensitivities (i.e., Cretaceous rocks from the Great Valley Complex [Ku, Kp] and early Holocene to late Pleistocene alluvial deposits). Paleontological monitoring shall be conducted by a qualified paleontological monitor, who is defined as an individual who has experience with collection and salvage of paleontological resources and meets the minimum standards of the SVP (2010) for a Paleontological Resources Monitor. The duration and timing of the monitoring will be determined by the Qualified Paleontologist and the location and extent of proposed ground disturbance. If the Qualified Paleontologist determines that full-time monitoring is no longer warranted, based on the specific geologic conditions at the surface or at depth, he/she may recommend that monitoring be reduced to periodic spot-checking or cease entirely.
4. **Fossil Discoveries.** In the event of a fossil discovery by the paleontological monitor or construction personnel, all work in the immediate vicinity of the find shall cease. A Qualified Paleontologist shall evaluate the find before restarting construction activity in the area. If it is determined that the fossil(s) is (are) scientifically significant, the Qualified Paleontologist shall complete the following conditions to mitigate impacts to significant fossil resources:

- a. **Salvage of Fossils.** If fossils are discovered, all work in the immediate vicinity shall be halted to allow the paleontological monitor, and/or lead paleontologist to evaluate the discovery and determine if the fossil may be considered significant. If the fossils are determined to be potentially significant, the qualified paleontologist (or paleontological monitor) shall recover them following standard field procedures for collecting paleontological as outlined in the PRMMP prepared for the project. Typically, fossils can be safely salvaged quickly by a single paleontologist and not disrupt construction activity. In some cases, larger fossils (such as complete skeletons or large mammal fossils) require more extensive excavation and longer salvage periods. In this case the paleontologist shall have the authority to temporarily direct, divert or halt construction activity to ensure that the fossil(s) can be removed in a safe and timely manner. If fossils are discovered, the Qualified Paleontologist (or Paleontological Monitor) shall recover them as specified in the project's PRMMP.
 - b. **Preparation and Curation of Recovered Fossils.** Once salvaged, significant fossils shall be identified to the lowest possible taxonomic level, prepared to a curation-ready condition, and curated in a scientific institution with a permanent paleontological collection (such as the UCMP), along with all pertinent field notes, photos, data, and maps. Fossils of undetermined significance at the time of collection may also warrant curation at the discretion of the Qualified Paleontologist.
5. **Final Paleontological Mitigation Report.** Upon completion of ground disturbing activity (and curation of fossils if necessary) the Qualified Paleontologist shall prepare a final mitigation and monitoring report outlining the results of the mitigation and monitoring program. The report should include discussion of the location, duration and methods of the monitoring, stratigraphic sections, any recovered fossils, and the scientific significance of those fossils, and where fossils were curated. The report shall be submitted to the Department of Planning and Development at the City of Berkeley. If the monitoring efforts produced fossils, then a copy of the report shall also be submitted to the designated museum repository.

Significance After Mitigation

With implementation of Mitigation Measure GEO-1, impacts to paleontological resources associated with future development in the Southside under the proposed project would be avoided. This impact would be less than significant. Mitigation Measure GEO-1 will be included in the EIR's executive summary and mitigation monitoring and reporting program. Further analysis of this issue in an EIR is not warranted.

LESS THAN SIGNIFICANT WITH MITIGATION INCORPORATED

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8 Greenhouse Gas Emissions

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
Would the project:				
a. Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	■	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b. Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	■	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Climate Change and Greenhouse Gas (GHG) Emissions

Climate change is the observed increase in the average temperature of the earth's atmosphere and oceans along with other substantial changes in climate (such as wind patterns, precipitation, and storms) over an extended period of time. Climate change is the result of numerous, cumulative sources of greenhouse gases (GHG), gases that trap heat in the atmosphere, analogous to the way in which a greenhouse retains heat. Common GHGs include water vapor, carbon dioxide (CO₂), methane (CH₄), nitrous oxides (N₂O), fluorinated gases, and ozone (O₃). GHGs are emitted by both natural processes and human activities. Of these gases, CO₂ and CH₄ are emitted in the greatest quantities from human activities. Emissions of CO₂ are largely by-products of fossil fuel combustion, whereas CH₄ results from off-gassing associated with agricultural practices and landfills. Man-made GHGs, many of which have greater heat-absorption potential than CO₂, include fluorinated gases, such as hydrofluorocarbons (HFC), perfluorocarbons (PFC), and sulfur hexafluoride (SF₆).

The accumulation of GHGs in the atmosphere regulates the earth's temperature. Without the natural heat trapping effect of GHGs, Earth's surface would be about 34° C cooler. However, it is believed that emissions from human activities, particularly the consumption of fossil fuels for electricity production and transportation, have elevated the concentration of these gases in the atmosphere beyond the level of naturally occurring concentrations.

Impact Analysis

- a. *Would the project generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment?*
- b. *Would the project conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases?*

Construction and operation of the higher-density housing allowed by the proposed project would generate greenhouse gas (GHG) emissions through the burning of fossil fuels or other emissions of GHGs, thus potentially contributing to cumulative impacts related to global climate change.

Emissions could potentially exceed locally adopted significance thresholds and the project could potentially conflict with local and regional plans adopted for the purpose of reduce GHG emissions, including the City's Climate Action Plan and the regional Sustainable Communities Strategy (SCS). Impacts related to greenhouse gas emissions are potentially significant and will be analyzed further in an EIR.

POTENTIALLY SIGNIFICANT IMPACT

9 Hazards and Hazardous Materials

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
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Would the project:

a. Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b. Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c. Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within 0.25 mile of an existing or proposed school?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d. Be located on a site that is included on a list of hazardous material sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
e. For a project located in an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard or excessive noise for people residing or working in the project area?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f. Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
g. Expose people or structures, either directly or indirectly, to a significant risk of loss, injury, or death involving wildland fires?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Hazards and Hazardous Materials Setting

a. Hazards in the Southside

The Southside Area consists of commercial and residential development. The most common hazards in and around the Southside Area are earthquakes, fires, and release of hazardous materials. The City of Berkeley Fire Department (BFD) provides fire and emergency medical service to the Southside. Emergency evacuation routes in the Southside and emergency response plans are identified in the City's Multi-Hazard Functional Operations Plan. The Southside is not located in an airport land use plan area; the nearest public airport is Oakland International Airport, approximately 10 miles south of the Southside.

Much of the Southside is within the City's identified Environmental Management Area (EMA), which includes areas known or suspected to have groundwater contamination issues. Within the Southside, the EMA covers all parcels with frontages along Telegraph Avenue, much of the northwest corner of the area along Fulton Street, and portions of parcels along and near College Avenue (City of Berkeley 2010).

The most common industrial hazardous materials in and around the Southside Area are found in medical clinics and offices, including the Tang Center and Berkeley Free Clinic, and a cluster of medical offices and centers at Dwight Way and Milvia Street, approximately 0.1 mile east of the Southside. Hazardous materials at these sites include medical wastes, defined as potentially infectious waste from sources such as laboratories, clinics and hospitals. Moreover, while none are currently operated within the Southside, other common industrial hazardous materials near the Southside Area are those associated with automotive mechanics and auto body repair shops. These include Toyota Service and Henry Chin's Auto Care, both approximately 0.1 mile east of the Southside area. In addition, Touchless Car Wash, a gas station and car wash service, is approximately 300 feet north of the Southside Area. Most of the hazardous materials at these sites are petroleum-based or hydrocarbon hazardous waste and include cleaning and paint solvents, lubricants, and oils.

In addition to existing uses, there are properties in the Southside 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 April 7, 2020), which contain information on properties in California where hazardous substances have been released or where the potential for a release exists, identified seven "closed" Leaking Underground Storage Tank (LUST) sites. An additional 20 sites were located close but outside of the Southside Area, including 19 LUST sites, one of which is still open, and one Non-Case Information site. Table 7 lists DTSC and SWRCB listed cleanup sites in the Southside and Figure 9 shows the locations of the cleanup sites in the Southside.

The EnviroStor Database did not identify any Superfund or State Response sites in the Southside Area. It did identify one inactive site in need of evaluation. A site assessment and interim remedial action were completed in 2011 at the Cal Cleaners site, at 2531 Telegraph Avenue.

In addition to hazardous materials used and generated in the Southside Area, hazardous materials and waste also pass through and near the Southside en route to other destinations via the City's larger and busier streets, including Shattuck Avenue and Telegraph Avenue. The City requires transport of hazardous materials on City streets to obtain a permit from the fire code official. The

US Department of Transportation (DOT) also regulates transportation of hazardous materials by truck and rail.

Table 7 Cleanup Sites in the Southside

Project Type	Name	Address	Status
Sites in the Southside			
LUST Cleanup Site ¹	UC Berkeley-Dining Facility	2401 Bowditch Street	Completed-Case Closed
LUST Cleanup Site	UC Berkeley	2515 Channing Way	Completed-Case Closed
LUST Cleanup Site	UC Berkeley Anna Head Housing Project	2536 Channing Way	Completed-Case Closed
LUST Cleanup Site	Shell	2200 Durant Avenue	Completed-Case Closed
LUST Cleanup Site	Hotel Durant	2600 Durant Avenue	Completed-Case Closed
LUST Cleanup Site	Commercial Property	2201 Dwight Way	Completed-Case Closed
Cleanup Program Site ²	Cal Cleaners	2531 Telegraph Avenue	Open-Inactive
LUST Cleanup Site	Former Center for Independent Living	2539 Telegraph Avenue	Completed-Case Closed
Site is outside the Southside but within 1,000 feet of the Southside boundary			
LUST Cleanup Site	American Red Cross	2116 Allston Way	Completed-Case Closed
LUST Cleanup Site	Pacific Bell	2116 Bancroft Way	Completed-Case Closed
LUST Cleanup Site	Kalmar Property	2034 Blake Street	Completed-Case Closed
LUST Cleanup Site	Toltec Property	2148 Center Street	Completed-Case Closed
LUST Cleanup Site	GLM Real Estate Services	2029 Channing Way	Completed-Case Closed
LUST Cleanup Site	Don Auto Clinic	2555 College Avenue	Completed-Case Closed
LUST Cleanup Site	Jackson Property	2131 Durant Avenue	Completed-Case Closed
LUST Cleanup Site	Goss Ross Doyle Trust	2140 Durant Avenue	Completed-Case Closed
LUST Cleanup Site	Herrick Hospital Alta Bates	2001 Dwight Way	Completed-Case Closed
LUST Cleanup Site	2107 Dwight ("The Dwight")	2107 Dwight Way	Completed-Case Closed
LUST Cleanup Site	Unknown	2167-2183 Dwight Way	Completed-Case Closed
LUST Cleanup Site	Berkeley Touchless	2176 Kittredge Street	Open-Site Assessment
LUST Cleanup Site	Berkeley Lincoln Mercury	2352 Shattuck Avenue	Completed-Case Closed
LUST Cleanup Site	Southside Plaza	2399 Shattuck Avenue	Completed-Case Closed
Non-Case Information ³	Toyota of Berkeley	2400 Shattuck Avenue	Informational Item
LUST Cleanup Site	Chevron	2401 Shattuck Avenue	Completed-Case Closed
LUST Cleanup Site	Toyota Flynn Trust	2555 Shattuck Avenue	Completed-Case Closed
LUST Cleanup Site	Shield Healthcare	2567 Shattuck Avenue	Completed-Case Closed
LUST Cleanup Site	Berkeley Honda	2600 Shattuck Avenue	Completed-Case Closed

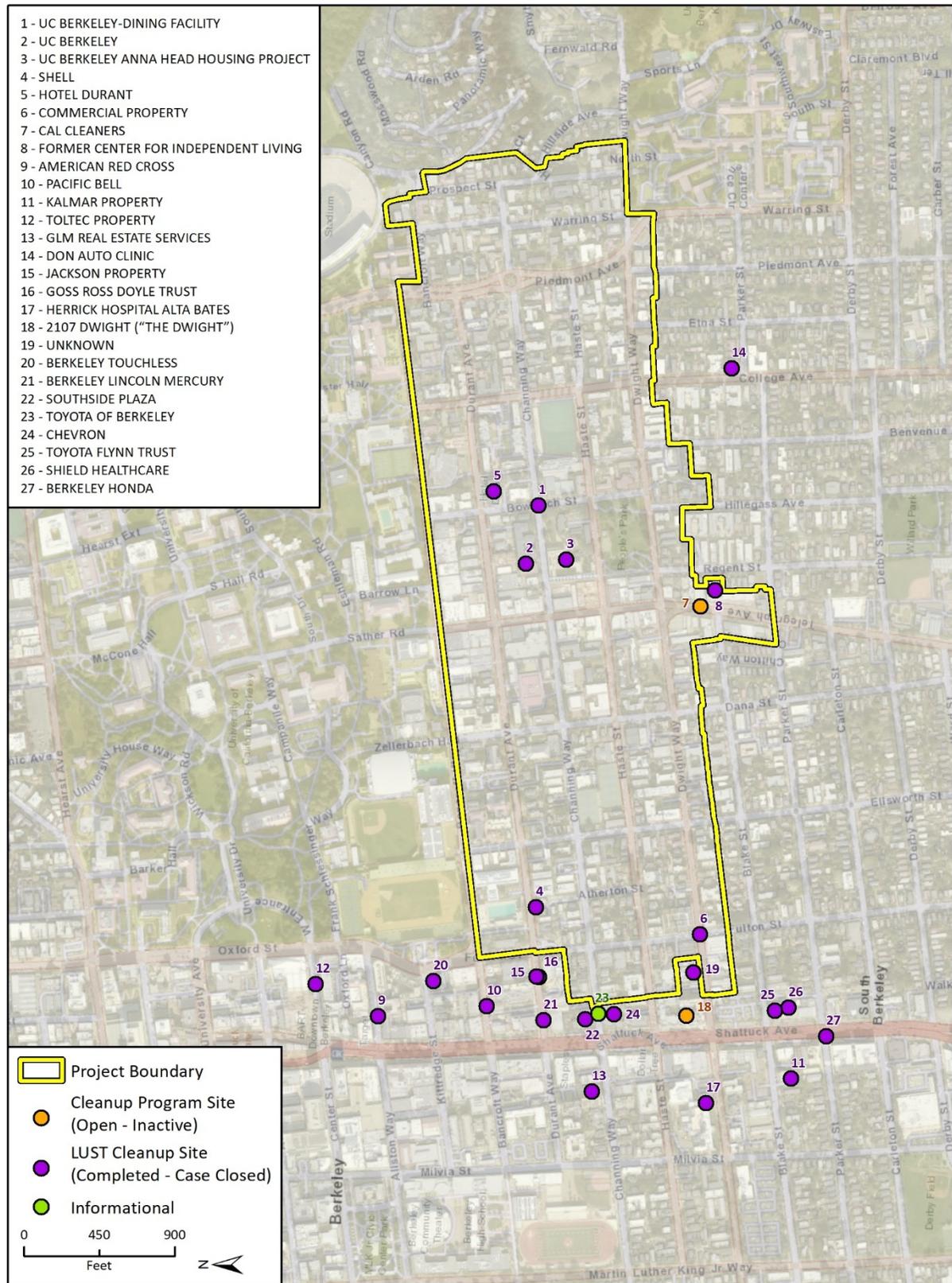
¹ A Leaking Underground Storage Tank (LUST) site is an undergoing cleanup due to an unauthorized release from an UST system. An UST is a tank and any underground piping connected to the tank that has at least 10 percent of its combined volume underground.

² A Cleanup Program Site 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.

³ A Non-Case Information Site is a site that either has no unauthorized release, had a release to the environment with minimal impact, or is currently being evaluated for impacts and may result with the activation of a new case. Non-Case information Sites contain environmental data, location data, or potential source information that may be considered important to a given area.

Source: DTSC 2020 and SWRCB 2020

Figure 9 Cleanup Sites in the Southside



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 Additional Data from California State Geotracker, 2020.

b. Regulatory Setting

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 is 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

The 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. The 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 the 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 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 2019 Local Hazard Mitigation Plan

The City of Berkeley 2019 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 2019b).

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.

Impact Analysis

- a. *Would the project create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?*
- b. *Would the project create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?*

Construction Activities

Although no specific development projects are proposed in the Southside as part of the Zoning Ordinance amendments project, implementation of the amendments could facilitate demolition of existing buildings in the Southside Area and construction of new buildings. 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 Southside 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 is subject to various federal, state, and local regulations designed to reduce risks associated with hazardous materials, including potential risks associated with upset or accident conditions. Hazardous materials would be required to be transported under U.S. Department of Transportation (DOT) regulations (U.S. DOT Hazardous Materials Transport Act, 49 Code of Federal Regulations), which stipulate the types of containers, labeling, and other restrictions to be used in the movement of such material on interstate highways. In addition, the use, storage, and disposal of hazardous materials are regulated through the Resources Conservation and Recovery Act (RCRA). The California Department of Toxic Substances Control (DTSC) is responsible for implementing the RCRA program, as well as California's own hazardous waste laws. DTSC regulates hazardous waste, cleans up existing contamination, and looks for ways to control and reduce the hazardous waste produced in California. It does this primarily under the authority of RCRA and in accordance with the California Hazardous Waste Control Law (California H&SC Division 20, Chapter 6.5) and the Hazardous Waste Control Regulations (Title 22, California Code of Regulations, Divisions 4 and 4.5). DTSC also oversees permitting, inspection, compliance, and corrective action programs to ensure that hazardous waste managers follow federal and State requirements and other laws that affect hazardous waste specific to handling, storage, transportation, disposal, treatment, reduction, cleanup, and emergency planning. Compliance with existing regulations would reduce the risk of potential release of hazardous materials during construction.

Release of Contaminated Materials during construction

Portions of the Southside Area are located in the 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. In addition, 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, future development under the project 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. In addition, development in the EMA requires project review by the TMD prior to issuance of permits. Finally, all projects requiring discretionary review (including all new construction of dwelling units), would be subject to the following standard Condition of Approval:

Toxics. The applicant shall contact the Toxics Management Division (TMD) to determine which of the following documents are required and timing for their submittal:

A. Environmental Site Assessments

1. Phase I & Phase II Environmental Site Assessments (latest ASTM 1527-13). A recent Phase I ESA (less than 6 months old*) shall be submitted to TMD for developments for:
 - All new commercial, industrial and mixed-use developments and all large improvement projects.
 - All new residential buildings with 5 or more dwelling units located in the Environmental Management Area (or EMA).

- EMA is available online at:
http://www.cityofberkeley.info/uploadedFiles/IT/Level_3_-_General/ema.pdf
- 2. Phase II ESA is required to evaluate Recognized Environmental Conditions (REC) identified in the Phase I or other RECs identified by TMD staff. The TMD may require a third party toxicologist to review human or ecological health risks that may be identified. The applicant may apply to the appropriate state, regional or county cleanup agency to evaluate the risks.
- 3. If the Phase I is over 6 months old, it will require a new site reconnaissance and interviews. If the facility was subject to regulation under Title 15 of the Berkeley Municipal Code since the last Phase I was conducted, a new records review must be performed.

B. Soil and Groundwater Management Plan

1. A Soil and Groundwater Management Plan (SGMP) shall be submitted to TMD for all non-residential projects, and residential or mixed-use projects with five or more dwelling units, that: (1) are in the Environmental Management Area (EMA) and (2) propose any excavations deeper than 5 feet below grade. The SGMP shall be site specific and identify procedures for soil and groundwater management including identification of pollutants and disposal methods. The SGMP will identify permits required and comply with all applicable local, state and regional requirements.
2. The SGMP shall require notification to TMD of any hazardous materials found in soils and groundwater during development. The SGMP will provide guidance on managing odors during excavation. The SGMP will provide the name and phone number of the individual responsible for implementing the SGMP and post the name and phone number for the person responding to community questions and complaints.
3. TMD may impose additional conditions as deemed necessary. All requirements of the approved SGMP shall be deemed conditions of approval of this Use Permit.

C. Building Materials Survey

1. 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 with 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.

D. Hazardous Materials Business Plan

1. A Hazardous Materials Business Plan (HMBP) in compliance with BMC Section 15.12.040 shall be submitted electronically at <http://cers.calepa.ca.gov/> within 30 days if on-site hazardous materials exceed BMC 15.20.040. HMBP requirement can be found at <http://ci.berkeley.ca.us/hmr/>

The removal, 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, including those outlined in the standard condition of approval above. Compliance with these requirements would assure that risks associated with hazardous materials would be minimized. Impacts would be less than significant.

Asbestos and Lead

The Southside 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 Southside would be subject to the City of Berkeley standard conditions of approval above, which includes a Building Materials Survey prior to approval of permits for complete or partial demolition. The 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 with state hazardous waste generator requirements. Future projects in the Southside 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 Southside Zoning Ordinance amendments project 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 Southside 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 Southside Area prohibits industrial uses. The proposed project is anticipated and intended to expand housing capacity; the proposed zoning changes would not facilitate the establishment of new industrial, warehouse, auto-service, or manufacturing uses in the Southside. Therefore, the proposed project would not introduce new manufacturing, warehouse, or industrial uses that would sell, use, store, transport, or release substantial quantities of hazardous materials.

New residential uses within the Southside Area could be exposed to the transport of hazardous materials through area roadways, because certain allowed uses close to mixed residential uses may use or create hazardous materials. For example, commercial development in the Southside may involve the transport of hazardous materials. However, the numerous hazardous material regulations detailed in the *Regulatory Setting* section above, would minimize impacts related to hazardous materials in the Southside Area. Hazardous materials would be required to be transported under DOT regulations and with a permit from the City's fire code official. 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 and further analysis of this issue in an EIR is not warranted.

LESS THAN SIGNIFICANT IMPACT

- c. *Would the project emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within 0.25 mile of an existing or proposed school?*

One school, the East Bay School for Boys at 2340 Durant Avenue, is within the Southside Area. In addition, several schools are within 0.25 miles of the Southside Area, including the UC Berkeley main campus, which is adjacent to the Southside across Bancroft Way, Berkeley High School, approximately 0.25 miles east of the area, Berkeley Rose Waldorf School, approximately 0.1 miles south of the area, Hearts Leap Preschool, approximately 0.1 mile south, and Willard Middle School, Monteverde School, Maybeck High School, and Emerson Elementary School, all approximately 0.25 miles south of the area. As described above under criteria (a) and (b), the proposed Zoning Ordinance amendments 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 Southside Area. Uses in the Southside that sell, use, store, generate, or release hazardous materials must adhere to applicable federal, State, and local safety standards, ordinances, and regulations.

As mentioned above under criteria (a) and (b), construction associated with future development in the Southside 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 Southside Area may result in emissions and transport of hazardous materials within one-quarter mile of existing schools. However, adherence to applicable requirements, including DOT and DTSC regulations and the City's standard conditions of approval regarding emission and transport of

hazardous materials would ensure impacts at the program level would be less than significant and further analysis of this issue in an EIR is not warranted.

LESS THAN SIGNIFICANT IMPACT

- d. *Would the project be located on a site that is included on a list of hazardous material sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?*

There are numerous permitted hazardous waste generators and sites with USTs or above ground storage tanks in Berkeley. Table 7 lists DTSC listed cleanup sites in and around the Southside Area. As shown, there are no Superfund or other State Response sites in the Southside. There are seven “completed-case closed” LUST sites in the Southside 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 Southside Area has been identified by DTSC as a Cleanup Program Site in need of evaluation. A Phase I Environmental Site Assessment and soil remedial action were completed in 2011 for the Cal Cleaners site located at 2531 Telegraph Avenue. New development on the site may be exposed to hazards from active plating and cleaning activities. However, such development 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 project. Impacts would be less than significant and further analysis in an EIR is not warranted.

LESS THAN SIGNIFICANT IMPACT

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

The nearest airport to the Southside is the Oakland International Airport approximately 10 miles to the south. The Southside is not in the land use plan for the airport (Alameda County 2010). There are no private airstrips near the Southside Area. The proposed project would not result in a safety hazard for people residing or working in the project area because there are no airports near the Southside. There would be no impact and further analysis in an EIR is not warranted.

NO IMPACT

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

Figure 14 of the Berkeley General Plan identifies existing emergency access and evacuation routes in the Southside. Several streets in the area, including Telegraph Avenue, Durant Avenue, Channing Way, Haste Street, and Dwight Way are designated as emergency access routes 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 project would affect streets within the Southside Area, designated access routes would still serve as

evacuation routes in case of emergency. Moreover, since the Southside Area can be accessed by several designated access routes and since new development in the Southside is anticipated to be distributed throughout the Area, the traffic increase that would result from new development in the Southside would not substantially impact any one route.

The proposed project does not include policies or programs that would impair or interfere with emergency response or emergency evacuation. New housing under the proposed zoning amendments would be on private property and would therefore not obstruct existing roadways or require the construction of new roadways or access points. As discussed in Section 15, *Public Services*, development in the Southside 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 project would not impair or interfere with an emergency response or evacuation plan. Impacts would be less than significant and further analysis of this issue in an EIR is not warranted.

LESS THAN SIGNIFICANT IMPACT

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

As described in Section 20, *Wildfire*, impacts related to wildland fires would be less than significant and further analysis in an EIR is unwarranted.

LESS THAN SIGNIFICANT IMPACT

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10 Hydrology and Water Quality

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

Hydrology and Water Quality Setting

a. 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 Southside 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.

b. Local Watersheds

The study area for the proposed Zoning Ordinance changes are within the Potter Watershed, which drains to the San Francisco Bay. The Potter Watershed is the largest watershed in the City and includes the areas south of the Strawberry Creek Watershed to the Oakland City Limit, and from Claremont Canyon in the east to the San Francisco Bay shoreline in the west. The watershed begins in the hills at the east limit and directs flows to the west through natural open channels, and through manmade storm drains. Figure 10 shows storm drains and historic creek traces through the Southside.

c. Groundwater

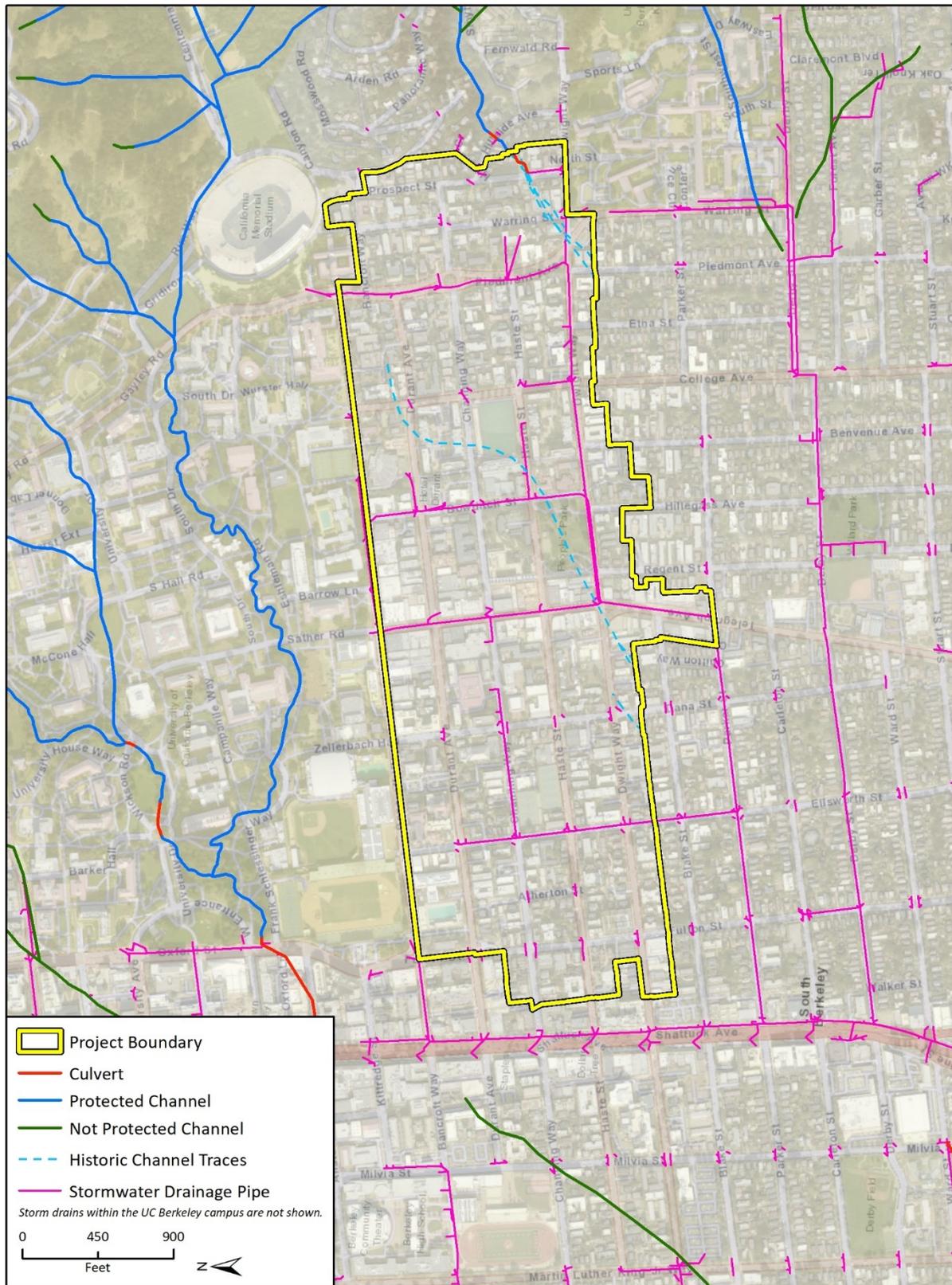
Water supply in the Southside is provided by EBMUD. The majority of the water delivered by EBMUD originates from the Mokelumne River watershed, and the remaining water originates as runoff from the protected watershed lands and reservoirs in the East Bay Hills. Supplemental groundwater projects would 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).

d. 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, metals, and/or particulate matter 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

Figure 10 Drainages and Historic Creek Traces in and Around the Southside



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Additional data from the City of Berkeley, 2019.

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).

Stormwater and Urban Runoff

The majority of the Southside 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 project would be collected by drainage inlets and conduits that discharge into San Francisco Bay. There are no surface water bodies in the Southside Area.

e. 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. The Southside Area is not located in an SFHA or 100-year flood zone.

Dams and Levees

No dams are located in the Southside Area and the area is not in a dam inundation zone. In addition, there are no levees in the Southside 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.

f. 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 Southside are contained in the Water Quality Control Plan for the San Francisco Bay Basin (Basin Plan).

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. A new version of the MRP is currently in negotiation between the Regional Water Board and the Clean Water Program. The new MRP will likely go into effect in mid-2021.

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). Some requirements (i.e., demolitions and special use rules) may become more stringent with implementation of the new version of the MRP expected in 2021.

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.

The NPDES permit also requires green infrastructure, a sustainable system that slows runoff by dispersing it to vegetated areas, harvests and uses runoff, promotes infiltration and evapotranspiration, and/or uses bioretention and other low impact development practices to improve the water quality of stormwater runoff. The City published its Green Infrastructure Plan in 2019 (City of Berkeley 2019a).

State

State Water Resources Control Board General Construction Permit

The SWRCB is responsible for developing statewide water quality policy and exercising 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.

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 enforces the provisions of MRP2, which identify “regulated projects” and sets requirements for new development and significant 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. 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 “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. 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. Future criteria for defining regulated projects are expected to become broader, thus increasing the number of projects that would be categorized as regulated projects.

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, and flow-through planters. 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 Southside is within the solid white area on Alameda County Wide Clean Water Program’s (CWP) 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 associated requirements apply to projects in the solid white area unless a project proponent demonstrates that all project runoff would flow through fully hardened channels. Plans to restore a hardened channel may affect the hydromodification standard applicability in this area. 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 Clean Stormwater Program

The City of Berkeley discharges stormwater to the San Francisco Bay in accordance with the second Municipal Regional Stormwater NPDES Permit (MRP2) issued by the San Francisco Bay Regional Water Quality Control Board (SFBRWQCB) as NPDES Permit No. CAS612008. MRP2 was issued on November 19, 2015 and expires on December 31, 2020. The requirements of subsequent Stormwater NPDES Permits shall prevail over MRP2 requirements.

Impact Analysis

- a. *Would the project violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?*

Construction Impacts

Construction activities associated with development in the Southside 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, as described above in the *Regulatory Setting* section, future development within the Southside 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 State Water Resources Control Board (SWRCB) Construction General Permit, which requires preparation and implementation of a Storm Water Pollution Prevention Plan (SWPPP) for projects that disturb one acre or more of land. The SWPPP must include erosion and sediment control Best Management Practices (BMP) 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 project 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 projects within the Southside Area would not cause or contribute to the degradation of water quality in receiving waters.

In addition, BMC Chapter 21.40 requires that proposed projects 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 during construction. 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 project. The proposed project therefore would not result in the degradation of water quality in receiving waters; construction-related water quality impacts would be less than significant.

Operational Impacts

The proposed project would result in a significant impact if implementation of the Zoning Ordinance amendments would conflict with applicable water quality permits or waste discharge requirements.

Future development under the proposed project 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 MRP2 or the applicable NPDES Permit. Compliance with the MRP2 or the applicable NPDES Permit will include operational and maintenance control measures, or BMPs, and construction-related BMPs. Provisions specified in MRP2 or the applicable NPDES Permit 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 Southside Area would be required to comply with all provisions of the MRP, including those listed below:

- **Provision C.3** requires that 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 MRP2 or the applicable NPDES Permit, 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 confirm implementation of appropriate and effective erosion and other BMPs by construction site operators/developers, and Permittee reporting is 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 MRP2 or the applicable NPDES Permit 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 that 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.

Compliance with the applicable State and local requirements described above would increase infiltration of stormwater, decrease stormwater runoff, promote capture and use, and would reduce the risk of water contamination within the Southside Area from operation of new developments to the maximum extent practicable. Therefore, the proposed project 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 and further analysis in an EIR is not warranted.

LESS THAN SIGNIFICANT IMPACT

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

Future development under the proposed project would not use or deplete groundwater resources. Water supply for the Southside Area is provided by EBMUD. The groundwater aquifer beneath Berkeley is not currently used for water storage or drinking water supply. Therefore, future development under the proposed project would not include installation of new groundwater wells or use of groundwater from existing wells.

The Southside Area is fully urbanized, and development associated with the proposed project would consist of intensification through redevelopment that could increase the amount of impervious areas that would interfere with groundwater recharge. However, as described above under criterion (a) proposed development in the Southside area would be required to comply with Provision C.3 of MRP2 or the applicable NPDES Permit which promotes infiltration. Implementation of LID measures would increase absorption of stormwater runoff and the potential for groundwater recharge. Moreover, while the proposed zoning amendments would allow reduced setbacks, all projects within the Southside would be required to provide enough yard space to meet applicable C.3 requirements and implement required LID measures.

Therefore, development under the proposed project would not result in a net deficit in aquifer volume or a lowering of the groundwater table. Impacts would be less than significant and further analysis in an EIR is not warranted.

LESS THAN SIGNIFICANT IMPACT

- c.(i) *Would the project substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would result in substantial erosion or siltation on- or off-site?*
- c.(ii) *Would the project substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site?*
- c.(iii) *Would the project substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner that would 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?*

- c.(iv) *Would the project substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would impede or redirect flood flows?*

The Southside 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 project 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 Southside and the 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 proposed project, but such alterations would not result in substantial adverse effects. The Southside Area is largely covered with impervious surfaces, and development under the proposed project 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 Zoning Ordinance amendments would not introduce substantial new surface water discharges and would not result in flooding on- or off-site.

As mentioned in the *Regulatory Setting* section above, “regulated projects” within the Southside 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 of impervious surface must implement site design measures to reduce stormwater runoff.

All regulated projects within the Southside 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.

Compliance with applicable State and local regulations 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 project 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 and further analysis in an EIR is unwarranted.

LESS THAN SIGNIFICANT IMPACT

- d. *In flood hazard, tsunami, or seiche zones, would the project risk release of pollutants due to project inundation?*

As noted in the Setting Section, the Southside is not located within a FEMA designated flood hazard area. The Southside 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 Southside (City of Berkeley 2001c). Therefore, implementation of future development under the project would not introduce new flood-related hazards.

Moreover, given the location of the Southside Area, development under the proposed project would not result in the placement of 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 and further analysis in an EIR is unwarranted.

LESS THAN SIGNIFICANT IMPACT

- e. *Would the project conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?*

As discussed under criterion (a) above, development under the proposed project would not violate water quality standards or degrade water quality during construction or operation.

As described in the *Regulatory Setting* section, Berkeley is under the jurisdiction of the SFBRWQCB, which is responsible for preparing the Water Quality Control Plan for the San Francisco Bay Basin (Basin Plan). The Basin Plan designates beneficial uses of water in the region and establishes narrative and numerical water quality objectives. The Basin Plan serves as the basis for the San Francisco Bay RWQCB's regulatory programs and incorporates an implementation plan for achieving water quality objectives. The proposed project would not interfere with the objectives and goals in the Basin Plan. Therefore, impacts would be less than significant and further analysis of this issue in an EIR is not warranted.

LESS THAN SIGNIFICANT IMPACT

11 Land Use and Planning

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
Would the project:				
a. Physically divide an established community?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b. Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Impact Analysis

a. *Would the project physically divide an established community?*

The Southside Area is an already urbanized portion of the City of Berkeley. It is surrounded on three sides by urban development and by the University of California, Berkeley campus to the north. Implementation of the proposed project would continue the existing residential and commercial development pattern in the Southside and would not cut off connected neighborhoods or land uses from each other. No new roads, linear infrastructure or other development features are proposed that would divide an established community or limit movement, travel or social interaction between established land uses. Impacts would be less than significant. Further discussion of this issue in an EIR is not warranted.

LESS THAN SIGNIFICANT IMPACT

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

The proposed project would involve Zoning Ordinance amendments that would facilitate an increase in allowed residential units. Potential conflicts with the applicable land use plans, policies, or regulations adopted for the purpose of avoiding or mitigating environmental effects are potentially significant and will be discussed in an EIR.

POTENTIALLY SIGNIFICANT IMPACT

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12 Mineral Resources

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
Would the project:				
a. Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b. Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Impact Analysis

- a. *Would the project result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?*
- b. *Would the project result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan?*

The Southside 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 Southside (City of Berkeley 2001b). There are likewise no mining operations in the Southside Area. No impacts related to mineral resources would occur.

NO IMPACT

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13 Noise

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

Noise Setting

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

Noise levels are commonly measured in decibels (dB) using the A-weighted sound pressure level (dBA). The A-weighting scale is an adjustment to the actual sound pressure levels so that they are consistent with the human hearing response, which is most sensitive to frequencies around 4,000 Hertz (Hz) and less sensitive to frequencies around and below 100 Hz (Kinsler, et. al. 1999). Decibels are measured on a logarithmic scale that quantifies sound intensity in a manner similar to the Richter scale used to measure earthquake magnitudes. A doubling of the energy of a noise source, such as a doubling of traffic volume, would increase the noise level by 3 dB; similarly, dividing the energy in half would result in a decrease of 3 dB (Crocker 2007).

Vibration Setting

Groundborne vibration of concern in environmental analysis consists of the oscillatory waves that move from a source through the ground to adjacent structures. The number of cycles per second of oscillation makes up the vibration frequency, described in terms of hertz (Hz). The frequency of a

vibrating object describes how rapidly it oscillates. The normal frequency range of most groundborne vibration that can be felt by the human body is from a low of less than 1 Hz up to a high of about 200 Hz (Crocker 2007).

While people have varying sensitivities to vibrations at different frequencies, in general they are most sensitive to low-frequency vibration. Vibration in buildings, such as from nearby construction activities, may cause windows, items on shelves, and pictures on walls to rattle. Vibration of building components can also take the form of an audible low-frequency rumbling noise, referred to as groundborne noise. Groundborne noise may result in adverse effects, such as building damage, when the originating vibration spectrum is dominated by frequencies in the upper end of the range (60 to 200 Hz). Vibration may also damage infrastructure when foundations or utilities, such as sewer and water pipes, physically connect the structure and the vibration source (FTA 2018). Although groundborne vibration is sometimes noticeable in outdoor environments, it is almost never annoying to people who are outdoors. The primary concern from vibration is that it can be intrusive and annoying to building occupants and vibration-sensitive land uses.

Southside Noise Environment

The primary sources of noise in the Southside are motor vehicles and noise associated with operation of commercial and residential uses.

Motor vehicles, including passenger vehicles, trucks, and buses, are the most common and significant sources of noise in Berkeley. The loudest roadways in the Southside are arterial routes that carry the highest traffic volumes, such as Telegraph Avenue. AC Transit buses frequently pass through the Southside and generate noise when accelerating and braking.

Equipment used in the operation of retail, other commercial, and residential uses in the Southside 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. In addition, the UC Berkeley campus generates noise from student and public gatherings and sports events.

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.

Impact Analysis

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

Noise sensitive land uses within the Southside Area include residences scattered in the Southside and in the surrounding neighborhoods. People's Park would also be considered a noise sensitive land use. In addition, there are several churches within and immediately surrounding the Southside Area which may be sensitive to noise levels during church services and community functions held at those facilities.

Development in the Southside Area could generate temporary noise increases during construction. Temporary noise increases would result from construction activities such as demolition, asphalt removal, grading, and excavation activities, as well as building construction. Temporary construction-related noise could affect sensitive receptors within the Southside.

In addition, operational noise associated with new development in the Southside Area (i.e.: conversations, mechanical equipment for building operation, traffic noise) could result in permanent increases in ambient noise levels in excess of established standards. Overall, these impacts are potentially significant and will be analyzed further in an EIR.

POTENTIALLY SIGNIFICANT IMPACT

- b. *Would the project result in generation of excessive groundborne vibration or groundborne noise levels?*

The proposed project could facilitate intensification of development and redevelopment of existing uses within the Southside Area. This would involve construction activities such as demolition, asphalt removal, grading, and excavation activities. Each of these is anticipated to result in some vibration that could affect nearby sensitive receptors depending on the location of the receptors. Impacts would be potentially significant and will be further analyzed in an EIR.

POTENTIALLY SIGNIFICANT IMPACT

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

The nearest airport to the Southside Area, Oakland International Airport, is located approximately 10 miles to the south. Although individual aircraft in the vicinity of the Southside Area are occasionally audible, the Southside 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 project would not be exposed to adverse noise from aircraft overflights. No impact would occur.

NO IMPACT

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14 Population and Housing

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

Impact Analysis

- a. *Would the project induce substantial unplanned population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?*
- b. *Would the project displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?*

The proposed project could facilitate intensification of development and redevelopment of existing uses within the Southside Area. As shown in Table 4, the proposed project could result in up to 4,597 new units 10,344 new residents in the Southside compared to existing conditions. Therefore, the proposed project would induce population growth and may result in displacement of existing people or housing in the Southside Area. Impacts to population and housing are potentially significant and will be analyzed further in an EIR.

POTENTIALLY SIGNIFICANT IMPACT

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15 Public Services

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
a. Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, or the need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:				
1 Fire protection?	■	□	□	□
2 Police protection?	□	□	■	□
3 Schools?	□	□	■	□
4 Parks?	□	□	■	□
5 Other public facilities?	■	□	□	□

Public Services Setting

a. Fire Protection

The Berkeley Fire Department provides fire protection and emergency medical services to the Southside 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 Southside is provided by Station 5, which is located at 2680 Shattuck Avenue, and by Station 3, which is located at 2710 Russell Street. Station 5 houses one engine company, one truck company, and one ambulance, while Station 3 houses one engine company and one ambulance. (City of Berkeley 2020a). Figure 11 shows the locations of fire stations in the vicinity of the Southside.

b. Police Protection

The Berkeley Police Department (BPD) provides police protection services to the Southside. Police headquarters are located at 2100 Martin Luther King Jr. Way, approximately 0.25 miles west of the Southside Area. Figure 11 above shows the locations of police stations in the vicinity of the Southside. The BPD 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 2020b). 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.

BPD currently provides regular patrols to 16 beats within Berkeley. The Southside is served by Beats 6 and 7 (City of Berkeley 2020c). 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 Area 2 represent the Southside (City of Berkeley 2020d).

In addition to the BPD, the University of California Police Department (UCPD) provides police protection services to the Southside. The University campus is divided into three beats, with one to two officers patrolling a beat at any given time. Two of these beats, Beats 1 and 3, extend beyond the campus and into the Southside Area, where UCPD officers spend approximately 25-30 percent of their time (City of Berkeley 2008).

The BPD and UCPD regularly coordinate on police protection issues related to the Southside. The Berkeley Police Department also participates in the weekly Telegraph Business Improvement District meetings. These meetings include officers from UCPD and facilitate coordination between the two departments. BPD representatives also attend the City/ UC/ Student relations committee meetings, which are held two to three times per year.

c. Public Schools

The Berkeley Unified School District (BUSD) operates three preschools, 11 elementary schools (grades K-5), three middle schools (grades 6-8), one large comprehensive high school (grades 9-12), a continuation high school (grades 9-12), and an adult school (BUSD 2020a). The District's overall enrollment for the 2018-2019 school year was 10,194 students (Ed-Data.org 2020).

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 in the Southside are within the Southeast zone for elementary school, which is served by Emerson, John Muir, and Malcom X Elementary schools. However, students living in the Southside 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 residences in the Southside are zoned to Willard Middle School, but Berkeley residents can also choose to be assigned through random lottery to Longfellow Magnet Middle School (BUSD 2020b).

d. Regulatory Setting

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 2001c; City of Berkeley 2001e):

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 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.

Policy S-25 Fire Safety Education. Use Fire Department personnel to plan and conduct effective fire safety and prevention programs.

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.)

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 2001c):

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.)

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.)

Chapter 2.64 of the Berkeley Municipal Code authorizes the creation of the police department and defines its duties. Additional police regulations have been issued to further describe the required conduct and responsibilities of the police department.

Schools Regulatory Setting

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.

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.¹

City of 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):

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.

Impact Analysis

a.1. Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered fire protection facilities, or the need for new or physically altered fire protection facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives?

Future development in the Southside would be required to comply with basic building design standards for commercial and residential buildings as mandated by the Berkeley Fire Code, under BMC Section 19.48. Nonetheless, implementation of the proposed project could facilitate development that would increase the demand for fire protection and emergency medical services. According to the Fire Department, the additional approximately 3,000 residents in the Southside would result in approximately 450 additional calls to the BFD annually (Brannigan 2020). The increase in traffic, density, and building heights associated with the proposed project on its own or in combination with planned development in the Southside associated with potential development of housing on University-owned sites could result in response time goals not being met. The continued implementation of policies and action items in the Berkeley General Plan would improve the ability of fire protection facilities to serve future growth. 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. As shown in Table 8, Engines 3 and 5's response times in the last four years have fluctuated and most recently dropped below the threshold of less than 4 minutes 90 percent of the time. With additional traffic congestion, construction activity, and an increase in population, additional impact on response times could occur.

¹ 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.

Table 8 Four-Minute Response Time Percentile

Engine	2016	2017	2018	2019
E3 Calls	1,626	1,597	1,470	1,584
E3 4 Min Response	70.73%	67.25%	65.85%	56.50%
E5 Calls	2,356	2,372	2,339	2,369
E5 4 Min Response	77.80%	76.60%	74.41%	71.00%

Source: Brannigan 2020

In addition to response time, a taller building with additional stories adds time and complexity to a Fire Department response. Response time is measured by the arrival of the engine company at the address, not to the location of the emergency within the building, which is not captured by Fire Department data sources. Allowing greater height of buildings would increase the total time Fire Department units are on scene at a given call to a taller building.

Despite compliance with the above General Plan policies and code requirements, the potential increased call volumes associated with future development (and in combination with future development of University-owned parcels for housing) and longer response times could contribute to the need for construction of a new fire station.

Therefore, impacts related to fire protection facilities associated with the proposed project are potentially significant and will be further analyzed in an EIR.

LESS THAN SIGNIFICANT IMPACT

a.2. Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered police protection facilities, or the need for new or physically altered police protection facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives?

Implementation of the proposed project could facilitate development that would increase the population served by the Berkeley Police Department. Although the Police Department does not factor in population increases when determining its staffing needs (City of Berkeley 2016), population growth in the Southside 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 Southside in the future.

Should the Police Department and the City determine that additional facilities are needed to provide police protection services to the Southside, it is not known whether such facilities would be located within the Southside or elsewhere in the City. No location has been identified for a new police station in the Southside as part of this project. 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.

Therefore, the impact related to police protection facilities would be less than significant. Further analysis in an EIR is not warranted.

LESS THAN SIGNIFICANT IMPACT

a.3. Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered schools, or the need for new or physically altered schools, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios or other performance objectives?

As shown in Table 4, implementation of the proposed project could add up to 4,579 new units in the Southside compared to existing conditions. These new units could result in an increase in the number of students served by BUSD. 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 zoning amendments would add an estimated 837 new students incrementally over time. However, this number is highly conservative. As described in the Project Objectives, a primary goal of the proposed project is to create additional housing at appropriate locations to help meet the housing demand for students, thus taking advantage of proximity to the University. It is assumed that many of the new housing units would be occupied by University students and would not house school-aged children.

Nonetheless, the proposed project could encourage housing that would add more school-aged children to BUSD schools. These students would be distributed throughout the schools that serve Berkeley depending on their grade level, their location, and their school preferences. 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 project 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 Southside on school facilities. Therefore, although adoption and development under the proposed project 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. Further analysis in an EIR is not warranted.

LESS THAN SIGNIFICANT IMPACT

a.4. Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered parks, or the need for new or physically altered parks, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios or other performance objectives?

Please see Section 16, *Recreation*, for an analysis of impacts related to parks and recreation resources. Impacts were found to be less than significant. Further analysis in an EIR is not warranted.

LESS THAN SIGNIFICANT IMPACT

a.5. Would the project result in substantial adverse physical impacts associated with the provision of other new or physically altered public facilities, or the need for other new or physically altered public facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives?

As discussed in Section 10, *Hydrology and Water Quality*, impacts related to stormwater facilities would be less than significant. Impacts related to water and wastewater water facilities are discussed in Section 19, *Utilities and Service Systems*. As discussed in that section, impacts related to water and wastewater facilities are potentially significant and will be analyzed further in an EIR. No significant impacts to other public services are anticipated.

POTENTIALLY SIGNIFICANT IMPACT

16 Recreation

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
a. Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b. Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Parks and Recreation Setting

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 that include 48 play areas; 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 2020e). According to the General Plan, there were 230 acres of parkland within city limits at the time the General Plan was prepared, 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). Since the time of the General Plan, additional park space has been added for a total of 252 acres of parkland within the city limits.

Although local, regional, and State parkland is available in and within a short distance from Berkeley, the geographic distribution of recreational facilities across Berkeley is uneven. One public park is located within the Southside, People’s Park, which is approximately 2.8-acres. Two other City parks are located less than 0.25 miles from the Southside: the 2.8-acre Martin Luther King Jr. Civic Center Park at Milvia and Center Street and the 2.7-acre Willard Park at Derby Street and Hillegass Avenue. The Claremont Canyon Regional Preserve is also within 0.25 miles of the Southside.

Several recreational facilities within the University campus may also serve as parks and recreational uses for residents of the Southside. The University has a general philosophy of keeping the campus open for the public to utilize open spaces (City of Berkeley 2001e).

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 two 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.

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 two acres per 1,000 residents.

Impact Analysis

- a. *Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?*
- b. *Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?*

The proposed project does not involve the development of new recreational facilities. The proposed project would increase demand for parks by facilitating residential growth in the Southside. As shown in Table 4, the proposed project could facilitate up to 10,344 new residents in the Southside compared to existing conditions. One park is located within the Southside (People's Park) and several local parks occur near the Southside, such as Martin Luther King Jr. Civic Center Park, Willard Park, and the Claremont Canyon Regional Preserve, as well as facilities associated with the University campus.

The Berkeley General Plan found that the city had approximately 12 acres per 1,000 residents, including local, regional, and State parks, which substantially exceeds the City's goal of two acres per 1,000 residents (City of Berkeley 2001d). Currently, the city has approximately 252 acres of parkland within the city limits and 122,580 residents, for a ratio of 2.06 acres per 1,000 residents (California

Department of Finance [DOF] 2020). However, as noted in the Parks and Recreation Setting, in addition to the public open space managed by the City's Parks Divisions, the city contains parts of the Bay Trail and the Eastshore State Park, and Tilden Regional Park and Claremont Canyon Regional Preserve are adjacent to the city. By increasing the citywide population by 10,344 new residents to an estimated 132,924, the project would reduce the ratio of parkland within the city limits to parkland ratio to 1.90 acres per 1,000 residents. Nonetheless, when considering parkland adjacent to the City and in proximity to the Southside such as the Claremont Canyon Regional Park, the ratio of parkland per resident would be substantially higher. Overall, the proposed project would not result in substantial overuse of existing parks which may cause physical deterioration of these facilities. Further, the proposed project would not require the construction or expansion of facilities which may have an adverse physical effect on the environment.

Therefore, the overall environmental impacts related to parks and recreational spaces would be less than significant. Further analysis in an EIR is not warranted.

LESS THAN SIGNIFICANT IMPACT

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17 Transportation

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

Impact Analysis

- a. *Would the project conflict with a program, plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities?*
- b. *Would the project conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b)?*
- c. *Would the project substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible use (e.g., farm equipment)?*
- d. *Would the project result in inadequate emergency access?*

The higher-density housing allowed by the proposed project could result in increased vehicle miles traveled (VMT) compared to existing conditions. Trips generated as a result of the proposed project have the potential to conflict with programs, plans, ordinances or policies addressing the circulation system, be inconsistent with CEQA Guidelines section 15064.3(b), increase hazards, or result in inadequate emergency access. Transportation impacts would be potentially significant and will be analyzed further in an EIR.

POTENTIALLY SIGNIFICANT IMPACT

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18 Tribal Cultural Resources

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
<p>Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in a Public Resources Code Section 21074 as either a site, feature, place, or 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 Resources Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.</p>	■	□	□	□

Tribal Cultural Resources Regulatory Setting

Enacted on March 1, 2005, Senate Bill 18 (SB18) (California Government Code Sections 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.

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.” AB 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 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 is:

1. 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
2. A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying these criteria, the lead agency shall consider the significance of the resource to a California Native American tribe.

AB 52 also establishes a formal consultation process for California tribes regarding those resources. The consultation process must be completed before a CEQA document can be certified. Under AB 52, lead agencies are required to “begin consultation with a California Native American tribe that is traditionally and culturally affiliated with the geographic area of the proposed project.” Native American tribes to be included in the process are those that have requested notice of projects proposed within the jurisdiction of the lead agency.

One tribe has requested to be notified of projects proposed by the City of Berkeley. The City of Berkeley notified the tribe of the proposed project on April 15, 2020. Under AB 52, tribes have 30 days to respond and request consultation. Over 30 days have elapsed since the notification was sent and the tribe did not request AB 52 consultation.

Impact Analysis

- a. *Would the project cause a substantial adverse change in the significance of a tribal cultural resource as defined in Public Resources Code Section 21074 that is listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code Section 5020.1(k)?*
- b. *Would the project cause a substantial adverse change in the significance of a tribal cultural resource as defined in Public Resources Code 21074 that is a resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1?*

The City of Berkeley sent notification in accordance with AB 52 on April 15, 2020 and the tribe did not request AB 52 consultation with the City. Nonetheless, the City will be sending notification again and will also be providing outreach to tribal representatives in accordance with SB 18. Development activities associated with the implementation of the proposed project have the potential to significantly impact subsurface tribal cultural resources. Impacts are considered potentially significant and will be analyzed further in an EIR.

POTENTIALLY SIGNIFICANT IMPACT

19 Utilities and Service Systems

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
Would the project:				
a. Require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b. Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c. Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d. Generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e. Comply with federal, state, and local management and reduction statutes and regulations related to solid waste?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Utilities and Service Systems Setting

Water Service

Water supply to the Southside 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.

Wastewater

EBMUD also provides wastewater treatment services to the Southside and the rest of the City of Berkeley. EBMUD operates the large diameter interceptor sewer generally running along the shoreline of the San Francisco Bay, and the Main Wastewater Treatment Plant (MWWTP) in Oakland. Each property owner in the City is responsible for delivering their sewage to the City's wastewater collection system. The City's wastewater collection system includes the lower lateral and the sewer mainlines in the street or in easements on private property. The City has approximately 456 miles of sanitary sewer mains, and over 30,000 lower laterals. The sewer mains range in age from 1 to over 100-years and vary in size from 6-inches to 48-inches in diameter (Berkeley 2012). The City operates and maintains its sewage collection system in accordance with the NPDES Permit No. CA0038466 issued by the SF Bay Regional Water Quality Control Board that expires on March 31, 2025.

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 Southside. 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. Waste generated in Berkeley is sent to the Altamont Landfill.

Impact Analysis

- a. *Would the project require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?*
- b. *Would the project have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years?*
- c. *Would the project result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?*

Development that could be facilitated by the proposed project would provide new residential units and eventually increase population in the Southside. Associated water demand would also increase. It is possible that new or expanded entitlements may be needed to meet water supply requirements associated with full buildout that could be facilitated by the proposed project. Therefore, this issue will be further investigated in the EIR.

EBMUD provides wastewater treatment services, and the City provides wastewater collection services, to the Southside. Development that could be facilitated by the proposed changes presented in the Southside Zoning Ordinance Updates facilitate adding new residential and non-

residential uses to the Southside. An increase in residential density would generate additional wastewater which may exceed the capacity of wastewater treatment and collection facilities operated by EBMUD and exceed the capacity of wastewater conveyance facilities operated by the City of Berkeley. The impacts to the wastewater treatment and conveyance systems and providers will be analyzed further in the EIR.

As discussed in Section 10, *Hydrology and Water Quality*, storm drainage facilities are adequate to serve the Southside. This impact is less than significant and further study in an EIR is not warranted.

Impacts related to electric power and natural gas use will be analyzed further in as part of the energy analysis in an EIR.

POTENTIALLY SIGNIFICANT IMPACT

- d. *Would the project generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?*
- e. *Would the project comply with federal, state, and local management and reduction statutes and regulations related to solid waste?*

The proposed project would intensify development within the Southside. New development would generate solid waste during construction and new residential uses would generate solid waste during operation and during move-in and move-out which may generate waste in excess of standards or in excess of the capacity of local infrastructure. The project could also impair attainment of solid waste reduction goals or conflict with statutes and regulations related to solid waste. Impacts are potentially significant and will be analyzed further in an EIR.

POTENTIALLY SIGNIFICANT IMPACT

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20 Wildfire

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project:				
a. Substantially impair an adopted emergency response plan or emergency evacuation plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b. Due to slope, prevailing winds, and other factors, exacerbate wildfire risks and thereby expose project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c. Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d. Expose people or structures to significant risks, including downslopes or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Wildfire Setting

A wildfire is a nonstructural fire that occurs in vegetative fuels, excluding prescribed fire. Wildfires can occur in undeveloped areas and spread to urban areas where the landscape and structures are not designed and maintained to be ignition resistant. A wildland-urban interface is an area where urban development is near open space or “wildland” areas. The potential for wildland fires represents a hazard where development is adjacent to open space or near wildland fuels or designated fire severity zones. Steep hillsides and varied topography also contribute to the risk of wildland fires.

The California Department of Forestry and Fire Protection (Cal Fire) has mapped areas of significant fire hazards in the state through its Fire and Resources Assessment Program. These maps place areas of the state into different fire hazard severity zones (FHSZ) based on a hazard scoring system using subjective criteria for fuels, fire history, terrain influences, housing density, and occurrence of severe fire weather where urban conflagration could result in catastrophic losses. As part of this mapping system, land where Cal Fire is responsible for wildland fire protection and generally located

in unincorporated areas is classified as a State Responsibility Area (SRA). Where local fire protection agencies, such as the City of Berkeley Fire Department (BFD), are responsible for wildfire protection, the land is classified as a Local Responsibility Area (LRA). Cal Fire currently identifies Berkeley as an LRA. In addition to establishing local or state responsibility for wildfire protection in a specific area, Cal Fire designates areas as very high fire hazard severity zones (VHFHSZ) or non-VHFHSZ. The project site is designated as VHFHSZ by the State of California. Cal Fire has identified a VHFHSZ across the eastern edge of the City of Berkeley, including across the eastern half of the main UC Berkeley campus and the eastern portion of the Southside Area (Cal Fire 2008).

The City of Berkeley has incorporated Cal Fire’s LRA map into its identification of fire hazard three zones within City limits (BMC Section 19.28.030):

- **Zone 1** encompasses the portions of the City not designated within Cal Fire’s VHFHS zone.
- **Zone 2** encompasses the portions of the City designated within the VHFHS zone and the Combined Hillside District, except the portions covered by Zone 2.
- **Zone 3** encompasses those areas designated in the VHFHS zone and the Environmental Safety--Residential Zoning District (ES-R). The BMC provides the following description the ES-R District: “Because of its substandard vehicular access, steep slopes, inadequate water pressure and proximity to the Hayward Fault and vegetated wildlands, the Panoramic Hill area is exceptionally vulnerable to severe damage or destruction from fire and earthquake hazards” (Section 23D.24.020).

Areas within Zones 2 and 3 encompass the City’s Wildland-Urban Interface Fire Area, an area designated as at significant risk from wildfires (BMC Section 19.28.030). As shown in Figure 12, the portion of the Southside Area that is east of College Avenue is within Zone 2. Moreover, Zone 3 abuts the Southside Area at its eastern edge.

Regulatory Setting

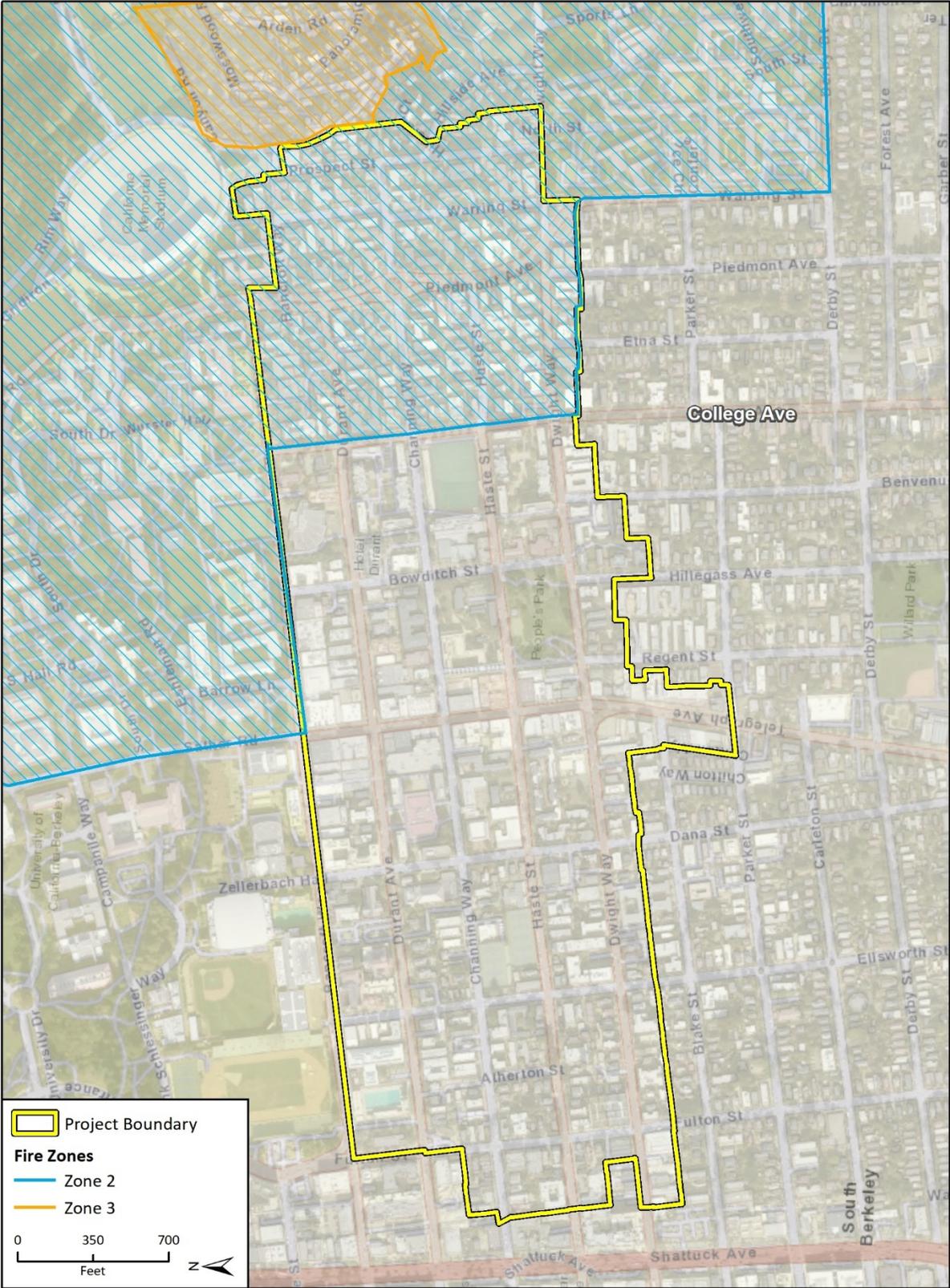
California Public Resources Code Fire Hazard Severity Zones

Public Resources Code (PRC) Sections 4201–4204 and Government Code Sections 51175–89 direct Cal Fire to map areas of significant fire hazards based on fuels, terrain, weather, and other relevant factors. These zones, referred to as fire hazard severity zones (FHSZ), define the application of various mitigation strategies to reduce risk associated with wildland fires.

California Building Code

As described in Section 9, *Hazards and Hazardous Materials*, 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 establishes regulations to safeguard against the hazards of fire, explosion, or dangerous conditions in new and existing buildings, structures, and premises. The Fire Code also establishes requirements intended to provide safety for and assistance to firefighters and emergency responders during emergency operations. The provisions of the Fire Code apply to the construction, alteration, movement, enlargement, replacement, repair, equipment, use and occupancy, location, maintenance, removal, and demolition of every building or structure throughout California. The Fire Code includes regulations regarding fire-resistance-rated construction, fire protection systems such as alarm and sprinkler systems, fire services features such as fire apparatus access roads, means of egress, fire safety during construction and demolition, and wildland-urban interface areas. The City of Berkeley has

Figure 12 Fire Hazard Zones



adopted the California Fire Code as part of its building regulations (BMC Chapter 19.48) and implements these standards through its building permit process.

In addition, in late 2005, the California Building Commission adopted CBC Chapter 7A (effective 2008), which require new buildings in VHFHS zones to use ignition resistant construction methods and materials. These new codes include provisions to improve the ignition resistance of buildings, especially from firebrands. (Cal Fire 2008).

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-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-16 Residential Density in the Hills. Consider changes to the existing residential zoning in high-risk, residential areas, such as the Hill Hazardous Fire Area, to reduce the vulnerability of these areas to future disasters.

Policy S-20 Mitigation of Potentially Hazardous Buildings. Pursue all feasible methods, programs, and financing to mitigate potentially hazardous 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.

City of Berkeley 2019 Local Hazard Mitigation Plan

The City of Berkeley 2019 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 2019b).

Berkeley Municipal Code

BMC Section 19.28.030 codifies Chapter 7A of the CBC and includes additional regulations related to construction within Zones 2 and 3 of the Wildland-Urban Interface Fire Area. The purpose of the requirements in this section is to “to establish minimum standards for the protection of life and property by increasing the ability of a building located in any Fire Hazard Severity Zone...or any building or structure in the Wildland-Urban Interface Fire Area to resist the intrusion of flame or burning embers projected by a vegetation fire and contributes to a systematic reduction in conflagration losses.” Requirements include the following:

- **Roofing.** Roofs shall be a Class A minimum and shall comply with the requirements of Chapter 7A and Chapter 15. Roofs shall have a roofing assembly installed in accordance with its listing and the manufacturer’s installation instructions. Wooden shakes and shingles are prohibited roof coverings regardless of the assembly rating of the roof system.
- **Spark Arrestors.** All chimneys of fireplaces, stoves, barbecues or heating appliances using solid fuel shall be provided with an approved spark arrestor whenever modification has been made to any of these appliances, or whenever a structure is re-roofed.
- **Underground utility connections.** For new construction, provisions shall be made for the undergrounding of all utilities serving the property, including but not limited to electrical, telephone and cable television, by the installation of appropriately sized underground conduits extending from the street property.
- **Fire Warning System.** All residential units shall be equipped with a Fire Warning System as specified by the residential smoke detector requirements of the current edition of the California Building Code and with an audible exterior alarm.
- **Automatic Fire Sprinklers.** Any new construction or new additions to existing structures requiring a permit determined to be \$100,000 or more in construction costs shall be required to install automatic fire sprinklers throughout the existing structure.
- **Utilities.** Utilities, pipes, furnaces, water heaters or other mechanical devices located in an exposed underfloor area of a building or structure shall be enclosed with material as required for exterior one-hour fire resistive construction. Adequate covered access openings for servicing and ventilation of such facilities shall be provided as required by appropriate codes
- **Control of brush or vegetation.** Brush and vegetation shall be controlled as required in the Berkeley Fire Code.
- **Public access roads and fire trails.** No person(s) shall use any public access road or fire trail for the storage of any construction material, stationary construction equipment, construction office, portable refuse container, or earth from any grading or excavating.

Impact Analysis

- a. *If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project substantially impair an adopted emergency response plan or emergency evacuation plan?*

Figure 12 shows that a portion of the Southside Area is within a VHFHS zone, identified as Berkeley Fire Zone 2. As described in Section 9, *Hazards and Hazardous Materials*, Figure 14 of the Berkeley General Plan identifies existing emergency access and evacuation routes in the Southside. Several streets in the Southside are designated as emergency access routes to move people and emergency response equipment in a disaster. College Avenue, Bancroft Way, Dwight Way, and Piedmont Avenue are all designated emergency access routes which provide connections between parcels within the VHFHS zone to other portions of the City.

Moreover, several City regulations would ensure that the access routes within the VHFHS zone would remain available in the event of an emergency, including evacuations during wildfire. General Plan Policy T-28 identifies required actions to preserve emergency access, including not installing diverters or speed humps on streets identified as Emergency Access and Evacuation Routes. BMC Section 19.28.030 prohibits storage of materials or structures, including construction equipment, at public access roads within the VHFHS zone. Therefore, while traffic increases associated with buildout of the proposed project would affect streets within the Southside Area, designated access routes would still serve as evacuation routes in case of emergency. Finally, as described in Section 9, *Hazards and Hazardous Materials*, since the Southside Area can be accessed by several designated access routes and since new development in the Southside is anticipated to be distributed throughout the Area, the traffic increase that would result from new development in the Southside would not substantially impact any one route.

The proposed project does not include policies or programs that would impair or interfere with emergency response or emergency evacuation. New housing under the proposed zoning amendments would be on private property and would therefore not obstruct existing roadways or require the construction of new roadways or access points. As discussed in Section 15, *Public Services*, development in the Southside 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 project would not impair or interfere with an emergency response or evacuation plan. Impacts would be less than significant and further analysis of this issue in an EIR is not warranted.

LESS THAN SIGNIFICANT IMPACT

- b. *If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project, due to slope, prevailing winds, and other factors, exacerbate wildfire risks and thereby expose project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?*
- c. *If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?*

The Southside Area is urbanized, largely consisting of concrete roads, driveways, parking lots, and structures. Existing vegetation within the Southside that could provide fuel for a wildfire is minimal.

However, wildfires may potentially occur in wildland and open space areas east of the Southside and spread to the Southside Area. In addition, the new housing allowed under the proposed project would introduce new potential ignition sources in the form of building materials (e.g., wood, stucco), vegetation for landscaping, vehicles, and small machinery (e.g., for typical residential and landscape maintenance). The proposed project could therefore expose greater numbers of Southside occupants to pollutant concentrations or the uncontrolled spread of wildfire. In addition, new development under the proposed project would require the installation and maintenance of infrastructure, such as new power lines, which could exacerbate fire risk.

However, the numerous fire hazard regulations detailed in the Regulatory Setting section would minimize impacts related to wildfire within the Southside Area. New development within the Southside Area would be required to comply with the California Fire Code. In addition, all new development within the VHFHS zone would be required to comply with BMC Section 19.28.030, which provides additional regulations to reduce fire hazards, including requirements related to materials of roofing and coverings for exposed utility connections, alarm and fire sprinkler systems, and control of brush and vegetation. BMC Section 19.28.030 also requires that all new utilities serving new construction, including electrical, telephone, and cable television, be installed underground. Moreover, development under the proposed project would be subject to review by the Berkeley Fire Department (BFD) prior to approval of building permits. The BFD's review would ensure that new construction would comply with applicable fire codes and regulations and would not exacerbate wildfire risk within the Southside. Impacts would be less than significant and further analysis of this issue in an EIR is not warranted.

LESS THAN SIGNIFICANT IMPACT

- d. *If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project expose people or structures to significant risks, including downslopes or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?*

As described in Section 10, *Hydrology and Water Quality*, the Southside Area is urbanized, largely consisting of impervious surfaces, including structures, parking lots, and roadways. Existing vegetation that could provide fuel for a wildfire within the Southside is limited to perimeter, yard, and street landscaping around surface concrete and structures. Development under the proposed project would not introduce new impervious areas to the extent that the rate or amount of surface runoff would substantially increase. Moreover, given that the Southside Area is relatively flat with slopes that range from zero to 15 percent, substantial downstream flooding or landslides are not expected to result from a wildfire within the Southside Area.

As described in the *Wildfire Setting* section above, the Southside Area is located within the western edge of the VHFHS zone. However, the Southside Area is developed with existing buildings, roadways, parking areas, and limited street and yard landscaping. The VHFHS zone stretches beyond the Southside further eastward and covers an area that includes steeper slopes, less development, and more vegetation than the Southside Area. This vegetated area includes Strawberry Canyon and Claremont Canyon. Wildfires that could occur within this area could result in increased risk for Southside occupants related to downslopes, downstream flooding, or landslides. However, this highly vegetated undeveloped area is relatively far (approximately 0.2 miles at its closest point) and not directly upslope from the Southside Area. In the event of a wildfire east and upslope from the Southside, runoff, flooding, and other post-fire slope instability would likely flow westwards towards the University of California campus, and not toward the Southside. Therefore, hazards from fires

outside the Southside Area are also not anticipated to substantially impact the development within the Southside. Impacts would be less than significant and further analysis of this issue in an EIR is not warranted.

LESS THAN SIGNIFICANT IMPACT

21 Mandatory Findings of Significance

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
--	--------------------------------	----------------------------------------------------	------------------------------	-----------

Does the project:

- | | | | | |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---|---|---|---|
| a. Have the potential to substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory? | ■ | □ | □ | □ |
| b. Have impacts that are individually limited, but cumulatively considerable? (“Cumulatively considerable” means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)? | ■ | □ | □ | □ |
| c. Have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly? | ■ | □ | □ | □ |

- a. *Does the project have the potential to substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?*

As noted under Section 4, *Biological Resources*, development allowed by the proposed project may affect special-status species. Mitigation measures BIO-1 and BIO-2 would reduce these potential impacts to a less than significant level. All other impacts related to biological resources would be less than significant or no impact would occur. Therefore, with incorporation of mitigation, the proposed project would not result in substantially reduced habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, elimination of a plant or animal community, or reduced number or restricted range of a rare or endangered plant or animal.

As discussed in Section 5, *Cultural Resources*, development under the proposed project could involve demolition of historical resources or affect cultural resources. Therefore, impacts could be significant and will be analyzed further in an EIR.

POTENTIALLY SIGNIFICANT IMPACT

- b. *Does the project have impacts that are individually limited, but cumulatively considerable? (“Cumulatively considerable” means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?*

As described in Sections 3, 5, 6, 8, 11, 13, 14, 15, 17, and 19 of this Initial Study, development allowed by the proposed project could result in significant cumulative impacts to air quality, cultural resources, energy, GHG, land use, noise, population & housing, public services, transportation, and utilities. These impacts will be analyzed further in an EIR.

The proposed project would have no impact, a less than significant impact, or a less than significant impact after mitigation with respect to all other environmental issues discussed in the checklist. There are no other known projects in development or under consideration that would affect those other resource areas.

POTENTIALLY SIGNIFICANT IMPACT

- c. *Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?*

In general, impacts to human beings are associated with air quality, greenhouse gas emissions/climate change, hazards and hazardous materials, traffic safety, geologic hazards, and noise impacts. As described in sections 7 and 9 of the Environmental Checklist, impacts related to geologic hazards, other hazards, and hazardous materials would be less than significant. However, as detailed in the preceding responses, development allowed by the proposed Southside Zoning Ordinance amendments could result in effects on air quality, greenhouse gasses, traffic, and noise that could be significant and will be analyzed further in an EIR.

POTENTIALLY SIGNIFICANT IMPACT

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Appendix A

Buildout Assumptions Methodology

Buildout Assumptions Methodology

The maximum potential 20-year buildout scenario that may occur with proposed zoning modifications are shown in the table on the following page. The buildout scenario is based on a housing capacity analysis of the Southside, as described below, and provides the basis for analysis in the EIR. As shown in the table, the proposed project could result in up to 4,597 new units or 10,344 new residents in the Southside compared to existing conditions. Compared to what would be allowed under existing zoning with use permits (which enable additional building height over base existing zoning), the proposed project could add up to 793 units or 1,784 residents.

The buildout scenario (number of units and people identified for CEQA analysis) was based on the following methodology and assumptions.

Buildout Scenario Methodology

The project team surveyed parcels in the Southside and eliminated the following types of sites from consideration for future development:

- UC-owned parcels
- Known designated historical resources
- Recent developments (built within the last 10 years; currently entitled; or currently under construction)
- Existing hotels
- Existing occupied religious or cultural institutional buildings, such as churches or student faith organizations that are currently in use (parking lots or vacant structures owned by religious or cultural institutions are considered potential development parcels in the analysis).

Of those remaining, the following types of potential development sites were identified and analyzed for housing capacity if built at a maximum intensity scenario under proposed zoning modifications, as well as a maximum intensity scenario under existing zoning, with totals summarized in the table:

- Surface parking lots
- One- and two-story non-historic, non-residential buildings (retail, office, services, restaurant, or other), either occupied or vacant.

In addition, the analysis summarized in the above table assumes a limited number of parcels with existing residential use could redevelop over the 20-year time horizon studied in the EIR. Since it is difficult to predict which of these specific parcels could develop, the project team did not identify specific parcels and instead assumed a net increase that could occur on residential parcels across the entire Southside. Replacing existing housing is not a focus of the study and is not anticipated or desired to occur at high levels, under either the existing or proposed scenarios. Most existing housing in the Southside is occupied and is built at three and four stories (a mix of renter-occupied and owner-occupied), along with some housing built at five stories or higher (mostly renter-occupied), and a small amount of one-and two-story housing (mostly owner-occupied). This existing occupied housing is assumed to be less likely to redevelop than identified surface lots, vacant properties, or one- and two-story non-residential sites, given the challenges of the existing retail real estate development market; the strength of the existing residential real estate market; the

Maximum Buildout Scenarios Under Proposed and Existing Zoning

	Number of Potential Lots		Total Lot Area Available (square feet)		Estimated Max Units			Estimated Max Beds/People		
	Existing Zoning	Proposed Zoning	Existing Zoning	Proposed Zoning	Existing Zoning	Existing Zoning (with Use Permit)	Proposed Zoning	Existing Zoning	Existing Zoning (with Use Permit)	Proposed Zoning
	C-SA (South Area Commercial)	5	5	31,612	31,612	99	99	99	222	222
C-T(n) (Telegraph Avenue Commercial)	34	34	225,072	225,072	1,850	2,220	2,035	4,163	4,996	4,580
C-T(s) (Telegraph Avenue Commercial)	6	6	57,913	57,913	286	381	333	643	857	750
R-3 (Multiple-family Residential)	4	1	17,560	7,928	33	33	38	74	74	86
R-S (Residential High Density Subarea)	9	5	89,884	45,547	310	438	296	698	985	665
R-SMU (Residential Mixed Use Subarea)	6	13	58,928	112,896	245	433	993	551	975	2,235
Additional units, 12-story	N/A	N/A	N/A	N/A	N/A	N/A	503	N/A	N/A	1,131
Additional units, existing residential sites	N/A	N/A	N/A	N/A	200	200	300	450	450	675
Total	64	64	480,968	480,968	3,023	3,804	4,597	6,801	8,560	10,344

challenges of developing existing occupied residential sites as compared to vacant or one-story non-residential parcels; and the relatively small increment of additional potential property value between most existing housing and its potential zoning maximum.

The City's housing and anti-displacement goals aim to retain and protect existing housing types – including market-rate rental, rent-controlled rental, owner-occupied, and various types of student-oriented housing such as co-ops and fraternities or sororities.

Buildout Scenario Assumptions

Maximum potential buildout summarized was calculated consistent with the proposed zoning summarized in Table 3 of the Initial Study, existing zoning summarized in Table 1 of the Initial Study, and prevailing development and architecture practices. Assumptions for all zoning districts in both existing and proposed scenarios are as follows:

- Capacity of identified potential development sites (surface lots and one- to two-story non-residential) was calculated at the maximum capacity allowed by zoning both with and without Use Permits in the existing scenario. The proposed scenario does not include use permit exceptions for height.
- Assumption of 35% State Density Bonus was applied to base project zoning in all scenarios (existing without Use Permit, Existing with Use Permit, and Proposed).
- Assumption of 650 square foot average unit size was used in both existing and proposed scenarios, with a 20% factor (130 square feet per unit) included to account for corridor, circulation, and utility space, for a total of 780 square feet of allocated space per unit.
- Assumption of 2.25 beds/people per unit (or approximately 290 square feet per bed/person), in both existing and proposed scenarios.
- Assumption of three 12-story buildings that could be built on larger lots in the C-T(n) or R-SMU Districts, with assumed lot sizes of 11,000sf, 18,000sf, 25,000sf for the three buildings, which is consistent with parcel sizes that are available for development in the C-T(n) and R-SMU either on existing lots or through consolidation of neighboring parcels. Lot efficiency for the 12-story buildings is assumed to be 85% for the upper 6 stories, and 95% for the bottom six stories. Limits on the number of 12-story buildings, their location and other development standards will be discussed as part of the zoning ordinance amendments.

In addition, the buildout assumptions reflect an assumption that net new housing could be developed in place of existing housing. Specific sites have not been identified and it is assumed that they could occur on residential sites throughout the Southside including:

- 300 net new units and 675 beds/people assumed in proposed zoning scenario
- 200 net units and 450 beds/people assumed in existing zoning scenario, reflecting moderately lower development potential and feasibility in existing zoning.

Buildout Scenario Parcel-specific Assumptions by Zone

Additional zone-specific development assumptions for identified potential development sites are as follows, for both the proposed and existing zoning scenarios. Assumptions are based on existing and proposed zoning scenarios as described in Table 3 (Proposed Zoning Ordinance Modifications) and Table 1 (Summary of Existing Southside Zoning District Standards) in the Initial Study. The existing Southside zoning includes a development pathway for projects that utilize use permits to achieve additional height, as well as for those projects that do not. Therefore, the buildout scenarios include

calculations for both conditions: projects developed under existing zoning with use permits (and therefore additional height), as well as projects developed under existing zoning without use permits.

C-T North of Dwight (n) and C-T South of Dwight (s) Development Assumptions

- Height of six stories in proposed C-T(n) scenario and existing C-T(n) scenario without use permit, height of seven stories in existing C-T(n) scenario with use permits; height of four stories in proposed C-T(s) scenarios and existing C-T(s) scenario without use permits, height of five stories in existing C-T(s) scenario with use permits.
- Half-story of ground-floor residential and half-story of ground-floor retail in proposed C-T(n) and C-T(s) scenarios; no ground-floor residential and one floor of ground-floor retail in all existing C-T(n) and C-T(s) scenarios.
- Lot efficiency (lot coverage and upper story stepbacks) of 95% in proposed and all existing scenarios – 100% lot coverage allowed in existing and proposed, but 95% assumed to account for upper story articulation and separation from neighboring buildings.
- No car parking, existing and proposed scenarios.

R-SMU Development Assumptions

- Height of four stories residential in existing scenario without use permits; five stories residential in existing scenario with use permits; six stories residential in proposed scenario.
- No ground-floor retail assumed in existing or proposed scenarios.
- Lot efficiency (lot coverage and upper story stepbacks) of 60% existing scenario without use permit; 85% in proposed scenario and existing scenario use permit.
- No car parking, existing and proposed scenarios.

R-S Development Assumptions

- Height of three stories residential in existing scenario without use permit; four stories residential in existing scenario with use permit; five stories residential in proposed scenario.
- Lot efficiency (lot coverage and upper story stepbacks) of 70% in existing scenario; 75% in proposed scenario and existing scenario with use permit.
- No car parking, proposed scenario; for existing scenario, R-S sites within the existing Car-Free Housing Zone are assumed to have no car parking, while R-S sites outside the existing Car-Free zone are assumed to have one car parking space per unit at 300 square feet per space.

C-SA Development Assumptions

- Height of six stories in all existing and proposed scenarios.
- Lot efficiency (lot coverage and upper story stepbacks) of 50% in all existing and proposed scenarios.
- One car parking space per unit at 300 square feet per space in all existing and proposed scenarios.

R-3 Development Assumptions

- Height of three stories in all existing scenarios; height of four stories in proposed scenario.
- Lot efficiency (lot coverage and upper story stepbacks) of 50% in all existing scenarios, 70% in proposed scenario.
- No parking, proposed scenario; one car parking space per unit at 300 square feet per space, all existing scenarios.

Retail Space Reduction Assumptions

The analysis estimates a reduction of up to 130,000 square feet of retail space in the Southside. This estimate assumes that the potential development sites (one- and two-story non-historic, non-residential buildings as described on page A-1) in the C-T district would be redeveloped with residential in the back half of the ground floor. It does not assume conversion of existing ground floor retail space to residential. Further, while this analysis assumes a reduction in overall retail space in the Southside, it is not anticipated that the number of actual storefronts would be reduced but that stores would have a smaller footprint (reduced space per storefront).

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Appendix B

Special Status Species in the Vicinity of the Southside Area

Special-Status Species in the Vicinity of the Southside

Local, state, and federal agencies regulate special-status species and require an assessment of their presence or potential presence to be conducted on-site prior to the approval of any proposed development on a property. Assessments for the potential occurrence of special-status species are based upon known ranges, habitat preferences for the species, species occurrence records from the CNDDDB species occurrence records from other sites in the vicinity of the Southside Area, and previous reports for the Southside Area. The potential for each special status species to occur in the Southside Area was evaluated according to the following criteria:

- **Not Expected.** Habitat on and adjacent to the site is clearly unsuitable for the species' requirements (foraging, breeding, cover, substrate, elevation, hydrology, plant community, site history, disturbance regime).
- **Low Potential.** Few of the habitat components meeting the species requirements are present, and/or the majority of habitat on and adjacent to the site is unsuitable or of very poor quality. The species is not likely to be found on the site.
- **Moderate Potential.** Some of the habitat components meeting the species requirements are present, and/or only some of the habitat on or adjacent to the site is unsuitable. The species has a moderate probability of being found on the site.
- **High Potential.** All of the habitat components meeting the species requirements are present and/or most of the habitat on or adjacent to the site is highly suitable. The species has a high probability of being found on the site.
- **Present.** Species is observed on the site or has been recorded (e.g., CNDDDB, other reports) on the site recently (within the last 5 years).

Special-Status Animal Species Known to Occur or with Potential to Occur in the Vicinity of the Southside Area

Scientific Name Common Name	Status Fed/State Global Rank/ State Rank CDFW	Habitat Requirements	Potential to Occur in Southside	Habitat Suitability/Observations
Invertebrates				
<i>Bombus occidentalis</i> Western bumble bee	___/CE G2G3/S1	Once common and widespread, species has declined precipitously from central CA to southern B.C., perhaps from disease.	Low Potential	There is one known occurrence with a range loosely overlapping the Southside Area and flowering plants are present year-round within developed and landscaped areas.

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Scientific Name Common Name	Status Fed/State Global Rank/ State Rank CDFW	Habitat Requirements	Potential to Occur in Southside	Habitat Suitability/Observations
<i>Callophrys mossii bayensis</i> San Bruno elfin butterfly	FE/___ G4T1/S1	Coastal, mountainous areas with grassy ground cover, mainly in the vicinity of San Bruno Mountain, San Mateo County. Colonies are located on steep, north-facing slopes within the fog belt. Larval host plant is <i>Sedum spathulifolium</i> .	Not Expected	Suitable coastal habitat and host plant species are not present within the Southside Area. This species is not expected to occur in a fully developed urban area.
<i>Euphydryas editha bayensis</i> Bay checkerspot butterfly	FT/___ G5T1/S1	Restricted to native grasslands on outcrops of serpentine soil in the vicinity of San Francisco Bay. <i>Plantago erecta</i> is the primary host plant; <i>Castilleja densiflorus</i> & <i>C. exserta</i> are the secondary host plants.	Not Expected	Suitable habitat and host plant species area not present within the Southside Area. This species is not expected to occur in a fully developed urban area.
<i>Plebejus icarioides missionensis</i> Mission blue butterfly	FE/___ G5T1/S1	Inhabits grasslands of the San Francisco Peninsula. Three larval host plants: <i>Lupinus albifrons</i> , <i>L. variicolor</i> , and <i>L. formosus</i> , of which <i>L. albifrons</i> is favored.	Not Expected	Suitable habitat and host plant species area not present within the Southside Area. This species is not expected to occur in a fully developed urban area.
<i>Speyeria callippe</i> callippe silverspot butterfly	FE/___ G5T1/S1	Restricted to the northern coastal scrub of the San Francisco Peninsula. Hostplant is <i>Viola pedunculata</i> . Most adults found on E-facing slopes; males congregate on hilltops in search of females.	Not Expected	Suitable habitat and host plant species area not present within the Southside Area. This species is not expected to occur in a fully developed urban area.
Amphibians				
<i>Ambystoma californiense</i> California tiger salamander	FT/ST G2G3/S2S3 WL	Central Valley DPS federally listed as threatened. Santa Barbara and Sonoma counties DPS federally listed as endangered. Need underground refuges, especially ground squirrel burrows, and vernal pools or other seasonal water sources for breeding.	Not Expected	Suitable aquatic habitat is not present, and the Southside Area is surround by development and previously disturbed land. This species is not expected to occur in a fully developed urban area.
<i>Dicamptodon ensatus</i> California giant salamander	___/___ G3/S2S3 SSC	Known from wet coastal forests near streams and seeps from Mendocino County south to Monterey County, and east to Napa County. Aquatic larvae found in cold, clear streams, occasionally in lakes and ponds. Adults known from wet forests under rocks and logs near streams and lakes.	Not Expected	Suitable aquatic habitat is not present, and the Southside Area is surround by development and previously disturbed land. This species is not expected to occur in a fully developed urban area.

Scientific Name Common Name	Status Fed/State Global Rank/ State Rank CDFW	Habitat Requirements	Potential to Occur in Southside	Habitat Suitability/Observations
<i>Rana boylei</i> foothill yellow-legged frog	___/SC G3/S3 SSC	Partly-shaded, shallow streams and riffles with a rocky substrate in a variety of habitats. Needs at least some cobble-sized substrate for egg-laying. Needs at least 15 weeks to attain metamorphosis.	Not Expected	Suitable aquatic habitat is not present, and the Southside Area is surrounded by development and previously disturbed land. This species is not expected to occur in a fully developed urban area.
<i>Rana draytonii</i> California red-legged frog	FT/___ G2G3/S2S3 SSC	Lowlands and foothills in or near permanent sources of deep water with dense, shrubby or emergent riparian vegetation. Requires 11-20 weeks of permanent water for larval development. Must have access to estivation habitat.	Not Expected	Suitable aquatic and upland habitat is not present, and the Southside Area is surrounded by development and previously disturbed land. Additionally, no critical habitat is in the vicinity of the Southside Area. This species is not expected to occur in a fully developed urban area.
Reptiles				
<i>Emys marmorata</i> western pond turtle	___/___ G3G4/S3 SSC	A thoroughly aquatic turtle of ponds, marshes, rivers, streams and irrigation ditches, usually with aquatic vegetation, below 6000 ft elevation. Needs basking sites and suitable (sandy banks or grassy open fields) upland habitat up to 0.5 km from water for egg-laying.	Not Expected	Suitable aquatic habitat is not present, and the Southside Area is surrounded by development and previously disturbed land. This species is not expected to occur in a fully developed urban area.
<i>Masticophis lateralis euryxanthus</i> Alameda whipsnake	FT/ST G4T2/S2	Typically found in chaparral and scrub habitats but will also use adjacent grassland, oak savanna and woodland habitats. Mostly south-facing slopes and ravines, with rock outcrops, deep crevices or abundant rodent burrows, where shrubs form a vegetative mosaic with oak trees and grasses.	Not Expected	Suitable chaparral or scrub habitats are not present, and the Southside Area is surrounded by development and previously disturbed land. This species is not expected to occur in a fully developed urban area.
<i>Thamnophis sirtalis tetrataenia</i> San Francisco gartersnake	FE/SE G5T2Q/S2 FP	Vicinity of freshwater marshes, ponds and slow-moving streams in San Mateo County and extreme northern Santa Cruz County. Prefers dense cover and water depths of at least one foot. Upland areas near water are also very important.	Not Expected	Suitable aquatic habitat is not present, and the Southside Area is surrounded by development and previously disturbed land. This species is not expected to occur in a fully developed urban area.

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Scientific Name Common Name	Status Fed/State Global Rank/ State Rank CDFW	Habitat Requirements	Potential to Occur in Southside	Habitat Suitability/Observations
Birds				
<i>Accipiter cooperii</i> Cooper's hawk	_/_ G5/S3 SSC	Woodland, chiefly of open, interrupted or marginal type. Nest sites mainly in riparian growths of deciduous trees, as in canyon bottoms on river flood-plains; also, live oaks.	Not Expected	Suitable riparian nesting habitat is not present. Trees throughout the Southside Area may provide foraging/perching habitat.
<i>Aquila chrysaetos</i> golden eagle	_/_ G5/S3 FP, WL	Rolling foothills, mountain areas, sage-juniper flats, and desert. Cliff-walled canyons provide nesting habitat in most parts of range; also, large trees in open areas.	Not Expected	Suitable nesting and foraging habitat are not present. This species is not expected to occur in a fully developed urban area.
<i>Asio flammeus</i> short-eared owl	_/_ G5/S3 SSC	Found in swamp lands, both fresh and salt; lowland meadows; irrigated alfalfa fields. Tule patches/tall grass needed for nesting/daytime seclusion. Nests on dry ground in depression concealed in vegetation.	Not Expected	Suitable swamp habitat is not present. This species is not expected to occur in a fully developed urban area.
<i>Athene cunicularia</i> burrowing owl	_/_ G4/S3 SSC	Open, dry annual or perennial grasslands, deserts, and scrublands characterized by low-growing vegetation. Subterranean nester, dependent upon burrowing mammals, most notably, the California ground squirrel.	Not Expected	Suitable open grassland habitat is not present. This species is not expected to occur in a fully developed urban area.
<i>Branta hutchinsii leucopareia</i> cackling (=Aleutian Canada) goose	DL/_ G5T3/S3 WL	Winters on lakes and inland prairies. Forages on natural pasture or that cultivated to grain; loaf on lakes, reservoirs, ponds.	Not Expected	Suitable habitat is not present within the Southside Area. This species is not expected to occur in a fully developed urban area.
<i>Charadrius alexandrinus nivosus</i> western snowy plover	FT/_ G3T3/S2S3 SSC	Sandy beaches, salt pond levees & shores of large alkali lakes. Needs sandy, gravelly or friable soils for nesting.	Not Expected	Suitable habitat is not present within the Southside Area. This species is not expected to occur in a fully developed urban area.
<i>Circus cyaneus</i> northern harrier	_/_ G5/S3 SSC	Coastal salt & freshwater marsh. Nest and forage in grasslands, from salt grass in desert sink to mountain cienagas. Nests on ground in shrubby vegetation, usually at marsh edge; nest built of a large mound of sticks in wet areas.	Not Expected	Suitable coastal and marsh habitat is not present. This species is not expected to occur in a fully developed urban area.

Scientific Name Common Name	Status Fed/State Global Rank/ State Rank CDFW	Habitat Requirements	Potential to Occur in Southside	Habitat Suitability/Observations
<i>Coturnicops noveboracensis</i> yellow rail	___/___ G4/S1S2 SSC	Summer resident in eastern Sierra Nevada in Mono County. Freshwater marshlands.	Not Expected	Suitable habitat is not present within the Southside Area. This species is not expected to occur in a fully developed urban area.
<i>Elanus leucurus</i> white-tailed kite	___/___ G5/S3S4 FP	Rolling foothills and valley margins with scattered oaks & river bottomlands or marshes next to deciduous woodland. Open grasslands, meadows, or marshes for foraging close to isolated, dense-topped trees for nesting and perching.	Not Expected	Suitable habitat is not present within the Southside Area. This species is not expected to occur in a fully developed urban area.
<i>Falco peregrinus anatum</i> American peregrine falcon	DL/DL G4T4/S3S4 FP	Near wetlands, lakes, rivers, or other water; on cliffs, banks, dunes, mounds; also, human-made structures. Nest consists of a scrape or a depression or ledge in an open site.	Low Potential	Trees throughout the Southside Area may provide foraging/perching habitat. There is one known occurrence with a range that loosely overlaps the eastern boundary of the Southside Area at Paramount Avenue.
<i>Geothlypis trichas sinuosa</i> saltmarsh common yellowthroat	___/___ G5T3/S3 SSC	Resident of the San Francisco Bay region, in fresh and salt water marshes. Requires thick, continuous cover down to water surface for foraging; tall grasses, tule patches, willows for nesting.	Not Expected	Suitable marsh habitat is not present within the Southside Area. This species is not expected to occur in a fully developed urban area.
<i>Haliaeetus leucocephalus</i> bald eagle	DL/SE G5/S3 FP	Ocean shore, lake margins, and rivers for both nesting and wintering. Most nests within 1 mile of water. Nests in large, old-growth, or dominant live tree with open branches, especially ponderosa pine. Roosts communally in winter.	Not Expected	Suitable habitat on shores and lake margins is not present. This species is not expected to occur in a fully developed urban area.
<i>Laterallus jamaicensis coturniculus</i> California black rail	___/ST G3G4T1/S1 FP	Inhabits freshwater marshes, wet meadows and shallow margins of saltwater marshes bordering larger bays. Needs water depths of about 1 inch that do not fluctuate during the year and dense vegetation for nesting habitat.	Not Expected	Suitable marsh habitat is not present within the Southside Area. This species is not expected to occur in a fully developed urban area.
<i>Melospiza melodia maxillaris</i> Suisun song sparrow	___/___ G5T3/S3 SSC	Resident of brackish-water marshes surrounding Suisun Bay. Inhabits cattails, tules and other sedges, and Salicornia; also known to frequent tangles bordering sloughs.	Not Expected	Suitable marsh habitat is not present within the Southside Area. This species is not expected to occur in a fully developed urban area.

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Scientific Name Common Name	Status Fed/State Global Rank/ State Rank CDFW	Habitat Requirements	Potential to Occur in Southside	Habitat Suitability/Observations
<i>Melospiza melodia pusillula</i> Alameda song sparrow	___/___ G5T2?/S2S3 SSC	Resident of salt marshes bordering south arm of San Francisco Bay. Inhabits Salicornia marshes; nests low in <i>Grindelia</i> bushes (high enough to escape high tides) and in <i>Salicornia</i> .	Not Expected	Suitable marsh habitat is not present within the Southside Area. This species is not expected to occur in a fully developed urban area.
<i>Melospiza melodia samuelis</i> San Pablo song sparrow	___/___ G5T2/S2 SSC	Resident of salt marshes along the north side of San Francisco and San Pablo bays. Inhabits tidal sloughs in the <i>Salicornia</i> marshes; nests in <i>Grindelia</i> bordering slough channels.	Not Expected	Suitable marsh habitat is not present within the Southside Area. This species is not expected to occur in a fully developed urban area.
<i>Phalacrocorax auritus</i> double-crested cormorant	None/None G5/S4 WL	Colonial nester on coastal cliffs, offshore islands, and along lake margins in the interior of the state. Nests along coast on sequestered islets, usually on ground with sloping surface, or in tall trees along lake margins.	Not Expected	Suitable habitat is not present within the Southside Area. This species is not expected to occur in a fully developed urban area.
<i>Rallus obsoletus</i> California Ridgway's rail	FE/SE G5T1/S1 FP	Salt water and brackish marshes traversed by tidal sloughs near San Francisco Bay. Associated with abundant growths of pickleweed but feeds away from cover on invertebrates from mud-bottomed sloughs.	Not Expected	Suitable marsh habitat is not present within the Southside Area. This species is not expected to occur in a fully developed urban area.
<i>Rynchops niger</i> black skimmer	___/___ G5/S2 SSC	Nests on gravel bars, low islets, and sandy beaches, in unvegetated sites. Nesting colonies usually less than 200 pairs.	Not Expected	Suitable habitat is not present within the Southside Area. This species is not expected to occur in a fully developed urban area.
<i>Sternula antillarum browni</i> California least tern	FE/SE G4T2T3Q/S2 FP	Nests along the coast from San Francisco Bay south to northern Baja California. Colonial breeder on bare or sparsely vegetated, flat substrates: sand beaches, alkali flats, landfills, or paved areas.	Not Expected	Suitable coastal habitat is not present within the Southside Area. This species is not expected to occur in a fully developed urban area.
<i>Xanthocephalus</i> yellow-headed blackbird	___/___ G5/S3 SSC	Nests in freshwater emergent wetlands with dense vegetation and deep water. Often along borders of lakes or ponds. Nests only where large insects such as Odonata are abundant, nesting timed with maximum emergence of aquatic insects.	Not Expected	Suitable wetland habitat is not present within the Southside Area. This species is not expected to occur in a fully developed area.

Scientific Name Common Name	Status Fed/State Global Rank/ State Rank CDFW	Habitat Requirements	Potential to Occur in Southside	Habitat Suitability/Observations
Mammals				
<i>Antrozous pallidus</i> pallid bat	___/___ G5/S3 SSC	Deserts, grasslands, shrublands, woodlands and forests. Most common in open, dry habitats with rocky areas for roosting. Roosts must protect bats from high temperatures. Very sensitive to disturbance of roosting sites.	Low Potential	Suitable roosting habitat for this species may be present within the Southside Area. Occurrence records are shown in a range loosely spanning the entirety of the Southside Area.
<i>Corynorhinus townsendii</i> Townsend's big-eared bat	___/___ G3G4/S2 SSC	Throughout California in a wide variety of habitats. Most common in mesic sites. Roosts in the open, hanging from walls and ceilings. Roosting sites limiting. Extremely sensitive to human disturbance.	Low Potential	Suitable roosting habitat for this species may be present within the Southside Area. Occurrence records are shown in a range loosely spanning the entirety of the Southside Area.
<i>Lasiurus blossevillii</i> western red bat	___/___ G5/S3 SSC	Roosts primarily in trees, 2-40 ft above ground, from sea level up through mixed conifer forests. Prefers habitat edges and mosaics with trees that are protected from above and open below with open areas for foraging.	Not Expected	Suitable habitat is not present within the Southside Area. This species is not expected to occur in a fully developed urban area.
<i>Microtus californicus sanpabloensis</i> San Pablo vole	___/___ G5T1T2/S1S2 SSC	Saltmarshes of San Pablo Creek, on the south shore of San Pablo Bay. Constructs burrow in soft soil. Feeds on grasses, sedges and herbs. Forms a network of runways leading from the burrow.	Not Expected	Suitable saltmarsh habitat is not present within the Southside Area. This species is not expected to occur in a fully developed urban area.
<i>Neotoma fuscipes annectens</i> San Francisco dusky-footed woodrat	___/___ G5T2T3/S2S3 SSC	Forest habitats of moderate canopy & moderate to dense understory. May prefer chaparral & redwood habitats. Constructs nests of shredded grass, leaves & other material. May be limited by availability of nest-building materials.	Not Expected	Suitable habitat is not present within the Southside Area. This species is not expected to occur in a fully developed urban area.
<i>Nyctinomops macrotis</i> big free-tailed bat	___/___ G5/S3 SSC	Low-lying arid areas in Southern California. Need high cliffs or rocky outcrops for roosting sites. Feeds principally on large moths.	Low Potential	Suitable roosting habitat for this species may be present within the Southside Area. Occurrence records are shown in a range loosely spanning the entirety of the Southside Area.

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Scientific Name Common Name	Status Fed/State Global Rank/ State Rank CDFW	Habitat Requirements	Potential to Occur in Southside	Habitat Suitability/Observations
<i>Reithrodontomys raviventris</i> salt-marsh harvest mouse	FE/SE G1G2/S1S2 FP	Only in the saline emergent wetlands of San Francisco Bay and its tributaries. Pickleweed is primary habitat but may occur in other marsh vegetation types and in adjacent upland areas. Does not burrow; builds loosely organized nests. Requires higher areas for flood escape.	Not Expected	Suitable wetland habitat is not present within the Southside Area. This species is not expected to occur in a fully developed urban area.
<i>Scapanus latimanus parvus</i> Alameda Island mole	___/___ G5THQ/SH SSC	Only known from Alameda Island. Found in a variety of habitats, especially annual and perennial grasslands. Prefers moist, friable soils. Avoids flooded soils.	Not Expected	Suitable habitat is not present within the Southside Area. This species is not expected to occur in a fully developed urban area.
<i>Sorex vagrans halicoetes</i> salt-marsh wandering shrew	___/___ G5T1/S1 SSC	Saltmarshes of the south arm of San Francisco Bay. Medium high marsh 6-8 ft above sea level where abundant driftwood is scattered among Salicornia.	Not Expected	Suitable saltmarsh habitat is not present within the Southside Area. This species is not expected to occur in a fully developed urban area.
<i>Taxidea taxus</i> American badger	___/___ G5/S3 SSC	Most abundant in drier open stages of most shrub, forest, and herbaceous habitats, with friable soils. Needs sufficient food, friable soils and open, uncultivated ground. Preys on burrowing rodents. Digs burrows.	Not Expected	Suitable habitat is not present within the Southside Area. This species is not expected to occur in a fully developed urban area.
<i>Zapus trinotatus orarius</i> Point Reyes jumping mouse	___/___ G5T1T3Q/S1S3 SSC	Primarily in bunch grass marshes on the uplands of Point Reyes. Also present in coastal scrub, grassland, and meadows. Eats mainly grass seeds w/ some insects & fruit taken. Builds grassy nests on ground under vegetation, burrows in winter	Not Expected	Suitable bunch grass marsh habitat is not present within the Southside Area. This species is not expected to occur in a fully developed urban area.

FT = Federally Threatened SE = State Endangered
 FC = Federal Candidate Species ST = State Threatened
 FE = Federally Endangered SR = State Rare
 FS = Federally Sensitive SC = State Candidate Species

G-Rank/S-Rank = Global Rank and State Rank as per NatureServe and CDFW's CNDDDB RareFind 5.

SSC = CDFW Species of Special Concern FP = Fully Protected

Sources: CNDDDB (CDFW 2020a); IPaC (USFWS 2020b)

Special-Status Plant Species Known to Occur or with Potential to Occur in the Vicinity of the Southside Area

Scientific Name Common Name	Status Fed/State Global Rank/ State Rank CRPR	Habitat Requirements	Potential to Occur in Southside	Habitat Suitability/Observations
<i>Allium peninsulare</i> var. <i>franciscanum</i> Franciscan onion	—/— G5T1/S1 1B.2	Cismontane woodland, valley and foothill grassland. Clay soils; often on serpentine; sometimes on volcanics. Dry hillsides. 5-350 m.	Not Expected	Suitable natural vegetation communities and appropriate soils are not present. Species not expected to be present in a fully developed urban area.
<i>Amorpha californica</i> var. <i>napensis</i> Napa false indigo	___/ G4T2/S2 1B.2	Broadleaved upland forest, chaparral, cismontane woodland. Openings in forest or woodland or in chaparral. Perennial deciduous shrub. 30-735 m.	Not Expected	Suitable natural vegetation communities and appropriate soils are not present. Species not expected to be present in a fully developed urban area.
<i>Amsinckia lunaris</i> bent-flowered fiddleneck	—/— G2G3/S2S3 1B.2	Cismontane woodland, valley and foothill grassland, coastal bluff scrub. 3-795 m.	Not Expected	Suitable natural vegetation communities and appropriate soils are not present. Species not expected to be present in a fully developed urban area.
<i>Arctostaphylos franciscana</i> Franciscan manzanita	FE/___ G1/S1 1B.1	Chaparral. Serpentine outcrops in chaparral. 30-215 m. perennial evergreen shrub. Blooms Feb-Apr	Not Expected	Suitable natural vegetation communities and appropriate soils are not present. Species not expected to be present in a fully developed urban area.
<i>Arctostaphylos imbricata</i> San Bruno Mountain manzanita	___/SE G1/S1 1B.1	Chaparral, coastal scrub. Mostly known from a few sandstone outcrops in chaparral. 275-370 m. perennial evergreen shrub. Blooms Feb-May	Not Expected	Suitable natural vegetation communities and appropriate soils are not present. Species not expected to be present in a fully developed urban area.
<i>Arctostaphylos montana</i> ssp. <i>ravenii</i> Presidio manzanita	FE/SE G3T1/S1 1B.1	Chaparral, coastal prairie, coastal scrub. Open, rocky serpentine slopes. 45-215 m. perennial evergreen shrub. Blooms Feb-Mar	Not Expected	Suitable natural vegetation communities and appropriate soils are not present. Species not expected to be present in a fully developed urban area.
<i>Arctostaphylos montaraensis</i> Montara manzanita	—/— G1/S1 1B.2	Chaparral, coastal scrub. Slopes and ridges. 270-460 m.	Not Expected	Suitable natural vegetation communities and appropriate soils are not present. Species not expected to be present in a fully developed urban area.
<i>Arctostaphylos pacifica</i> Pacific manzanita	___/SE G1/S1 1B.1	Coastal scrub, chaparral. evergreen shrub. Blooms Feb-Apr	Not Expected	Suitable natural vegetation communities and appropriate soils are not present. Species not expected to be present in a fully developed urban area.
<i>Arctostaphylos pallida</i> pallid manzanita	FT/SE G1/S1 1B.1	Broadleaved upland forest, closed-cone coniferous forest, chaparral, cismontane woodland, coastal scrub. Grows on uplifted marine terraces on siliceous shale or thin chert. May require fire. 180-460 m.	Not Expected	Suitable natural vegetation communities and appropriate soils are not present. Species not expected to be present in a fully developed urban area.

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Scientific Name Common Name	Status Fed/State Global Rank/ State Rank CRPR	Habitat Requirements	Potential to Occur in Southside	Habitat Suitability/Observations
<i>Arenaria paludicola</i> marsh sandwort	FE/SE G1/S1 1B.1	Marshes and swamps. Growing up through dense mats of Typha, Juncus, Scirpus, etc. in freshwater marsh. Sandy soil. 3-170 m. perennial stoloniferous herb. Blooms May-Aug	Not Expected	Suitable natural vegetation communities and appropriate soils are not present. Species not expected to be present in a fully developed urban area.
<i>Astragalus tener</i> var. <i>tener</i> alkali milk-vetch	—/— G2T2/S2 1B.2	Alkali playa, valley and foothill grassland, vernal pools. Low ground, alkali flats, and flooded lands; in annual grassland or in playas or vernal pools. 0-168 m.	Not Expected	Suitable natural vegetation communities and appropriate soils are not present. Species not expected to be present in a fully developed urban area.
<i>Balsamorhiza macrolepis</i> big-scale balsamroot	—/— G2/S2 1B.2	Chaparral, valley and foothill grassland, cismontane woodland. Sometimes on serpentine. 35-1465 m.	Not Expected	Suitable natural vegetation communities and appropriate soils are not present. Species not expected to be present in a fully developed urban area.
<i>Calochortus pulchellus</i> Mt. Diablo fairy-lantern	—/— G2/S2 1B.2	Chaparral, cismontane woodland, riparian woodland, valley and foothill grassland. On wooded and brushy slopes. 30-915 m.	Not Expected	Suitable natural vegetation communities and appropriate soils are not present. Species not expected to be present in a fully developed urban area.
<i>Calochortus tiburonensis</i> Tiburon mariposa-lily	FT/ST G1/S1 1B.1	Valley and foothill grassland. On open, rocky, slopes in serpentine grassland. 50-150 m. perennial bulbiferous herb. Blooms Mar-Jun	Not Expected	Suitable natural vegetation communities and appropriate soils are not present. Species not expected to be present in a fully developed urban area.
<i>Calystegia purpurata</i> ssp. <i>saxicola</i> coastal bluff morning-glory	—/— G4T2T3/S2S3 1B.2	Coastal dunes, coastal scrub, coastal bluff scrub, North Coast coniferous forest. 5-430 m. perennial herb. Blooms (Mar)Apr-Sep	Not Expected	Suitable natural vegetation communities and appropriate soils are not present. Species not expected to be present in a fully developed urban area.
<i>Carex comosa</i> bristly sedge	—/— G5/S2 2B.1	Marshes and swamps, coastal prairie, valley and foothill grassland. Lake margins, wet places; site below sea level is on a Delta island. -5-1620 m.	Not Expected	Suitable natural vegetation communities and appropriate soils are not present. Species not expected to be present in a fully developed urban area.
<i>Carex praticola</i> northern meadow sedge	—/— G5/S2 2B.2	Meadows and seeps. Moist to wet meadows. 15-3200 m. perennial herb. Blooms May-Jul	Not Expected	Suitable natural vegetation communities and appropriate soils are not present. Species not expected to be present in a fully developed urban area.
<i>Castilleja affinis</i> var. <i>neglecta</i> Tiburon paintbrush	FE/ST G4G5T1T2/S1S2 1B.2	Valley and foothill grassland. Rocky serpentine sites. 120-400 m. perennial herb (hemiparasitic). Blooms Apr-Jun	Not Expected	Suitable natural vegetation communities and appropriate soils are not present. Species not expected to be present in a fully developed urban area.
<i>Centromadia parryi</i> ssp. <i>congdonii</i> Congdon's tarplant	—/— G3T2/S2 1B.1	Valley and foothill grassland. Alkaline soils, sometimes described as heavy white clay. 0-230 m.	Not Expected	Suitable natural vegetation communities and appropriate soils are not present. Species not expected to be present in a fully developed urban area.

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<i>Centromadia parryi</i> <i>ssp. parryi</i> pappose tarplant	—/— G3T2/S2 1B.2	Chaparral, coastal prairie, meadows and seeps, coastal salt marsh, valley and foothill grassland. Vernal mesic, often alkaline sites. 2-420 m. annual herb. Blooms May-Nov	Not Expected	Suitable natural vegetation communities and appropriate soils are not present. Species not expected to be present in a fully developed urban area.
<i>Chloropyron</i> <i>maritimum ssp.</i> <i>palustre</i> Point Reyes salty bird's-beak	—/— G4?T2/S2 1B.2	Coastal salt marsh. Usually in coastal salt marsh with <i>Salicornia</i> , <i>Distichlis</i> , <i>Jaumea</i> , <i>Spartina</i> , etc. 0-115 m.	Not Expected	Suitable natural vegetation communities and appropriate soils are not present. Species not expected to be present in a fully developed urban area.
<i>Chorizanthe</i> <i>cuspidata</i> var. <i>cuspidata</i> San Francisco Bay spineflower	—/— G2T1/S1 1B.2	Coastal bluff scrub, coastal dunes, coastal prairie, coastal scrub. Closely related to <i>C. pungens</i> . Sandy soil on terraces and slopes. 3-215 m.	Not Expected	Suitable natural vegetation communities and appropriate soils are not present. Species not expected to be present in a fully developed urban area.
<i>Chorizanthe</i> var. <i>robusta</i> robust spineflower	FE/— G2T1/S1 1B.1	Cismontane woodland, coastal dunes, coastal scrub, chaparral. Sandy terraces and bluffs or in loose sand. 9-245 m.	Not Expected	Suitable natural vegetation communities and appropriate soils are not present. Species not expected to be present in a fully developed urban area.
<i>Cicuta maculata</i> var. <i>bolanderi</i> Bolander's water- hemlock	—/— G5T4/S2 2B.1	Marshes and swamps, fresh or brackish water. 0-200 m. perennial herb. Blooms Jul-Sep	Not Expected	Suitable natural vegetation communities and appropriate soils are not present. Species not expected to be present in a fully developed urban area.
<i>Cirsium andrewsii</i> Franciscan thistle	—/— G3/S3 1B.2	Coastal bluff scrub, broadleaved upland forest, coastal scrub, coastal prairie. Sometimes serpentine seeps. 0-295 m. perennial herb. Blooms Mar-Jul	Not Expected	Suitable natural vegetation communities and appropriate soils are not present. Species not expected to be present in a fully developed urban area.
<i>Cirsium hydrophilum</i> var. <i>vaseyi</i> Mt. Tamalpais thistle	—/— G2T1/S1 1B.2	Broadleaved upland forest, chaparral, meadows and seeps. Serpentine seeps and streams in chaparral and woodland. 180-610 m. perennial herb. Blooms May-Aug	Not Expected	Suitable natural vegetation communities and appropriate soils are not present. Species not expected to be present in a fully developed urban area.
<i>Cirsium occidentale</i> var. <i>compactum</i> compact cobwebby thistle	—/— G3G4T2/S2 1B.2	Chaparral, coastal dunes, coastal prairie, coastal scrub. On dunes and on clay in chaparral; also, in grassland. 5-245 m. perennial herb. Blooms Apr-Jun	Not Expected	Suitable natural vegetation communities and appropriate soils are not present. Species not expected to be present in a fully developed urban area.
<i>Clarkia franciscana</i> Presidio clarkia	FE/SE G1/S1 1B.1	Coastal scrub, valley and foothill grassland. Serpentine outcrops in grassland or scrub. 20-305 m.	Not Expected	Suitable natural vegetation communities and appropriate soils are not present. Species not expected to be present in a fully developed urban area.

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<i>Collinsia corymbosa</i> round-headed Chinese-houses	—/— G1/S1 1B.2	Coastal dunes. 0-30 m. annual herb. Blooms Apr-Jun	Not Expected	Suitable natural vegetation communities and appropriate soils are not present. Species not expected to be present in a fully developed urban area.
<i>Collinsia multicolor</i> San Francisco collinsia	—/— G2/S2 1B.2	Closed-cone coniferous forest, coastal scrub. On decomposed shale (mudstone) mixed with humus; sometimes on serpentine. 30-250 m.	Not Expected	Suitable natural vegetation communities and appropriate soils are not present. Species not expected to be present in a fully developed urban area.
<i>Dirca occidentalis</i> western leatherwood	—/— G2/S2 1B.2	Broadleaved upland forest, chaparral, closed-cone coniferous forest, cismontane woodland, north coast coniferous forest, riparian forest, riparian woodland. On brushy slopes, mesic sites; mostly in mixed evergreen & foothill woodland communities. 25-425 m	Not Expected	Suitable natural vegetation communities and appropriate soils are not present. Species not expected to be present in a fully developed urban area.
<i>Eriogonum luteolum</i> <i>var. caninum</i> Tiburon buckwheat	—/— G5T2/S2 1B.2	Chaparral, valley and foothill grassland, cismontane woodland, coastal prairie. Serpentine soils; sandy to gravelly sites. 0-700 m. annual herb. Blooms May-Sep	Not Expected	Suitable natural vegetation communities and appropriate soils are not present. Species not expected to be present in a fully developed urban area.
<i>Eryngium jepsonii</i> Jepson's coyote- thistle	—/— G2/S2 1B.2	Vernal pools, valley and foothill grassland. Clay. 3-305 m.	Not Expected	Suitable natural vegetation communities and appropriate soils are not present. Species not expected to be present in a fully developed urban area.
<i>Extriplex joaquinana</i> San Joaquin spearscale	—/— G2/S2 1B.2	Chenopod scrub, alkali meadow, playas, valley and foothill grassland. In seasonal alkali wetlands or alkali sink scrub with <i>Distichlis spicata</i> , <i>Frankenia</i> , etc. 1-835 m.	Not Expected	Suitable natural vegetation communities and appropriate soils are not present. Species not expected to be present in a fully developed urban area.
<i>Fissidens</i> <i>pauperculus</i> minute pocket moss	—/— G3?/S2 1B.2	North coast coniferous forest. Moss growing on damp soil along the coast. In dry streambeds and on-stream banks. 10-1024 m.	Not Expected	Suitable natural vegetation communities and appropriate soils are not present. Species not expected to be present in a fully developed urban area.
<i>Fritillaria liliacea</i> fragrant fritillary	—/— G2/S2 1B.2	Coastal scrub, valley and foothill grassland, coastal prairie, cismontane woodland. Often on serpentine; various soils reported though usually on clay, in grassland. 3-400 m.	Not Expected	Suitable natural vegetation communities and appropriate soils are not present. Species not expected to be present in a fully developed urban area.

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<i>Gilia capitata</i> ssp. <i>chamissonis</i> blue coast gilia	—/— G5T2/S2 1B.1	Coastal dunes, coastal scrub. 3-200 m.	Not Expected	Suitable natural vegetation communities and appropriate soils are not present. Species not expected to be present in a fully developed urban area.
<i>Gilia millefoliata</i> dark-eyed gilia	—/— G2/S2 1B.2	Coastal dunes. 1-60 m.	Not Expected	Suitable natural vegetation communities and appropriate soils are not present. Species not expected to be present in a fully developed urban area.
<i>Helianthella</i> <i>castanea</i> Diablo helianthella	—/— G2/S2 1B.2	Broadleaved upland forest, chaparral, cismontane woodland, coastal scrub, riparian woodland, valley and foothill grassland. Usually in chaparral/oak woodland interface in rocky, azonal soils. Often in partial shade. 45-1070 m.	Not Expected	Suitable natural vegetation communities and appropriate soils are not present. Species not expected to be present in a fully developed urban area.
<i>Hemizonia congesta</i> ssp. <i>congesta</i> congested-headed hayfield tarplant	—/— G5T1T2/S1S2 1B.2	Valley and foothill grassland. Grassy valleys and hills, often in fallow fields; sometimes along roadsides. 20-560 m.	Not Expected	Suitable natural vegetation communities and appropriate soils are not present. Species not expected to be present in a fully developed urban area.
<i>Hesperevax</i> <i>sparsiflora</i> var. <i>brevifolia</i> short-leaved evax	—/— G4T3/S2 1B.2	Coastal bluff scrub, coastal dunes, coastal prairie. Sandy bluffs and flats. 0-215 m.	Not Expected	Suitable natural vegetation communities and appropriate soils are not present. Species not expected to be present in a fully developed urban area.
<i>Hesperolinon</i> <i>congestum</i> Marin western flax	FT/ST G1/S1 1B.1	Chaparral, valley and foothill grassland. In serpentine barrens and in serpentine grassland and chaparral. 60- 370 m.	Not Expected	Suitable natural vegetation communities and appropriate soils are not present. Species not expected to be present in a fully developed urban area.
<i>Heteranthera dubia</i> water star-grass	—/— G5/S2 2B.2	Marshes and swamps. Alkaline, still or slow-moving water. Requires a pH of 7 or higher, usually in slightly eutrophic waters. 15-1510 m.	Not Expected	Suitable natural vegetation communities and appropriate soils are not present. Species not expected to be present in a fully developed urban area.
<i>Hoita strobilina</i> Loma Prieta hoita	—/— G2/S2 1B.1	Chaparral, cismontane woodland, riparian woodland. Serpentine; mesic sites. 60- 975 m.	Not Expected	Suitable natural vegetation communities and appropriate soils are not present. Species not expected to be present in a fully developed urban area.
<i>Holocarpha</i> <i>macradenia</i> Santa Cruz tarplant	FT/SE G1/S1 1B.1	Coastal prairie, coastal scrub, valley and foothill grassland. Light, sandy soil or sandy clay; often with nonnatives. 10- 220 m.	Not Expected	Suitable natural vegetation communities and appropriate soils are not present. Species not expected to be present in a fully developed urban area.

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<i>Horkelia cuneata</i> var. <i>sericea</i> Kellogg's horkelia	—/— G4T1?/S1? 1B.1	Closed-cone coniferous forest, coastal scrub, coastal dunes, chaparral. Old dunes, coastal sandhills; openings. 5-215 m.	Not Expected	Suitable natural vegetation communities and appropriate soils are not present. Species not expected to be present in a fully developed urban area.
<i>Horkelia marinensis</i> Point Reyes horkelia	___/___ G2/S2 1B.2	Coastal dunes, coastal prairie, coastal scrub. Sandy flats and dunes near coast; in grassland or scrub plant communities. 2-775 m. perennial herb. Blooms May-Sep	Not Expected	Suitable natural vegetation communities and appropriate soils are not present. Species not expected to be present in a fully developed urban area.
<i>Hypogymnia schizidiata</i> island tube lichen	___/___ G1/S1 1B.3	Chaparral, closed-cone coniferous forest. On bark and wood of hardwoods and conifers. 360-405 m. foliose lichen (null).	Not Expected	Suitable natural vegetation communities and appropriate soils are not present. Species not expected to be present in a fully developed urban area.
<i>Isocoma arguta</i> Carquinez goldenbush	___/___ G1/S1 1B.1	Valley and foothill grassland. Alkaline soils, flats, lower hills. On low benches near drainages & on tops & sides of mounds in swale habitat. 1-50 m. perennial shrub. Blooms Aug-Dec	Not Expected	Suitable natural vegetation communities and appropriate soils are not present. Species not expected to be present in a fully developed urban area.
<i>Lasthenia conjugens</i> Contra Costa goldfields	FE/— G1/S1 1B.1	Valley and foothill grassland, vernal pools, alkaline playays, cismontane woodland. Vernal pools, swales, low depressions, in open grassy areas. 1-450 m.	Not Expected	Suitable natural vegetation communities and appropriate soils are not present. Species not expected to be present in a fully developed urban area.
<i>Lathyrus jepsonii</i> var. <i>jepsonii</i> Delta tule pea	___/___ G5T2/S2 1B.2	Marshes and swamps. In freshwater and brackish marshes. Often found with <i>Typha</i> , <i>Aster lentus</i> , <i>Rosa californica</i> , <i>Juncus spp.</i> , <i>Scirpus</i> , etc. Usually on marsh and slough edges. 0-5 m. perennial herb. Blooms May-Jul (Aug-Sep)	Not Expected	Suitable natural vegetation communities and appropriate soils are not present. Species not expected to be present in a fully developed urban area.
<i>Layia carnosa</i> beach layia	FE/SE G2/S2 1B.1	Coastal dunes, coastal scrub. On sparsely vegetated, semi-stabilized dunes, usually behind foredunes. 0-30 m.	Not Expected	Suitable natural vegetation communities and appropriate soils are not present. Species not expected to be present in a fully developed urban area.
<i>Leptosiphon rosaceus</i> rose leptosiphon	—/— G1/S1 1B.1	Coastal bluff scrub. 10-140 m.	Not Expected	Suitable natural vegetation communities and appropriate soils are not present. Species not expected to be present in a fully developed urban area.
<i>Lessingia germanorum</i> San Francisco lessingia	FE/SE G1/S1 1B.1	Coastal scrub. On remnant dunes. Open sandy soils relatively free of competing plants. 3-155 m. annual herb. Blooms (Jun)Jul-Nov	Not Expected	Suitable natural vegetation communities and appropriate soils are not present. Species not expected to be present in a fully developed urban area.

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<i>Malacothamnus arcuatus</i> arcuate bush-mallow	—/— G2Q/S2 1B.2	Chaparral, cismontane woodland. Gravelly alluvium. 1-735 m.	Not Expected	Suitable natural vegetation communities and appropriate soils are not present. Species not expected to be present in a fully developed urban area.
<i>Meconella oregana</i> Oregon meconella	—/— G2G3/S2 1B.1	Coastal prairie, coastal scrub. Open, moist places. 60-640 m.	Not Expected	Suitable natural vegetation communities and appropriate soils are not present. Species not expected to be present in a fully developed urban area.
<i>Microseris paludosa</i> marsh microseris	—/— G2/S2 1B.2	Closed-cone coniferous forest, cismontane woodland, coastal scrub, valley and foothill grassland. 3-610 m. perennial herb. Blooms Apr-Jun (Jul)	Not Expected	Suitable natural vegetation communities and appropriate soils are not present. Species not expected to be present in a fully developed urban area.
<i>Monardella sinuata</i> <i>ssp. nigrescens</i> northern curly-leaved monardella	—/— G3T2/S2 1B.2	Coastal dunes, coastal scrub, chaparral, lower montane coniferous forest. Sandy soils. 10-245 m. annual herb. Blooms (Apr)May-Jul (Aug-Sep)	Not Expected	Suitable natural vegetation communities and appropriate soils are not present. Species not expected to be present in a fully developed urban area.
<i>Monolopia gracilens</i> woodland woollythreads	—/— G3/S3 1B.2	Chaparral, valley and foothill grassland, cismontane woodland, broadleafed upland forest, north coast coniferous forest. Grassy sites, in openings; sandy to rocky soils. Often seen on serpentine after burns but may have only weak affinity to serpentine. 1	Not Expected	Suitable natural vegetation communities and appropriate soils are not present. Species not expected to be present in a fully developed urban area.
<i>Pentachaeta bellidiflora</i> white-rayed pentachaeta	FE/SE G1/S1 1B.1	Valley and foothill grassland, cismontane woodland. Open dry rocky slopes and grassy areas, often on soils derived from serpentine bedrock. 35-610 m.	Not Expected	Suitable natural vegetation communities and appropriate soils are not present. Species not expected to be present in a fully developed urban area.
<i>Plagiobothrys chorisianus</i> var. <i>chorisianus</i> Choris' popcornflower	—/— G3T2Q/S2 1B.2	Chaparral, coastal scrub, coastal prairie. Mesic sites. 15-160 m.	Not Expected	Suitable natural vegetation communities and appropriate soils are not present. Species not expected to be present in a fully developed urban area.
<i>Plagiobothrys diffusus</i> San Francisco popcornflower	—/SE G1Q/S1 1B.1	Valley and foothill grassland, coastal prairie. Historically from grassy slopes with marine influence. 45-360 m.	Not Expected	Suitable natural vegetation communities and appropriate soils are not present. Species not expected to be present in a fully developed urban area.
<i>Plagiobothrys glaber</i> hairless popcornflower	—/— GH/SH 1A	Meadows and seeps, marshes and swamps. Coastal salt marshes and alkaline meadows. 5-180 m.	Not Expected	Suitable natural vegetation communities and appropriate soils are not present. Species not expected to be present in a fully developed urban area.

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<i>Polemonium carneum</i> Oregon polemonium	—/— G3G4/S2 2B.2	Coastal prairie, coastal scrub, lower montane coniferous forest. 0-1830 m.	Not Expected	Suitable natural vegetation communities and appropriate soils are not present. Species not expected to be present in a fully developed urban area.
<i>Sanicula maritima</i> adobe sanicle	—/SR G2/S2 1B.1	Meadows and seeps, valley and foothill grassland, chaparral, coastal prairie. Moist clay or ultramafic soils. 30-240 m.	Not Expected	Suitable natural vegetation communities and appropriate soils are not present. Species not expected to be present in a fully developed urban area.
<i>Senecio aphanactis</i> chaparral ragwort	—/— G3/S2 2B.2	Chaparral, cismontane woodland, coastal scrub. Drying alkaline flats. 20-855 m.	Not Expected	Suitable natural vegetation communities and appropriate soils are not present. Species not expected to be present in a fully developed urban area.
<i>Silene scouleri ssp. scouleri</i> Scouler's catchfly	—/— G5T5/S2S3 2B.2	Coastal bluff scrub, coastal prairie, valley and foothill grassland. 0-600 m.	Not Expected	Suitable natural vegetation communities and appropriate soils are not present. Species not expected to be present in a fully developed urban area.
<i>Silene verecunda ssp. verecunda</i> San Francisco campion	—/— G5T1/S1 1B.2	Coastal scrub, valley and foothill grassland, coastal bluff scrub, chaparral, coastal prairie. Often on mudstone or shale; one site on serpentine. 30-645 m. perennial herb. Blooms (Feb)Mar-Jun(Aug)	Not Expected	Suitable natural vegetation communities and appropriate soils are not present. Species not expected to be present in a fully developed urban area.
<i>Spergularia macrotheca var. longistyla</i> long-styled sand- spurrey	—/— G5T2/S2 1B.2	Marshes and swamps, meadows and seeps. Alkaline. 0-255 m.	Not Expected	Suitable natural vegetation communities and appropriate soils are not present. Species not expected to be present in a fully developed urban area.
<i>Stebbinsoseris decipiens</i> Santa Cruz microseris	—/— G2/S2 1B.2	Broadleafed upland forest, closed-cone coniferous forest, chaparral, coastal prairie, coastal scrub, valley and foothill grassland. Open areas in loose or disturbed soil, usually derived from sandstone, shale or serpentine, on seaward slopes. 90-750 m. annual herb. Blooms Apr-May	Not Expected	Suitable natural vegetation communities and appropriate soils are not present. Species not expected to be present in a fully developed urban area.
<i>Streptanthus albidus ssp. peramoenus</i> most beautiful jewelflower	—/— G2T2/S2 1B.2	Chaparral, valley and foothill grassland, cismontane woodland. Serpentine outcrops, on ridges and slopes. 95-1000 m.	Not Expected	Suitable natural vegetation communities and appropriate soils are not present. Species not expected to be present in a fully developed urban area.
<i>Streptanthus glandulosus ssp. niger</i> Tiburon jewelflower	FE/SE G4T1/S1 1B.1	Valley and foothill grassland. Shallow, rocky serpentine slopes. 30-150 m. annual herb. Blooms May-Jun	Not Expected	Suitable natural vegetation communities and appropriate soils are not present. Species not expected to be present in a fully developed urban area.

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<i>Stuckenia filiformis</i> <i>ssp. alpina</i> slender-leaved pondweed	—/— G5T5/S3 2B.2	Marshes and swamps. Shallow, clear water of lakes and drainage channels. 300- 2150 m.	Not Expected	Suitable natural vegetation communities and appropriate soils are not present. Species not expected to be present in a fully developed urban area.
<i>Suaeda californica</i> California seablite	FE/— G1/S1 1B.1	Marshes and swamps. Margins of coastal salt marshes. 0-5 m.	Not Expected	Suitable natural vegetation communities and appropriate soils are not present. Species not expected to be present in a fully developed urban area.
<i>Symphotrichum</i> <i>lentum</i> Suisun Marsh aster	___/___ G2/S2 1B.2	Marshes and swamps (brackish and freshwater). Most often seen along sloughs with <i>Phragmites</i> , <i>Scirpus</i> , blackberry, <i>Typha</i> , etc. 0-15 m. perennial rhizomatous herb. Blooms (Apr)May-Nov	Not Expected	Suitable natural vegetation communities and appropriate soils are not present. Species not expected to be present in a fully developed urban area.
<i>Trifolium amoenum</i> two-fork clover	FE/___ G1/S1 1B.1	Valley and foothill grassland, coastal bluff scrub. Sometimes on serpentine soil, open sunny sites, swales. Most recently cited on roadside and eroding cliff face. 5-310 m. annual herb. Blooms Apr-Jun	Not Expected	Suitable natural vegetation communities and appropriate soils are not present. Species not expected to be present in a fully developed urban area.
<i>Trifolium</i> <i>hydrophilum</i> saline clover	—/— G2/S2 1B.2	Marshes and swamps, valley and foothill grassland, vernal pools. Mesic, alkaline sites. 1- 335 m.	Not Expected	Suitable natural vegetation communities and appropriate soils are not present. Species not expected to be present in a fully developed urban area.
<i>Triphysaria</i> <i>floribunda</i> San Francisco owl's- clover	—/— G2?/S2? 1B.2	Coastal prairie, coastal scrub, valley and foothill grassland. On serpentine and non- serpentine substrate (such as at Pt. Reyes). 1-150 m.	Not Expected	Suitable natural vegetation communities and appropriate soils are not present. Species not expected to be present in a fully developed urban area.
<i>Triquetrella</i> <i>californica</i> coastal triquetrella	___/___ G2/S2 1B.2	Coastal bluff scrub, coastal scrub. Grows within 30m from the coast in coastal scrub, grasslands and in open gravels on roadsides, hillsides, rocky slopes, and fields. On gravel or thin soil over outcrops. 10-100 m. moss.	Not Expected	Suitable natural vegetation communities and appropriate soils are not present. Species not expected to be present in a fully developed urban area.

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<i>Viburnum ellipticum</i> oval-leaved viburnum	—/— G4G5/S3? 2B.3	Chaparral, cismontane woodland, lower montane coniferous forest. 215-1400 m.	Not Expected	Suitable natural vegetation communities and appropriate soils are not present. Species not expected to be present in a fully developed urban area.

FT = Federally Threatened

SE = State Endangered

FC = Federal Candidate Species

ST = State Threatened

FE = Federally Endangered

SR = State Rare

SC = State Candidate Species

G-Rank/S-Rank = Global Rank and State Rank as per NatureServe and CDFW's CNDDDB RareFind5.

CRPR (California Rare Plant Rank)

1A = Presumed Extinct in California

1B = Rare, Threatened, or Endangered in California and elsewhere

2 = Rare, Threatened, or Endangered in California, but more common elsewhere

CRPR Threat Code Extension

.1=Seriously endangered in California (over 80% of occurrences threatened/high degree and immediacy of threat)

.2=Fairly endangered in California (20-80% occurrences threatened)

.3=Not very endangered in California (<20% of occurrences threatened)

Source: CNDDDB (CDFW 2018a); CRPR (CNPS 2018); IPaC (USFWS 2018a)