19

Office of the City Manager

PUBLIC HEARING
December 1, 2026

To: Honorable Mayor and Members of the City Council

From: Paul Buddenhagen, City Manager

Submitted by: Jordan Klein, Director, Planning and Development Department

Subject: Corridors Zoning and General Plan Updates

RECOMMENDATION

Conduct a public hearing and upon conclusion:

- Adopt the first reading of an Ordinance amending Title 23 of the Berkeley Municipal Code to increase housing capacity along commercial and transit corridors, consistent with Program 27— Priority Development Areas, Commercial and Transit Corridors, and Program 33—Zoning Code Amendment: Residential of the 2023-2031 Housing Element Update and the City's Affirmatively Furthering Fair Housing (AFFH) obligations.

- Adopt a Resolution approving and adopting General Plan map and text amendments to re-designate certain parcels and update certain land use designations to be consistent with the associated Ordinance amendments.

- Refer to the City Manager the development of additional small business support strategies, including business license tax relief, relocation assistance, and other measures to support business continuity.

- Direct staff to evaluate the Corridors Upzoning Project after five years with respect to any impacts on emergency services.

- Find the Corridors Zoning Update is exempt from CEQA pursuant to SB 131, and consider the Addendum demonstrating that the Corridors Zoning Update would not result in new or more significant environmental impacts than were analyzed and disclosed in the City's Environmental Impact Report for the 2023-2031 Housing Element Update and adopt the Findings and Statement of Overriding Considerations that the benefits of the proposed project outweigh the unavoidable adverse environmental impacts.

SUMMARY
The Corridors Zoning Update would implement targeted Zoning Ordinance, Zoning Map, and General Plan amendments along Solano Avenue, North Shattuck, and College Avenue to increase housing opportunities in high-resource areas while supporting small businesses and maintaining the character of the corridors. The proposed project establishes Mixed-Use Opportunity Areas on select sites identified as having higher redevelopment potential, where updated development standards would allow additional height, density, and mixed-use development. Existing zoning regulations would remain largely unchanged outside of these designated areas.

The proposed amendments also establish Commercial Priority Zones to support active ground-floor commercial uses, introduce objective design standards for pedestrian-oriented development, and require early notification to commercial tenants on redevelopment sites. The project is intended to implement Program 27 of the City's 2023–2031 Housing Element Update and advance the City's Affirmatively Furthering Fair Housing (AFFH) goals, by increasing housing capacity in historically exclusionary, high-resource neighborhoods while balancing housing production with small business retention and corridor vitality.

FISCAL IMPACTS OF RECOMMENDATION
The proposed zoning changes are intended to increase the residential and mixed-use development potential of properties in high resource commercial districts. This could result in higher property tax revenues. These changes also allow for larger development projects compared to the current zoning regulations, so on average, the City can expect to collect more development fees on a per-project basis. These fees may include those for affordable housing (BMC 23.328), childcare if the projects involve non-residential uses, and public art. The proposed zoning changes also include revisions that would streamline project approvals, which could reduce staff review times and accompanying fees.

CURRENT SITUATION AND ITS EFFECTS
The Corridors Zoning Update is an implementation action of Berkeley's 2023–2031 Housing Element Update (Program 27).[1] The project is intended to:

- Expand housing opportunities in high-resource areas;
- Address historic exclusionary zoning patterns; and
- Promote equitable housing distribution while maintaining neighborhood character and supporting local businesses.

At the November 2025 City Council worksession, Council members expressed general support for advancing the Corridors Zoning Update to increase housing

[1] *City of Berkeley Housing Element Update 2023-2031*. https://berkeleyca.gov/sites/default/files/documents/Berkeley_2023-2031%20Housing%20Element_02-17-2023v2_0.pdf

capacity along commercial and transit corridors, consistent with the City's Housing Element and AFFH obligations. Council input included an emphasis on achieving greater uniformity across corridors to avoid perpetuating historic patterns of exclusionary zoning, while also strengthening protections for small businesses. Several Councilmembers supported building heights of seven stories across the corridors, with consideration of up to eight stories on North Shattuck, as well as more flexible ground-floor requirements. Additional input included exploring increased Floor Area Ratios (FAR), minimizing upper-story stepbacks to preserve housing yield, and advancing strategies to support small business retention and mitigate displacement.

Public comment at the Council worksession and throughout the broader, two-year engagement process reflected a wide range of perspectives. Many commenters supported increased housing along corridors, citing the need to address housing shortages, meet AFFH goals, and support commercial vitality through increased foot traffic. Others expressed concern regarding potential displacement of small businesses, the feasibility of relocation, construction impacts, and the affordability of new commercial spaces and housing units. Additional concerns included negative impacts on neighborhood character, traffic, and whether upzoning should be more targeted. Across viewpoints, there was a consistent call for policies that balance housing production with the preservation of local businesses and community-serving uses.

At the February 4, 2026 Planning Commission meeting, staff and the consultant team presented potential anti-displacement strategies for small businesses and draft Objective Design Standards associated with the Corridors Zoning Update ***(Link 1-Planning Commission Presentation).***[2] The Commission received public comments, asked questions, and provided feedback on a range of topics, including examples of successful small business anti-displacement tools used in other jurisdictions, potential construction mitigation strategies for small businesses, clarification of height and density bonus scenarios, support for legacy businesses, and approaches to streamline permitting for small businesses. Commissioners also discussed zoning strategies for residential uses around commercial corridors, appropriate retail zoning to meet future market demand, and expressed support for the proposed ground floor objective design standards.

Following discussion, the Planning Commission established an Ad-Hoc Committee consisting of Commissioners Merker, Twu, Owens, and Kahn to develop a "sense of the Commission" statement for further discussion.

[2] https://berkeleyca.gov/sites/default/files/2026-02/PresentationsCombined_IntroSmallBusinessODS.pdf

At the March 4, 2026 Planning Commission meeting, the Ad-Hoc Committee presented its report ***(Link 2 – Ad-Hoc Committee's Memo)***.[3] The Planning Commission accepted the Ad-Hic Committee's recommendation that staff explore the use of a height-to-street-width ratio as an objective regulatory tool and apply new development standards only to those parcels or areas that are most likely to redevelop. Commissioners requested that these outcomes be supported by detailed capacity and feasibility analysis.

At the May 6, 2026 Planning Commission public hearing, the Commission received a staff presentation, considered public comments, and discussed the proposed zoning framework, development standards, and small business retention strategies ***(Link 3 – Planning Commission Staff Report Packet)***.[4] Staff presented two alternative methods to identify Mixed-Use Opportunity Areas – Option 1A (Proposed Select Sites/ Map-Based), and Option 1B (Criteria Based).

Public comments at this meeting reflected a broad range of perspectives regarding housing growth, affordability, small business retention, parking, and neighborhood character. Many commenters supported a more targeted approach to increased development intensity and expressed support for Option 1A, citing concerns about impacts on small businesses, grocery stores, parking availability, traffic, and construction disruption. Several speakers emphasized the importance of preserving neighborhood-serving businesses and maintaining the character of the commercial corridors. Other commenters supported additional housing opportunities along the corridors, noting the need to address housing affordability, advance fair housing goals, and leverage access to transit and commercial amenities. Some commenters also expressed concern that the revised proposal would not meaningfully increase housing production or affordable housing opportunities. Additional comments included requests for stronger on-site affordability requirements and commercial tenant protections.

Following discussion, the Planning Commission recommended that the City Council adopt the Corridors Zoning Update with several modifications, including use of the maps from Option 1B criteria-based approach for identifying Mixed-Use Opportunity Areas while removing the flexibility to assemble parcels; increased maximum building heights within those areas resulting in 5 stories on College Avenue, 6 stories on Solano Avenue and 7 stories on Shattuck Avenue (previously 4 on College, 5 on Solano and 6 on Shattuck Avenues); removal of massing and lot coverage standards; allowing Administrative Use Permits for qualifying projects; and re-evaluating the zoning changes during the 7th Cycle Housing Element update.

The Fire Department reviewed the Planning Commission recommendation and identified the need to account for the cumulative impacts of increased density and

[3] https://berkeleyca.gov/sites/default/files/2026-03/2026-03-04%20Supplemental%20Agenda%20Packet.pdf
[4] https://berkeleyca.gov/sites/default/files/2026-04/2026-05_06_PC_Item%2010A_Corridors.pdf

building heights on emergency response capabilities, noting that the Corridors Upzoning Project comes on the heels of a number of additional rezonings that allow more development, including the San Pablo Avenue Specific Plan, Middle Housing, the Ashby and North Berkeley BART developments and the Southside Plan. While individual zoning changes may not result in significant impacts to Fire operations, multiple rezoning efforts can have a cumulative impact on service demand and operations. The Fire Department identified particular concerns along College Avenue and North Shattuck, both of which serve as important emergency response routes and already experience traffic congestion. Additional residents, deliveries, and commercial activity could further impede emergency vehicle access. Solano Avenue presents fewer concerns regarding existing emergency response traffic, but the Fire Department emphasized the need to maintain adequate roadway width as building heights increase. More broadly, the Fire Department stressed that taller buildings would require at least 26 feet of unobstructed roadway width for aerial fire apparatus operations, potentially creating conflicts with bicycle facilities, traffic calming, parking, loading, and other streetscape improvements.

Planning staff proposes working with the Fire Department and Public Works to evaluate demand trends related to recently upzoned areas and to identify specific infrastructure improvements, such as undergrounding overhead utilities, adjusting traffic signals, and expanding emergency vehicle signal preemption, in order to ensure public safety while meeting our housing goals. The Project to Increase Telegraph and Claremont Housing (PITCH) referral could present an opportunity to create such an internal stakeholder group to proactively analyze a proposed upzoning.

In addition, and consistent with direction undertaken with the adoption of the San Pablo Specific Plan, Planning staff would recommend that the City Council direct staff to reevaluate the Corridors Upzoning Project after five years with respect to any impacts on emergency services.

Summary of Zoning and General Plan Changes
The proposed project introduces a targeted zoning approach that applies updated development standards to select sites meeting specified objective criteria along the corridors through a Mixed-Use Opportunity Areas designation, while retaining nearly all existing zoning regulations for all other parcels.

The project includes zoning map amendments, objective design standards, and corresponding General Plan amendments to ensure consistency with the proposed Mixed-Use Opportunity Areas framework. Existing base zoning districts (C-E, C-SO, and C-NS) would remain unchanged and would continue to regulate development outside of designated Mixed-Use Opportunity Areas.

This zoning approach includes the following components:

- The project proposes establishing a Mixed-Use Opportunity Area designation in each corridor to identify the parcels that would be subject to revised development standards.
- On Solano Avenue, the project proposes incorporating the Andronico's parking lot parcels (currently zoned as R-1) into the Solano Commercial (C-SO) zoning district.
- On College Avenue, the project proposes incorporating a parking lot associated with the Elmwood Post Office into the Elmwood Commercial (C-E) zoning district.
- The project establishes Commercial Priority Zones along the three corridors, where ground-floor commercial frontages would be required and residential frontages would be prohibited.
- The project establishes objective design standards to guide development across the corridors, including the identified Mixed-Use Opportunity Areas. These standards encourage storefront activation and site design to ensure pedestrian-oriented development.
- The project includes corresponding amendments to relevant General Plan policies and maps to ensure consistency with the zoning text and map amendments ***(Attachment 1, Exhibit A)***.

Mixed-Use Opportunity Areas (*Figures 1-3, below*)
The proposed Zoning Ordinance amendments introduce a Mixed-Use Opportunity Area designation that allows increased height, density, and development intensity on select sites along the corridors. This approach reflects the direction of Planning Commission to target additional development capacity on sites with the greatest redevelopment potential, while maintaining the existing scale and character of the broader corridors. Outside of these designated areas, existing zoning regulations would largely remain in effect. A parcel with a Mixed-Use Opportunity Area designation would not be able to expand the application of the Area's development standards by aggregating adjoining parcels.

Consistent with Planning Commission direction, the City would re-evaluate and re-examine the zoning changes (including the requirement to not permit parcel aggregation) during preparation of the 7th Cycle Housing Element to assess project outcomes, redevelopment patterns, and potential future zoning modifications.

Figure 1: C-E Elmwood Mixed-Use Opportunity Areas



Figure 2: C-NS North Shattuck Mixed-Use Opportunity Areas



Figure 3: C-SO Solano Avenue Mixed-Use Opportunity Areas



Small Business Retention and Anti-Displacement Strategy
The proposed Mixed-Use Opportunity Areas framework is intended, in part, to reduce displacement pressure on existing commercial businesses along the corridors. Additional development capacity would be concentrated on a targeted set of sites with higher redevelopment potential based on site characteristics such as size, orientation, access and ownership, and would avoid applying increased height and density across all parcels.

By maintaining nearly all existing zoning standards on the majority of parcels, the proposal provides more predictability for existing businesses, while still enabling new housing and mixed-use development in strategic locations to help the City meet its AFFH goals. This targeted approach reflects Planning Commission's direction to balance housing production goals with the preservation of small businesses and the existing commercial fabric of the corridors.

In addition to this zoning strategy, the proposed Ordinance includes early notification requirements to provide advance notice to commercial tenants of potential redevelopment. The Planning Commission also recommend that City Council refer to the City Manager the development of additional small business support strategies for application citywide. These could include a waiver of business license taxes for a finite number of years for any business that is forced to relocate due to a housing development project; other forms of relocation assistance; or other measures to support business continuity.

Development Standards for the Project Areas

a) Outside Mixed-Use Opportunity Areas (See Table 1)
Existing development standards related to height and FAR would largely remain. Table 1 summarizes the proposed changes for parcels *outside* of the Mixed-Use Opportunity Areas. The proposed changes include:

- Establishing minimum and maximum residential density standards;
- Increasing the maximum height in the C-NS zoning district by 3 feet; and
- Removing lot coverage standards.

Table 1: Existing and Proposed Zoning Standards for all Land Uses (Non-Residential, Mixed-use, and Residential Only)
Outside Mixed-Use Opportunity Areas

	C-E: Elmwood *60 ft street width*	**C-SO: Solano** *77-82 ft street width*	**C-NS: North Shattuck** *95 ft street width*
Height			
Maximum Height	**2 stories** 28 ft	**2 stories** 28 ft	**3 stories** ~~35 ft.~~ 38 ft
Density			
Density for Mixed-Use Projects (du/acre)	25 (min), 40 (max)	40 (min), 60 (max)	40 (min), 85 (max)
Density for Residential Only (du/acre)	25 (min), No max	40 (min), No max	40 (min), No max
Lot Coverage Maximum			
Non-Residential, Residential, and Mixed-Use	100%		

b) Within Mixed-Use Opportunity Areas (See Table 2)
The Mixed-Use Opportunity Areas function as a designation that applies enhanced development standards to specific mapped locations. Table 2 summarizes the proposed changes for parcels *within* the Mixed-Use Opportunity Areas. The proposed changes include:

- Increasing maximum building heights to 5 stories and 58 feet in the C-E zoning district, 6 stories and 68 feet in the C-SO zoning district, and 7 stories and 78 feet in the C-NS zoning district. Table 2 includes, for informational purposes, estimates of likely maximum heights for State Density Bonus projects, given the base zoning.
- Establishing a maximum residential density standard. No minimum density standard is proposed.

Table 2: Proposed Maximum Heights and Density for all projects <u>Within</u> the Mixed-Use Opportunity Areas

	C-E: Elmwood *60 ft street width*	**C-SO: Solano** *77-82 ft street width*	**C-NS: North Shattuck** *95 ft street width*
Height			
Maximum Height	**5 stories** 58 ft	**6 stories** 68 ft	**7 stories** 78 ft
Estimated Height 50% Density Bonus	*6 - 8 stories (88 ft)*	*8 - 9 stories (98 ft)*	*9 - 11 stories (118 ft)*
Estimated Height 100% Density Bonus	*8 - 10 stories (108 ft)*	*10 – 12 stories (128 ft)*	*12 - 14 stories (148 ft)*
Density			
Mixed-Use Opportunity Area Sites Residential Density (du/ac)	25 (min) 115 (max)	40 (min) 140 (max)	40 (min) 165 (max)

Housing Capacity Analysis
Attachment 3 is a capacity analysis that compares the additional units, including affordable units, that would result from three scenarios:

- A scenario which includes 7 story maximum base heights across all three corridors.
- The Higher Density Alternative presented to the Planning Commission in September 2025 and to the City Council in November 2025. The Higher Density Alternative assumed base heights of 4 stories in the C-E zoning district, 5 stories in the C-SO zoning district, and 6 stories in the C-NS zoning district.
- The updated Mixed-Use Opportunity Areas site selection approach recommended by the Planning Commission, which includes an assumption of base heights of 5 stories in the C-E zoning district, 6 stories in the C-SO zoning district, and 7 stories in the C-NS zoning district for parcels within the Mixed-Use Opportunity Areas, with no change to other parcels.

All scenarios assumed the utilization of 50% State Density Bonus.

The analysis is summarized in Table 3. The proposed Mixed-Use Opportunity Areas approach results in approximately 0.5 percent less in total residential capacity across the three corridors, compared to the Higher Density Alternative that was presented to the City Council in November 2025.

- While the Higher Density Alternative rezoned all parcels in each corridor, staff analysis concluded that only a limited number of sites would be redeveloped; even with the Higher Density Alternative upzoning, most parcels would not redevelop. The parcels included in the Mixed-Use Opportunity Areas were among those identified as most likely to redevelop in the Higher Density Alternative.
- The Mixed-Use Opportunity Areas approach provides an additional story of allowable development compared to the Higher Density Alternative, hence the slightly larger unit totals in the C-E and C-NS zoning districts.
- In the C-SO zoning district, the Higher Density Alternative designated all parcels located between Ensenada and Colusa Avenues as likely to be redeveloped with upzoning. These parcels are not designated as Mixed-Use Opportunity Areas. As a result, the unit totals for the C-SO zoning district are slightly lower in the Planning Commission recommendation than the Higher Density Alternative, even with the additional permitted story of development.

Table 3: Comparison of Projected Number of Units Over Existing Conditions

	College Avenue (C-E)	Solano Avenue (C-SO)	North Shattuck (C-NS)	Total Berkeley Corridors
Total Projected Units				
7 Stories Across All Three Corridors	215 units	682 units	1,132 units	**2,029 units**
Higher Density Alternative (2025)	140 units	578 units	1,040 units	**1,758 units**
Mixed-Use Opportunity Areas	143 units	528 units	1,080 units	**1,751 units**
On-site Affordable Units (10% of total projected units)*				
7 Stories Across All Three Corridors	22 units	68 units	113 units	**203 units**
Higher Density Alternative (2025)	14 units	58 units	104 units	**176 units**
Mixed-Use Opportunity Areas	14 units	53 units	108 units	**175 units**

Ground Floor Objective Design Standards
The proposed Zoning Amendments include ground floor objective design standards (ODS) that would support active, pedestrian-oriented ground floors along the corridors. These standards would encourage new development that contributes to a continuous, engaging public realm while providing flexibility for a range of commercial and mixed-use building types.

Ground floor frontages along the primary corridor streets would be required to provide a minimum of 80 percent commercial or live/work frontage. Non-commercial uses would be limited, and parking access, residential units, and inactive frontages would be prohibited along primary street frontages. Service elements, including utilities, trash storage, and building access, would be minimized and, where feasible, located on side streets or secondary frontages to maintain uninterrupted pedestrian activity and a consistent streetscape experience along the corridors' frontages.

The ODS would also ensure that commercial spaces are functional, adaptable, and viable for a range of tenants over time. Requirements would include minimum floor-to-floor heights, sufficient space depth, rectilinear layouts, and high levels of transparency along frontages. Commercial spaces would be required to be delivered as "warm shell,"

including basic infrastructure such as ventilation, utility capacity, and grease interceptors to support restaurant and food service uses. Designs would also be required to allow subdivision into smaller tenant spaces, supporting a diversity of local and small businesses.

Commercial Priority Zones

Commercial Priority Zones would be established along all three corridors to reinforce concentrations of active, pedestrian-oriented uses in key locations. Within these Zones, ground floor commercial uses would be required to support retail continuity and business clustering. Outside of the Commercial Priority Zones, mixed-use development would be required to provide either ground floor commercial or live/work uses ***(see Figures 4, 5 and 6)***. Live/work units could function as active ground floor spaces and would be required to be designed to allow conversion to commercial uses. Live/work units would be required to incorporate storefront design elements, including appropriate glazing, entrances, and meet standards for height, width, and setbacks to maintain a fine-grained, pedestrian-oriented frontage pattern.

Figure 4: College Avenue Commercial Priority Zone

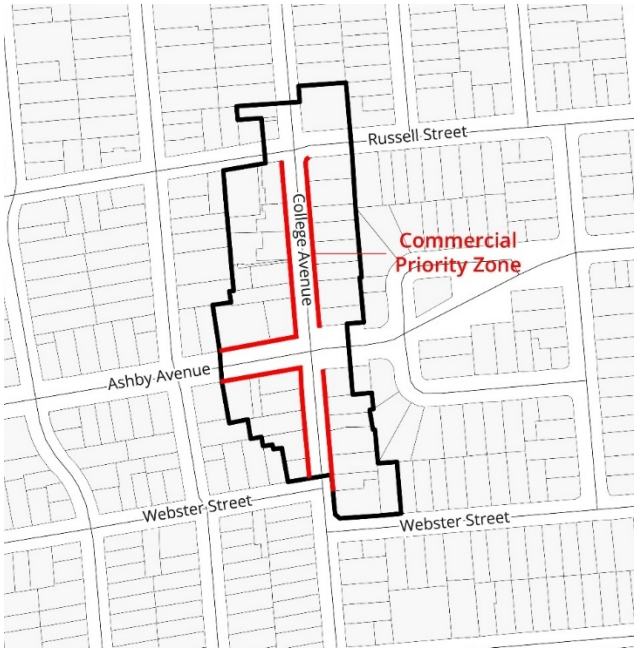


Figure 5: Solano Avenue Commercial Priority Zone

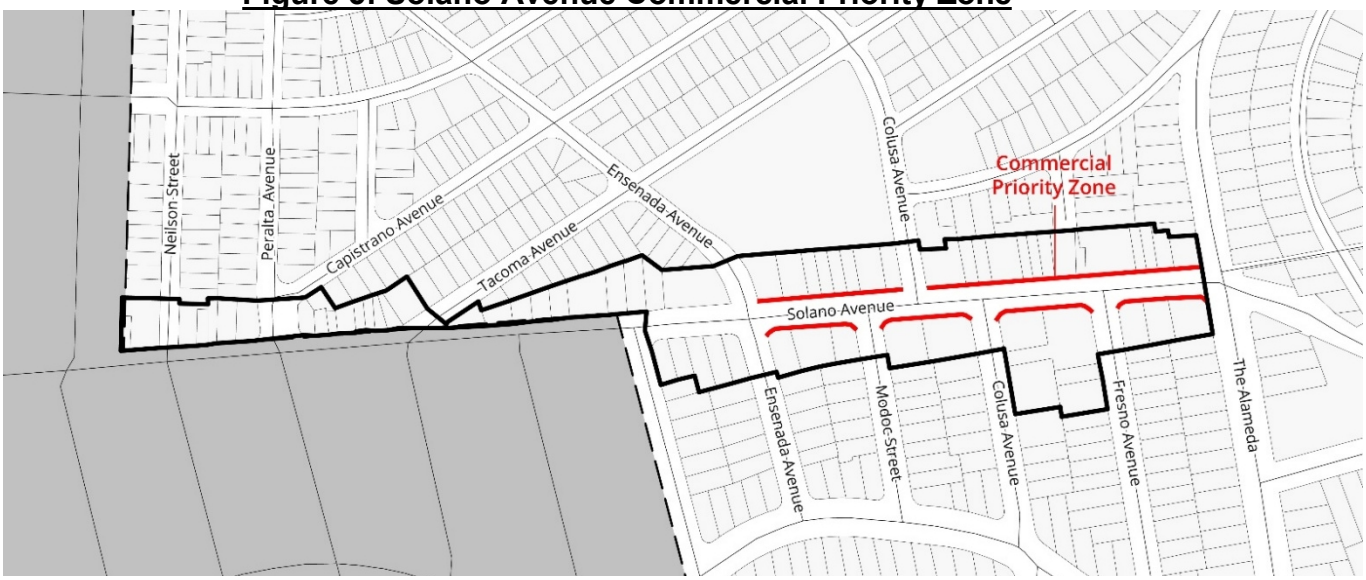
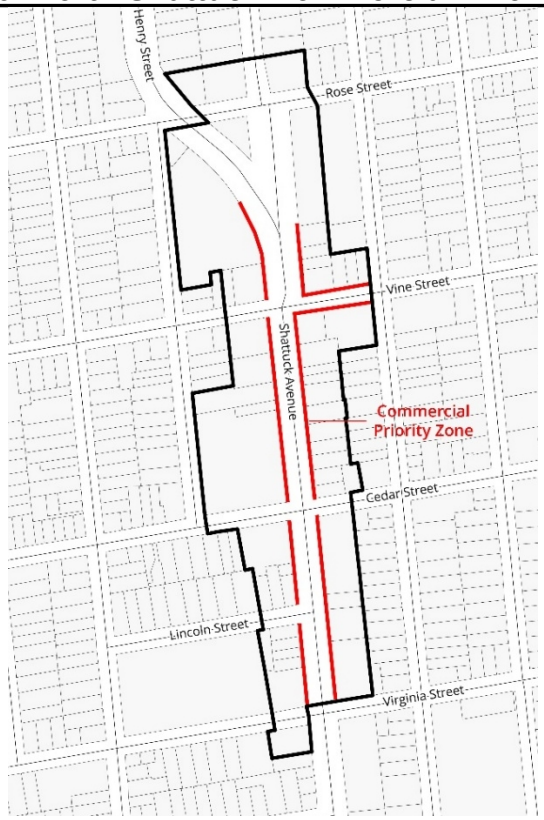


Figure 6: North Shattuck Commercial Priority Zone



Pre-Application Notice Requirement for Commercial Tenants
The proposed Zoning Ordinance amendments include early pre-application noticing requirements for proposed projects that are located on sites with existing commercial tenants. In addition to posting on-site notice, applicants would be required to notify commercial tenants prior to submitting a discretionary permit application. This provision is intended to provide businesses with earlier awareness of potential redevelopment and additional time to plan for potential impacts.

Anchor Tenant Preservation
The Mixed-Use Opportunity Areas identified in the C-SO and C-NS zoning districts include existing large-format retailers, including grocery stores and a CVS. In response to concerns that redevelopment could lead to a loss of large-format, community-serving retailers, the proposed ordinance includes Anchor Tenant Preservation requirements in the C-SO and C-NS zoning districts. Under these requirements, if an existing commercial space greater than 18,000 square feet is proposed to be demolished, a commercial space with a minimum size of 10,000 square feet shall be built on-site. The space must be able to accommodate one tenant but may be subdivided into smaller commercial spaces.

Summary of Proposed Corridors Zoning Amendments
Table 4 provides a summary of the proposed amendments included in the Ordinance (***Attachment 2***), including the specific code sections modified, a description of the changes, and the corresponding rationale.

The proposed Ordinance includes a range of amendments to Title 23 to implement updated development standards and use regulations across the C-E (Elmwood), C-NS (North Shattuck), and C-SO (Solano Avenue) zoning districts. These amendments establish a consistent regulatory framework across the three corridors, introduce Mixed-Use Opportunity Areas to accommodate additional housing, and incorporate objective design standards to support active, pedestrian-oriented ground floors and context-responsive building form. The proposed Ordinance also removes subjective findings, refines permitted uses and permit requirements, and adds provisions such as commercial tenant notification and updated glossary definitions to support implementation.

Table 4: Summary of Proposed Corridors Zoning Amendment Changes

Ord Section	BMC Section and Title	Description of Changes	Rationale
Title 23, Division 2- Zoning Districts			
1	23.204.020 -Allowed Uses in the Commercial District.	Reduction of permit requirements for select uses.	Encourage small business and create consistent standards across the commercial districts.
2	23.204.030-Additional Permit Requirements.	Revise permit requirements for New Floor Area.	Create consistent standards across commercial districts.
3	23.204.080 C-E Elmwood Commercial District.	Incidental Wholesale Activities Permit requirements removed.	Create consistent standards across commercial districts.
	23.204.080 C-E Elmwood Commercial District.	Commercial Priority Zones definition and requirements added.	Prioritize commercial uses along the ground floor.
		Mixed-Use Opportunity Areas purpose and identification added.	Identify sites along the corridor where additional housing can be accommodated.
		Table 23.204-21. C-E Development Standards – addition of height, density and lot coverage criteria	Accommodate additional housing while controlling massing.
		Ground Floor Residential Setbacks added.	Design standard for residential entries on main avenues.
		Ground Floor Design Standards added.	Establish standards for active, pedestrian-oriented ground floors with

Ord Section	BMC Section and Title	Description of Changes	Rationale
3			functional, flexible commercial spaces that support retail viability and enhance the public realm.
		Permit Findings: design and character compatibility removed.	Remove subjective standard.
4	23.204.090 C-NS North Shattuck Commercial District.	Commercial Priority Zones definition and requirements added.	Prioritize commercial uses along the ground floor.
		Mixed-Use Opportunity Areas purpose and identification added.	Identify sites along the corridor where additional housing can be accommodated.
		Table 23.204-24. C-NS Development Standards - addition of height, density and lot coverage criteria.	Accommodate additional housing while controlling massing.
		Ground Floor Residential Setbacks added.	Establish design standard for residential entries on main avenues.
		Ground Floor Design Standards added.	Establish standards for active, pedestrian-oriented ground floors with functional, flexible commercial spaces that

Ord Section	BMC Section and Title	Description of Changes	Rationale
4	23.204.090 C-NS North Shattuck Commercial District.		support retail viability and enhance the public realm.
		Anchor Tenant Preservation	Establish requirement that the removal of a 18,000 sf or greater commercial use must be replaced with a commercial space of at least 10,000 sf.
		Permit Findings: design and character compatibility removed.	Remove subjective standard.
		Commercial Priority Zones definition and requirements added.	Prioritize commercial uses along the ground floor.
5	23.204.100 C-SA South Adeline Commercial District	Figure renumbered.	Ensure consistency across Zoning Ordnance
6	23.204.120 C-SO Solano Avenue Commercial District	Mixed-Use Opportunity Areas purpose and identification added.	Identify sites along the corridor where additional housing can be accommodated.
		Table 23.204-33. C-SO Development Standards - addition of height, density and lot coverage criteria	Accommodate additional housing while controlling massing.

Ord Section	BMC Section and Title	Description of Changes	Rationale
6	23.204.120 C-SO Solano Avenue Commercial District	Ground Floor Residential Setbacks added.	Establish design standard for residential entries on main avenues.
		Commercial Priority Zones definition and requirements added.	Prioritize commercial uses along the ground floor.
		Ground Floor Design Standards added.	Establish standards for active, pedestrian-oriented ground floors with functional, flexible commercial spaces that support retail viability and enhance the public realm.
		Anchor Tenant Preservation	Establish requirement that the removal of a 18,000 sf or greater commercial use must be replaced with a commercial space of at least 10,000 sf.

Ord Section	BMC Section and Title	Description of Changes	Rationale
6	23.204.120 C-SO Solano Avenue Commercial District	Permit Findings: design and character compatibility removed.	Remove subjective standard.
Title 23, Div 3- Citywide Provisions			
7	23.302.070 Use-Specific Regulations.	Requirement for no building openings for food service-establishments in C-NS and C-E districts removed.	Create consistent standards across commercial districts.
8	Table 23.302-7 Permit Requirements for Parking Lots/Structures	AUP for parking lots in the C-SO removed. Use Permits now required.	Create consistent requirements across commercial districts.
9	23.322.120 Transportation Services Fee.	TSF may be required for new development in C-SO, C-NS. C-E added to this category.	Create consistent requirements across commercial districts.
Title 23, Div 4 – Permits and Administration			
10	23.404.020(D) – Pre-Application Notice Posted by Applicant	Requirement for applicants to provide written notice to existing commercial tenants on the subject property prior to application submittal added.	Support commercial tenants at risk of displacement.
Title 23, Div 5 – Glossary			
11 - 13	23.502.020 Defined Terms	“C” Terms – “Cold Shell (Commercial Space) definition added.	Establish new definitions.

Ord Section	BMC Section and Title	Description of Changes	Rationale
11-13		"R" Terms – "rectilinear" definition added.	
		"W" Terms – "Warm Shell (Commercial Space) definition added.	

BACKGROUND

The Corridors Zoning Update is an implementation action of Berkeley's 2023–2031 Housing Element (Program 27)[5] to expand housing opportunities in three high-resource commercial and transit corridors—Solano Avenue, North Shattuck, and College Avenue. The project seeks to affirmatively further fair housing by addressing historic patterns of exclusionary zoning and promoting equitable distribution of housing growth, while supporting small, locally owned businesses.

The three corridors are within Berkeley's highest resource and highest-income neighborhoods, characterized by access to essential amenities and opportunities that promote well-being and economic advancement for residents. A goal of the Corridors Zoning Update is to increase the maximum allowable height along the three corridors to match or exceed the maximum allowable height along other, lower-resourced or lower-income Berkeley neighborhoods, such as Adeline Street, Telegraph Avenue, University Avenue, Downtown and San Pablo, as illustrated in Table 5.

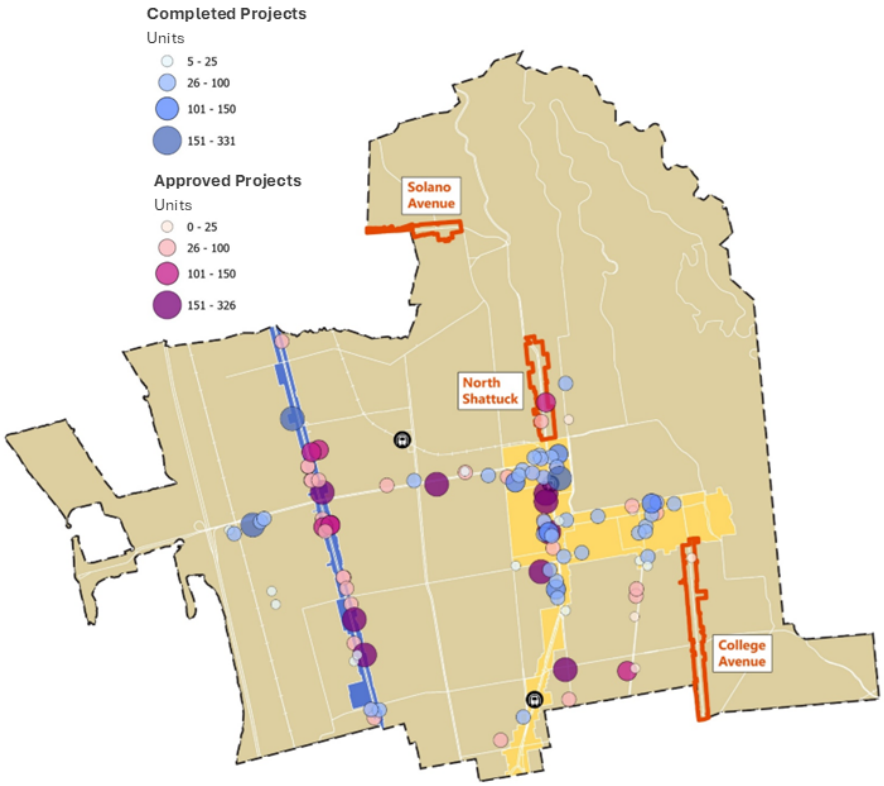
Table 5. Base Height Comparison along Berkeley Commercial Corridors

Maximum Stories	Zoning District
7/8 stories	• Downtown Core/Corridor (C-DMU) • Telegraph Avenue Commercial (C-T) • San Pablo Commercial (C-SP)
6 stories	
4 stories	• Adeline Corridor Commercial (C-AC), South Shattuck • North Shattuck, south of Virginia (C-C) • Corridor Commercial (C-C), Telegraph Avenue • University Avenue Commercial (C-U)
3 stories	• Neighborhood Commercial (C-N), College & Alcatraz • **North Shattuck Commercial (C-NS), existing** • Adeline Corridor (C-AC), North and South Adeline • West Berkeley Commercial (C-W), 4th Street
2 stories	• **Solano Avenue Commercial (C-SO), existing** • **College Avenue Commercial (C-E), existing**

[5] *City of Berkeley Housing Element Update 2023-2031*. https://berkeleyca.gov/sites/default/files/documents/Berkeley_2023-2031%20Housing%20Element_02-17-2023v2_0.pdf

The lower development standards across the three corridors can at least in part explain why very little housing development has occurred along the three corridors, while most new housing development has occurred in areas with more expansive development standards, as shown in Figure 7, below.

Figure 7. Completed and Pipeline Projects, 2014-2024.



To complete the Corridors Zoning Update, the City engaged a consultant team led by Raimi + Associates, with support from Plan to Place (for community engagement), Yes Duffy Architects (for images and modelling), Strategic Economics (for financial analysis and analysis of small business displacement factors and mitigation measures), Rincon Consultants (for CEQA review), and Kittleson & Associates (for transportation analysis).

The team's work has been informed by community input gathered through meetings, workshops, and direct outreach efforts, including:

- Community Workshop #1 (May 1, 2025), a citywide on-line introductory workshop[6];
- Community Workshop #2, corridor-specific, in-person workshops in North Shattuck (August 20, 2025), College Avenue (August 26, 2025) and Solano Avenue (August 27, 2025);[7]
- Pop-up outreach events at Solano Stroll (September 15, 2025), North Shattuck Farmers' Market (September 18, 2025); and Downtown Berkeley Farmers' Market (September 20, 2025);[8]
- Planning Commission worksession (September 17, 2025);[9]
- City Council worksession (November 6, 2025); [10]
- On-line survey (August 27 – October 10, 2025), with approximately 1664 respondents;[11]
- Two Planning Commission discussions
    - Objective Design Standards and Small Business Anti-Displacement Tools (February 4, 2026),[12] and
    - Planning Commission Subcommittee Report (March 4, 2026);[13]
- Planning Commission Public Hearing (May 6, 2026).[14]

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[6] A summary can be found here: https://berkeleyca.gov/sites/default/files/documents/Berkeley%20Corridors%20Zoning%20Update_Workshop%20%231%20Summary_0.pdf
[7] A summary can be found here: https://berkeleyca.gov/sites/default/files/documents/Berkeley%20Corridors%20Workshop%20%232%20Summary.pdf
[8] A summary can be found here: https://berkeleyca.gov/sites/default/files/documents/Berkeley%20Corridors_Pop%20Up%20Summary_Final_0.pdf
[9] Agenda materials for the Planning Commission worksession can be found here: https://berkeleyca.gov/sites/default/files/documents/Corridors%20PC_Staff%20Report.pdf
[10] Agenda materials for the Council worksession can be found here: https://berkeleyca.gov/sites/default/files/city-council-meetings/2025-11-06%20Agenda%20Packet%20-%20Council%20-%20WEB.pdf
[11] A summary can be found here: https://berkeleyca.gov/sites/default/files/documents/BerkeleyCorridors_SurveyResults_Final_0.pdf
[12] Agenda materials for this discussion can be found here: https://berkeleyca.gov/sites/default/files/2026-01/Item%2010B%20Packet.pdf
[13] The Subcommittee's report can be found here: https://berkeleyca.gov/sites/default/files/legislative-body-meeting-attachments/Sub-Committee%20Recommendation%20re%20Corridors%20240226_.pdf
[14] Agenda materials for the Planning Commission Public Hearing can be found here: https://berkeleyca.gov/sites/default/files/2026-04/2026-05_06_PC_Item%2010A_Corridors.pdf

Land Use Planning staff and the consultant team also met with the following organizations over the course of the Berkeley Corridors Zoning Update:

- Elmwood Merchants Association (June 24, 2025)
- Solano Avenue Business Improvement District (July 22, 2025)
- Claremont Elmwood Neighborhood Association (July 10, 2025)
- Berkeley Design Associates (May 14, 2026)
- Berkeley Neighborhoods Council (August 9, 2025)
- Berkeley Neighbors for Housing and Climate Action (August 14, 2025)
- North Shattuck Merchants Association (December 19, 2025)
- Avalon/Monkey Island Neighbors (January 14, 2026)
- Save Berkeley Shops (January 15, 2026, April 28, 2026, July 28, 2026)
- Keith-Shasta Neighbors (January 23, 2026)
- Berkeley Urban Studies Student Association/Cal Department of City and Regional Planning students (February 11, 2026)

ENVIRONMENTAL SUSTAINABILITY AND CLIMATE IMPACTS

The proposed Berkeley Corridors Zoning Update would implement Zoning Ordinance and Zoning Map amendments and associated General Plan text and map amendments for three corridors: Solano Avenue, North Shattuck, and College Avenue, consistent with Housing Element Update Program 27. The Zoning Update would increase allowable density, height, and building bulk to facilitate mixed-use and residential development along these corridors. Therefore, the entire Update—including Zoning Ordinance and Zoning Map amendments and associated General Plan text and map amendments—is exempt from the California Environmental Quality Act (CEQA) pursuant to Public Resources Code Section 21080.085(a).[15]

Additionally, the environmental impacts of implementing the Housing Element Update were previously analyzed in the 2023 Housing Element Update Environmental Impact Report (2023 EIR- ***Link 4***).[16] The proposed zoning changes represent a refinement of the policies evaluated in the 2023 EIR. Therefore, minor modifications and additions to that environmental analysis are necessary. As documented in the Addendum prepared

[15] CD Memorandum, California Environmental Quality Act (CEQA) Reforms for Housing Element Rezoning (Public Resources Code Section 21080.085) (May 19, 2026), *available at* https://www.hcd.ca.gov/sites/default/files/docs/planning-and-community/memos/ceqa-rezone-exemption-memo-051926.pdf

[16] https://berkeleyca.gov/sites/default/files/documents/Berkeley%202023-2031%20Housing%20Element%20Update%20Draft%20EIR.pdf

for this project *(**Attachment 1, Exhibit B**),* these changes do not require preparation of a subsequent or supplemental EIR.

Pursuant to Section 15164 of the CEQA Guidelines, a lead agency may prepare an addendum to a previously certified EIR when only minor technical changes or additions to the environmental analysis are necessary and none of the conditions requiring a subsequent EIR have occurred. Under CEQA Guidelines Section 15162(a), once an EIR has been certified for a project, a subsequent or supplemental EIR is required only if substantial changes are proposed to the project, substantial changes occur in the circumstances under which the project is undertaken, or new information of substantial importance becomes available that would result in new significant environmental impacts or a substantial increase in the severity of previously identified significant impacts. Based on the analysis contained in the Addendum, none of these conditions are present. Therefore, preparation of a subsequent or supplemental EIR is not required.

RATIONALE FOR RECOMMENDATION

The proposed action includes the Planning Commission's recommended Zoning Ordinance, Zoning Map, and General Plan amendments to increase housing capacity along Solano Avenue, North Shattuck, and College Avenue, consistent with Housing Element Program 27—Priority Development Areas, Commercial and Transit Corridors, and the City's Affirmatively Furthering Fair Housing obligations. The proposed amendments would focus additional development capacity on designated Mixed-Use Opportunity Areas while maintaining nearly all existing zoning standards on most corridor parcels to balance housing production goals with small business retention and neighborhood compatibility.

The proposed amendments also establish objective design standards, Commercial Priority Zones, and commercial tenant notification requirements intended to support active, pedestrian-oriented corridors and reduce displacement impacts on existing businesses.

The proposed action includes recommendations to the City Manager to direct future work, brought forward in response to community concerns. This work includes exploring options to mitigate any identified negative impacts to existing businesses that occupy buildings redeveloped pursuant to the amendments and directs staff to evaluate the proposed amendments in five years with respect to any impacts on emergency services.

The Alternative Actions Considered section below includes discussion of additional zoning and development framework alternatives considered during the public process and Planning Commission review.

ALTERNATIVE ACTIONS CONSIDERED

Alternatives considered include:

Building Form Alternatives (Presented to the City Council on November 6, 2025)
As part of the Corridors Zoning Update Alternatives Report and City Council study session on November 6, 2025, staff and the consultant team presented two corridor-wide building form alternatives that evaluated varying levels of height and density across the three corridors. These alternatives informed subsequent Planning Commission direction to focus additional development capacity on targeted Mixed-Use Opportunity Areas rather than applying updated development standards uniformly across the corridors.

- **Alternative 1 – Medium Density.**
  This alternative would establish a medium-density development framework by increasing allowable building heights to approximately a 0.8:1 building height-to-street-width ratio. The alternative would allow up to 3 stores, on College Avenue, 4 stories on Solano Avenue, and 5 stories on North Shattuck, with additional height possible through State Density Bonus. This alternative represented the lower-intensity growth scenario evaluated in the Alternatives Report.

- **Alternative 2 – Higher Density.**
  This alternative would establish a higher-density development framework by increasing allowable building heights one additional story above Alternative 1. The alternative would allow up to 4 stories on College Avenue, 5 stories on Solano Avenue, and 6 stories on North Shattuck, with additional height possible through State Density Bonus. This alternative represented the highest-intensity growth scenario evaluated in the Alternatives Report and was intended to maximize mid-rise mixed-use and residential development potential along the corridors.

Building Form Standards: Massing Standards and Upper Floor Stepbacks (Presented to Planning Commission on September 8, 2025)
Staff presented to the Planning Commission recommended building form standards to address transitions to residential neighborhoods. The proposed building massing standards would limit where building area can be located on an individual lot, with the goal of having buildings step down in the rear, where the corridors' Commercial zoning districts adjoin Residential zoning districts. Proposed upper-floor stepbacks further sculpt building massing by requiring the building façade to stepback above a certain height to reduce the perceived height of a building.

The Planning Commission removed both building form standards as part of its recommendation to the City Council, due to concerns that these standards could reduce residential floor area. The Planning Commission maintained objective design standards related to ground floor frontages and commercial spaces.

CONTACT PERSON
Justin Horner, Principal Planner, Planning & Development, 510-981-7476

Attachments:
1: Resolution
    Exhibit A: General Plan and Land Use Map Amendments
    Exhibit B: CEQA Statement of Overriding Consideration and Addendum to 2023-2031 Housing Element Update
2: Zoning Ordinance Amendments
3: Housing Capacity Analysis
4: Public Hearing Notice

Links:

1. Planning Commission Presentation, Feb 4, 2026 (Linked)
2. Ad-Hoc Committee's Memo, March 4, 2026 (Linked)
3. Planning Commission Staff Report, May 6, 2026 (Linked)
4. 2023 Housing Element Environmental Impact Report (Linked)

RESOLUTION NO. ##,###-N.S.

A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF BERKELEY TO ADOPT PROPOSED AMENDMENTS TO TITLE 23 (ZONING ORDINANCE) AND THE ZONING MAP TO PERMIT THE CITY OF BERKELEY ENCOURAGE HOUSING ALONG COLLEGE AVENUE, SHATTUCK AVENUE AND SOLANO AVENUE AND ADOPT CONFORMING GENERAL PLAN TEXT AMENDMENTS

WHEREAS, Berkeley Municipal Code (BMC) Chapter 23.402.020 (Review and Decision-Making Authority) authorizes the Planning and Development Department to evaluate Zoning Ordinance Amendments; and

WHEREAS, the City of Berkeley ("City"), in accordance with the provisions of California Government Code Section 65300 et seq., is required to adopt a General Plan for its long-range development, and further to periodically update that plan to reflect current conditions; and

WHEREAS, the City's 2023-2031 6th Cycle Housing Element was adopted by the Berkeley City Council on January 18, 2023 and certified by the State Department of Housing & Community Development on February 28, 2023; and

WHEREAS, the adopted 2023-2031 Housing Element Update (HEU) includes "Program 27 – Priority Development Areas (PDAs), Commercial and Transit Corridors" to accommodate housing capacity and growth on transit and commercial corridors, particularly in formerly red-lined areas and higher resource areas of Solano Avenue, Shattuck Avenue and College Avenue by pursuing zoning map and development standard amendments to allow multi-unit development on lots in the C-SO, C-NS and C-E districts; and

WHEREAS, the Corridors Zoning Update was developed to increase housing capacity along commercial and transit corridors, consistent with the City's Housing Element and Affirmatively Furthering Fair Housing (AFFH) obligations; and

WHEREAS, small businesses are vital to the wellbeing of commercial corridors and the City, and any negative impacts to small businesses that may result from housing development projects should be mitigated; and

WHEREAS, on May 6, 2026, the Planning Commission held a public hearing and considered all public comments received, the presentation by City staff, the staff report, and all other pertinent documents regarding the proposed request; and

WHEREAS, the proposed Zoning Ordinance, Zoning Map and General Plan amendments together constitute a rezoning that implements Housing Element Update Program 27 in the City's approved Housing Element and are therefore exempt from CEQA pursuant to Public Resources Code Section 21080.085(a); and

WHEREAS, the environmental impacts of the proposed Zoning Ordinance, Zoning Map and General Plan amendments were previously analyzed in the 2023 Housing Element Update Environmental Impact Report (Final EIR), and an Addendum has been prepared pursuant to CEQA Guidelines Section 15164 to address minor modifications and additions to that analysis; and

WHEREAS, in connection with the amendments, an Addendum to the certified Final EIR pursuant to Section 15164 of the CEQA Guidelines has been prepared that describes the changes the proposed Project would have to the HEU, and compares the impacts of those changes to the impacts of the HEU identified in the EIR; and

WHEREAS the Addendum to the certified Final EIR determined that potential impacts associated with the proposed Project are consistent with potential impacts disclosed and analyzed in the EIR. That is, the proposed Project would not result in any new significant environmental effects or a substantial increase in the severity of significant effects previously identified in the EIR. Further, no new information of substantial importance exists which would require major revisions of the HEU EIR. Therefore, none of the conditions outlined in CEQA Guidelines Section 15162(a)(1-2) requiring preparation for a subsequent EIR have been met. Further, none of the conditions outlined in CEQA Guidelines Section 15162(a)(3)(A-D) requiring preparation of a subsequent EIR have been met; and

WHEREAS, based on the analysis contained in the Addendum, no further evaluation of environmental impacts is required for the proposed Project, no subsequent EIR is required pursuant to CEQA Guidelines Section 15162, and the Addendum is the appropriate level of environmental analysis and documentation for the proposed Project pursuant to CEQA Guidelines Section 15164, and therefore the Mitigation Monitoring and Reporting Program in the Final EIR sufficiently addresses impacts from the proposed Project; and

WHEREAS, all documents constituting the record of this proceeding are and shall be retained by the City of Berkeley Planning and Development Department, Land Use Planning Division, at 1947 Center Street, Berkeley, California; and

WHEREAS, public hearing notice was published in the Berkeley Voice, posted at each street frontage adjacent to properties proposed for rezoning, and mailed to all property owners, tenants, and residents within properties proposed to be rezoned pursuant to California Government Code Section 65090 and BMC Section 23.404.040 for the City Council hearing on December 1, 2026.

NOW THEREFORE BE IT RESOLVED, that the City Council of the City of Berkeley: 1) Adopt findings in support of separately proposed Zoning Ordinance and Zoning Map amendments; 2) Amend the General Plan to incorporate changes consistent with the Zoning Ordinance amendments; and 3) amend the Land Use Diagram to redesignate select parcels currently designated as Lower Density and Medium Density Residential to Neighborhood Commercial.

Pursuant to Berkeley Municipal Code Section 23.412.060, the City Council makes the

following findings to support its recommendation for the zoning ordinance amendments:

(1) **The proposed amendment is consistent with the General Plan and any applicable specific plan or area plan.** The proposed amendments are consistent with the General Plan, including the 2023–2031 Housing Element, by increasing housing capacity along identified commercial corridors (College Avenue, North Shattuck, and Solano Avenue). The amendments implement Housing Element Program 27 and support policies related to sustainable growth, transit-oriented development, and Affirmatively Furthering Fair Housing.

(2) **The proposed amendment is consistent with state law.** The proposed amendments are consistent with state law, including the Housing Crisis Act (SB 330), as they do not reduce allowable density or intensity. The amendments implement the City's certified Housing Element and align with state policies promoting residential development on commercial corridors.

(3) **The proposed amendment will not be detrimental to the public interest, health, safety, convenience, or welfare**. The zoning ordinance amendments serve the public interest by increasing housing opportunities in transit-accessible, high-resource areas while maintaining appropriate development standards. The proposed regulations ensure compatibility with surrounding neighborhoods and compliance with applicable health and safety requirements.

(4) **The proposed amendment is internally consistent with other applicable provisions of the Zoning Ordinance**. The amendments are internally consistent with the Zoning Ordinance as they update and align development standards, permitted uses, and definitions across the C-E, C-NS, and C-SO districts, while maintaining consistency with other applicable provisions of Title 23.

(5) **The affected site is physically suitable in terms of design, location, shape, size, and other characteristics to ensure that the permitted land uses and development will comply with the Zoning Ordinance and General Plan and contribute to the health, safety, and welfare of the property, surrounding properties, and the community at large.** The affected sites are physically suitable for the proposed zoning map amendments, as the changes align zoning designations with existing corridor conditions and development patterns. The inclusion of the Andronico's parking lot parcels into the C-SO district on Solano Avenue creates consistent zoning along each corridor and supports appropriate mixed-use and commercial development consistent with surrounding uses and infrastructure. The inclusion of parcels on Addison Street next to the College Avenue Post Office in the C-E district places multiple adjacent parcels that are under common ownership under a single zoning designation, and creates a site that can accommodate mixed-use residential development at a scale that helps Berkeley meet its Housing Element goals to affirmatively further fair housing in high-resource areas; and

BE IT FURTHER RESOLVED that pursuant to California Government Code Sections 65353 and 65853, the City Council makes the following findings to support the General Plan text amendments included as Exhibit A of this resolution:

(1) **The proposed amendment is in the public interest.** The General Plan amendment serves the public interest by facilitating additional housing capacity and production to better meet housing demand, by reversing historically discriminatory land use policies, and Affirmatively Furthering Fair Housing; and

(2) **The proposed amendment is consistent and compatible with the General Plan.** The proposed General Plan amendments would ensure internal consistency among General Plan elements. The potential effects of the proposed amendment have been evaluated and have been determined not to be detrimental to the public health, safety, or welfare. The General Plan amendments would not be detrimental to the public health, safety and welfare of the City because they would facilitate development that would be completed in compliance with current building and fire codes and regulations; and would be subject to the City's standard conditions of approval regarding noise and air quality, waste diversion, toxics and stormwater requirements, as well as applicable mitigation measures included in the Housing Element Update EIR; and

BE IT FURTHER RESOLVED that the City Council of the City of Berkeley hereby adopts the General Plan amendments, included as Exhibit A of this resolution; and

BE IT FURTHER RESOLVED, that the City Council, as the final decision-making body for the lead agency, has considered and analyzed the Addendum and hereby adopts and incorporates by reference into this Resolution the CEQA Findings and Statement of Overriding Considerations (Exhibit C) and incorporates by reference the Mitigation Measure Reporting Program (MMRP) contained in the certified Final Environmental Impact Report for the Housing Element Update 2023-2031 (SCH#2022010331) and adopted via Resolution No. 70,669-N.S. (Jan. 18, 2023).

Exhibits

A: General Plan and Land Use Diagram Amendments for Solano Avenue, Shattuck Avenue, and College Avenue Corridors Zoning Update

B: CEQA Statement of Overriding Consideration

- Attachment 1. Addendum to the Housing Element Environmental Impact Report

Exhibit A

General Plan Amendments for Solano Avenue, Shattuck Avenue, and College Avenue Corridors Zoning Update

Land Use Element

Page LU-17

Policy LU-26 Neighborhood Commercial Areas

Maintain and improve Neighborhood Commercial areas, such as Elmwood, Solano, and North Shattuck, as pedestrian-friendly, visually attractive areas and ensure that Neighborhood Commercial areas fully serve neighborhood needs. (See Land Use Diagram for locations of Neighborhood Commercial areas. Also see Economic Development and Employment Policy ED-4 and Urban Design and Preservation Policy UD-28.)

Actions:

A. Require ground-floor commercial uses to be oriented to the street and sidewalks to encourage a vital and appealing pedestrian experience.

B. Ensure safe, well-lighted, wide walkways that are appropriately shaded for compatibility with upper-story residential units and adequate traffic signals for pedestrian street-crossings in commercial areas.

C. Provide street trees, bus shelters, and benches for pedestrians in commercial areas.

D. Provide bicycle facilities and ample and secure bicycle parking wherever appropriate and feasible.

E. Maintain and encourage a wide range of community and commercial services, including basic goods and services.

F. Encourage sensitive infill development of vacant or underutilized property that is compatible with existing development patterns.

G. Control the design and operation of commercial establishments to ensure their compatibility with adjacent residential areas.

~~H. Use design review and careful land use decisions to preserve the historic character of Neighborhood Commercial areas.~~

Page LU-28

Neighborhood Commercial

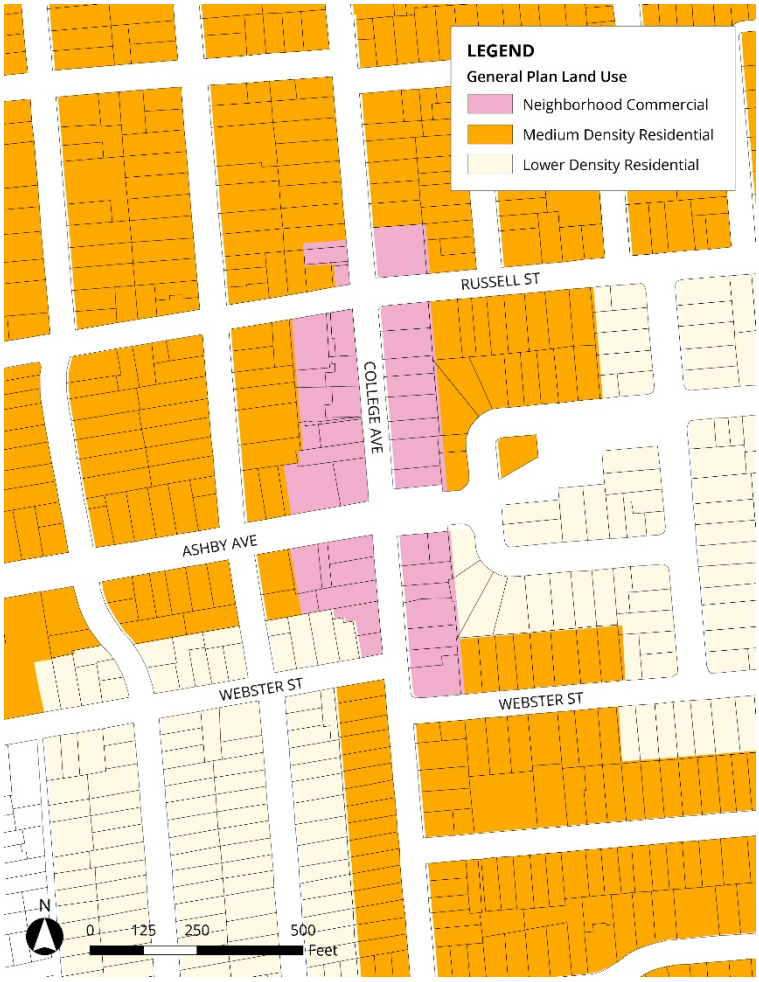
These areas of the city are generally characterized by pedestrian-oriented, neighborhood-serving commercial development, and multi-family residential structures. These areas are typically located on two-lane streets with on-street parking and transit. Appropriate uses for these areas include: local-serving commercial, residential, office, community service, and institutional. Building intensity will generally range from a Floor Area Ratio (FAR) of less than 1 to an FAR of 3. Population density will generally range from 44 to 365 persons per acre.

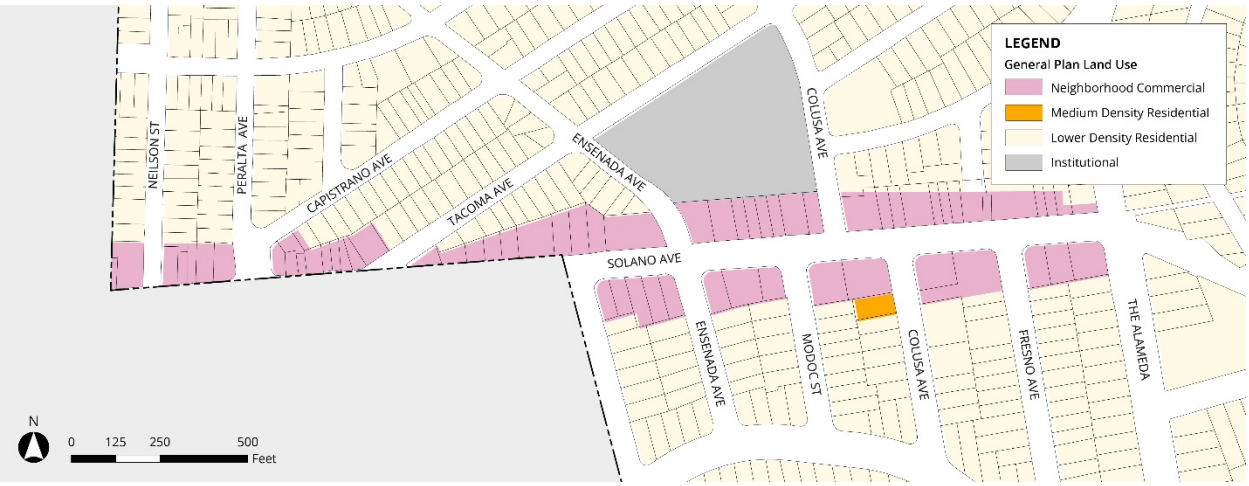
The Elmwood Commercial, North Shattuck Commercial, and Solano Avenue Commercial zoning districts include a Mixed-Use Opportunity Area, which allows for population densities up to 365 persons per acre.

For information purposes, the compatible zoning districts for this classification are shown below with accompanying development standards.

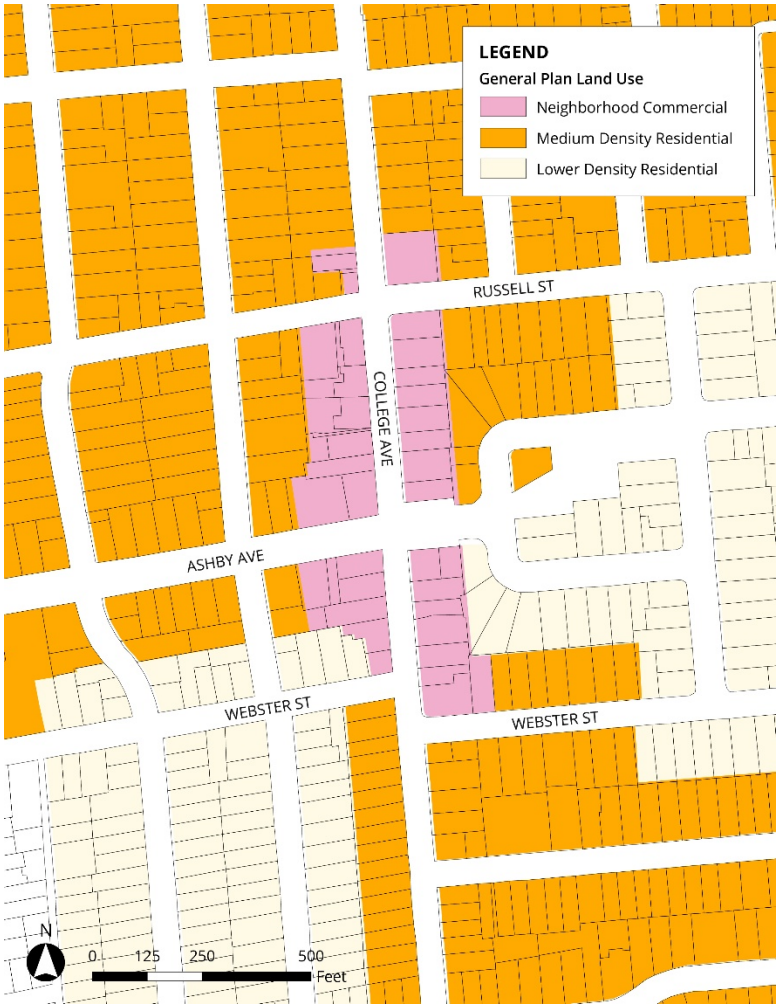
Zoning District	Maximum FAR	Maximum Height	Maximum Density	Mixed-Use Opportunity Area Maximum Height	Mixed-Use Opportunity Area Maximum Density
Neighborhood Commercial (C-N):	3	35ft	N/A	N/A	N/A
Elmwood Commercial (C-E):	.8 to 1 (non-residential)	28ft	40 du/ac	58 ft.	115 du/ac
North Shattuck Commercial (C-NS):	1 (non-res.)	38 ft	85 du/ac	78 ft.	165 du/ac
Solano Avenue Commercial (C-SO):	2 (non-residential)	28ft	60 du/ac	68 ft.	140 du/ac
South Area Commercial (C-SA)[7]	4	24-36ft	N/A	N/A	N/A

Map 1. Existing General Plan Land Use Designations





Map 2. Proposed General Plan Land Use Designations



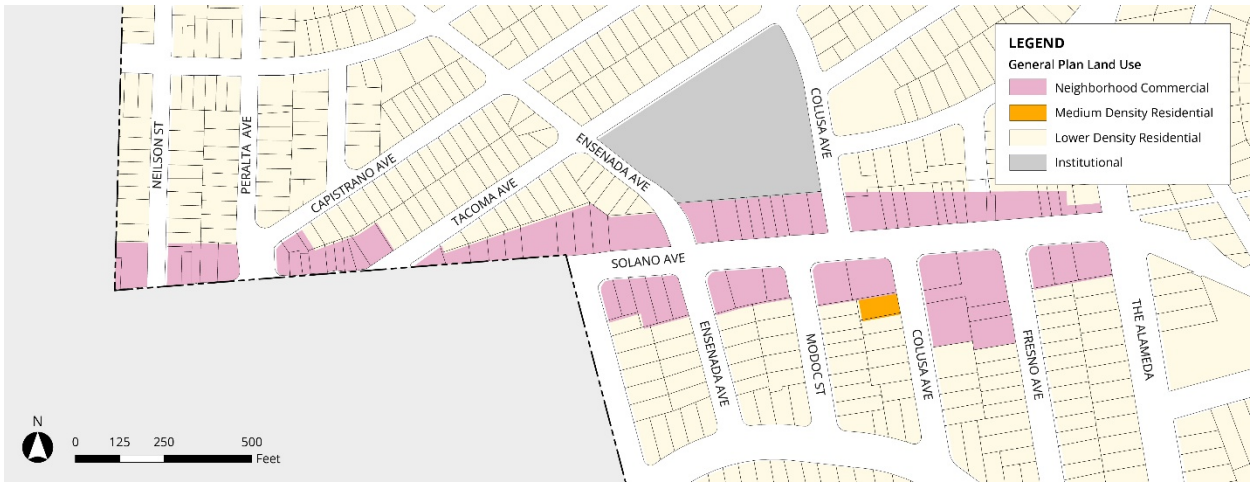

LEGEND
General Plan Land Use
Neighborhood Commercial
Medium Density Residential
Lower Density Residential
Institutional
NEILSON ST
PERALTA AVE
CAPISTRANO AVE
TACOMA AVE
ENSENADA AVE
COLUSA AVE
SOLANO AVE
ENSENADA AVE
MODOC ST
COLUSA AVE
FRESNO AVE
THE ALAMEDA
N
0 125 250 500
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Exhibit B

CEQA Statement of Overriding Consideration

Exhibit B

CEQA Findings and Statement of Overriding Considerations

for the

Berkeley Corridors Zoning Update

Pursuant to Sections 15091 and 15093 of the
State CEQA Guidelines and Section 21081 of the Public Resources Code

As described further below, the proposed Berkeley Corridors Zoning Update (the Project) implements the 2023-2031 Housing Element Update (HEU) Project and therefore relies on the Final Environmental Impact Report (Final EIR) prepared by the City of Berkeley (City) for the City of HEU Project (SCH#2022010331) and certified via Resolution 70,669-N.S. (Jan. 18, 2023). The Final EIR identifies significant environmental impacts that will result from implementation of the HEU, including implementation of the Project. The City finds that the mitigation measures identified in the HEU EIR and adopted via Resolution 70,669-N.S. will reduce all but the following significant environmental effects (impacts) from the HEU and the Project to levels that are less than significant: historical resources, construction noise, cumulative cultural resources, and cumulative construction noise.[1] For those impacts, no feasible mitigation measures have been identified to reduce these impacts to a less-than-significant level or mitigation measures have been identified and included but would not reduce impacts to a level of less than significant; therefore, these impacts will remain significant unavoidable impacts of the project. These findings contain a statement of overriding considerations that explains why the benefits of the proposed Project outweigh the unavoidable adverse environmental effects and are therefore acceptable.

In accordance with CEQA and the CEQA Guidelines, the City adopts these findings as part of the project approval.

TABLE OF CONTENTS

SECTION 1: INTRODUCTION 3

SECTION 2: PROJECT DESCRIPTION: Berkeley Corridors Zoning Update 3

SECTION 3: ENVIRONMENTAL REVIEW PROCESS 5

SECTION 4: FINDINGS 5

SECTION 5: FEASIBILITY OF PROJECT ALTERNATIVES 20

SECTION 6: STATEMENT OF OVERRIDING CONSIDERATIONS 22

SECTION 7: INCORPORATION BY REFERENCE 23

SECTION 8: RECIRCULATION NOT REQUIRED 23

SECTION 9: RECORD OF PROCEEDINGS 23

SECTION 10:SUMMARY 24

[1] The Final EIR also determined that wildfire impacts and cumulative wildfire impacts would be significant and unavoidable, but these impacts could only occur due to development within the City of Berkeley's Very High Fire Hazard Zones. The project does not include parcels located in the City of Berkeley's Very High Fire Hazard Zones.

SECTION 1: INTRODUCTION

1.1 Statutory Requirements for Findings

CEQA Guidelines Section 15168(c) states that:

> (c) Use With Later Activities. Later activities in the program must be examined in the light of the program EIR to determine whether an additional environmental document must be prepared.
>
> (1) If a later activity would have effects that were not examined in the program EIR, a new initial study would need to be prepared leading to either an EIR or a negative declaration. That later analysis may tier from the program EIR as provided in Section 15152.
>
> (2) If the agency finds that pursuant to Section 15162, no subsequent EIR would be required, the agency can approve the activity as being within the scope of the project covered by the program EIR, and no new environmental document would be required. Whether a later activity is within the scope of a program EIR is a factual question that the lead agency determines based on substantial evidence in the record. Factors that an agency may consider in making that determination include, but are not limited to, consistency of the later activity with the type of allowable land use, overall planned density and building intensity, geographic area analyzed for environmental impacts, and covered infrastructure, as described in the program EIR.
>
> (3) An agency shall incorporate feasible mitigation measures and alternatives developed in the program EIR into later activities in the program.
>
> (4) Where the later activities involve site specific operations, the agency should use a written checklist or similar device to document the evaluation of the site and the activity to determine whether the environmental effects of the operation were within the scope of the program EIR.
>
> (5) A program EIR will be most helpful in dealing with later activities if it provides a description of planned activities that would implement the program and deals with the effects of the program as specifically and comprehensively as possible. With a good and detailed project description and analysis of the program, many later activities could be found to be within the scope of the project described in the program EIR, and no further environmental documents would be required.

Further, CEQA Guidelines Section 15091 states that:

> (a) No public agency shall approve or carry out a project for which an EIR has been certified which identifies one or more significant environmental effects of the project unless the public agency makes one or more written findings for each of those significant effects, accompanied by a brief explanation of the rationale for each finding. The possible findings are:
>
> (1) Changes or alterations have been required in, or incorporated into, the project which avoid or substantially lessen the significant environmental effect as identified in the final EIR.
>
> (2) Such changes or alterations are within the responsibility and jurisdiction of another public agency and not the agency making the finding. Such changes have been adopted by such other agency or can and should be adopted by such other agency.
>
> (3) Specific economic, legal, social, technological, or other considerations, including provision of employment opportunities for highly trained workers, make infeasible the mitigation measures or project alternatives identified in the final EIR.

SECTION 2: PROJECT DESCRIPTION: Berkeley Corridors Zoning Update

This section provides a brief description of the project and lists the objectives of the proposed project.

2.1 Project Description

The Corridors Zoning Update (the Project) implements Program 27 – Priority Development Areas (PDAs), Commercial and Transit Corridors, in the *City of Berkeley 2023-2031 Housing Element (Housing Element)*. It includes zoning changes to increase housing development in the city's highest-resource areas, specifically along Solano Avenue, North Shattuck, and College Avenue. These areas have been identified as priority corridors by Berkeley City Council and Program 27 of the City's Housing Element 2023-2031 to address housing scarcity, affirmatively further fair housing, and overcome barriers to development.

The Berkeley Corridors Zoning Update will make zoning ordinance and zoning map amendments and conforming General Plan amendments to encourage mixed-use and residential development along the three corridors. The Berkeley Corridors Zoning Update does not include redesigning streets, sidewalks, or the public right-of-way along the three corridors nor propose new parks and public open spaces in those areas.

For the implementation of the Housing Element Update, the EIR assumed growth of an estimated 278 units based on opportunity sites and pipeline projects. This total may not include all potential residential development sites within the City limits, and individual sites may or may not be developed at the allowable densities. The placement and design of buildings on specific sites cannot be determined until the City receives an application for a specific project.

The EIR also analyzed alternatives as described in Section 5, below.

The Addendum prepared by the City analyzed the potential for an additional 4,399 new units attributable to the Corridors Zoning Update for a total of 4,677 new units in the Project area.

2.2 Project Objectives

Pursuant to *CEQA Guidelines* Section 15124(b), the EIR project description must include "[a] statement of objectives sought by the proposed project… The statement of objectives should include the underlying purpose of the project." The City of Berkeley 2023-2031 Housing Element Update is intended to achieve the following project objectives:

1. Adopt policies and programs that meet the City's RHNA with the recommended buffer, provide additional housing opportunities consistent with other City priorities, remove governmental constraints to the maintenance, improvement and development of housing, and ensure ongoing compliance with State Housing Element law and the No Net Loss provisions of State law through the eight-year cycle.
2. Adopt policies and programs to encourage the development of affordable housing at a range of income levels consistent with RHNA, including at least 2,450 units for Very Low-Income households, at least 1,400 units for Low Income households, and at least 1,400 units for Moderate Income households.
3. Encourage the development of housing with access to transit, jobs, services, and community benefits in a manner that distributes affordable and special needs housing in high resource neighborhoods and affirmatively furthers fair housing.
4. Identify housing policies and programs that will conserve and rehabilitate existing units, provide services to increase housing opportunities for all residents of Berkeley, and increase the energy efficiency of both current and future housing units.

The Corridors Zoning Update, as a later activity in the HEU, shares these objectives.

SECTION 3: ENVIRONMENTAL REVIEW PROCESS

Pursuant to the California Environmental Quality Act (CEQA), lead agencies are required to consult with public agencies having jurisdiction over a proposed project and to provide the general public with an opportunity to

comment on the Draft EIR.

On January 14, 2022, the City of Berkeley issued a Notice of Preparation (NOP) for a 30-day comment period to receive input on the scope and content of the EIR and help identify the types of impacts that could result from the project as well as potential areas of controversy. The NOP was filed with the County Clerk, published in a local newspaper, and mailed to public agencies (including the State Clearinghouse), organizations, and individuals considered likely to be interested in the project and its potential impacts. The City received written responses to the NOP regarding the scope and content of the EIR. The City also held an EIR scoping meeting as part of the regularly scheduled Planning Commission meeting on February 9, 2022. No members of the public provided verbal comments at the scoping hearing, but several Planning Commissioners provided verbal comments.

The Draft EIR was made available for public review on August 30, 2022. The Notice of Availability of a Draft EIR was posted with the County Clerk, filed with the State Clearinghouse for distribution to state agencies, published in a local newspaper, and mailed to local agencies and interested organizations. A Notice of Completion was also filed with the State Clearinghouse. The Draft EIR and an announcement of its availability were posted electronically on the City's website. The Draft EIR comment period closed on October 17, 2022. During the comment period, the City Planning Commission held a hearing to receive comments on the Draft EIR on September 7, 2022. The City received 16 comment letters (including emails) on the Draft EIR during the public comment period.

On May 6, 2026, a Draft Addendum was presented to the Planning Commission at one of its regularly-scheduled meetings. The Draft Addendum was posted electronically on the City’s website. For the May 6, 2026 meeting, a public hearing notice was published in the Berkeley Voice and posted in three public places pursuant to California Government Code Section 65090 on April 15 and April 22nd 2026 for the public hearing held on May 6, 2026. On December 1, 2026, the Final Addendum was presented to City Council. It was posted electronically on the City’s website. For the December 1, 2026 City Council meeting, public hearing notice was published in the Berkeley Voice, posted at each street frontage adjacent to properties proposed for rezoning, and mailed to all property owners, tenants, and residents within properties proposed to be rezoned pursuant to California Government Code Section 65090 and BMC Section 23.404.040.

The Addendum prepared by the City analyzed the potential for an additional 4,399 new units attributable to the Corridors Zoning Update for a total of 4,677 new units in the Project area, and determined that the Project would not have new or substantially more severe significant environmental impacts than those analyzed and disclosed in the HEU EIR.

SECTION 4: FINDINGS

The Berkeley Corridors Zoning Update is consistent with and within the scope of the project analyzed in the Housing Element Update Environmental Impact Report (“HEU EIR”), with sites along the three corridors identified in the HEU sites inventory. The “project description” for the HEU EIR states “sites identified in the HEU sites inventory analysis are generally located in areas near major transportation corridors and existing residential and commercial development” (Draft EIR at 2-8), and parcels included in the EIR sites inventory “are located throughout Berkeley, but mostly along existing commercial corridors.” (Draft EIR at 3-2). Further, the Corridors Zoning Update implements the HEU’s Program 27, which provides, “The City will update zoning map and development standards to accommodate housing capacity and growth on transit and commercial corridors, particularly in the highest resource and higher income neighborhoods pursuant to the Affirmatively Furthering Fair Housing requirement. These updates will increase allowed densities and/or development capacity with the goal of achieving consistency among all transit and commercial corridors, especially between formerly red-lined areas and higher-resource areas of Solano Avenue, north Shattuck Avenue, and College Avenue.”

The HEU EIR examined the Berkeley Corridors Zoning Update at a sufficient level of detail to enable those effects to be mitigated or avoided by site-specific revisions, the imposition of conditions, or by other means in connection with the approval of the later project.

The Berkeley Corridors Zoning Update is consistent with applicable local land use plans and zoning of the city, county, or city and county in which the later project would be located.

No substantial changes are proposed in the project which will require major revisions of the HEU EIR due to the involvement of new significant environmental effects or a substantial increase in the severity of previously identified significant effect.

No substantial changes have occurred with respect to the circumstances under which the project is undertaken which will require major revisions of the previous EIR due to the involvement of new significant environmental effects or a substantial increase in the severity of previously identified significant effects. The HEU EIR was certified relatively recently, on November 30, 2022..

No new information of substantial importance, which was not known and could not have been known with the exercise of reasonable diligence at the time the HEU EIR was certified as complete, has been presented showing any of the following:

(A) The project will have one or more significant effects not discussed in the previous EIR or negative declaration;

(B) Significant effects previously examined will be substantially more severe than shown in the previous EIR;

(C) Mitigation measures or alternatives previously found not to be feasible would in fact be feasible and would substantially reduce one or more significant effects of the project, but the project proponents decline to adopt the mitigation measure or alternative; or

(D) Mitigation measures or alternatives which are considerably different from those analyzed in the previous EIR would substantially reduce one or more significant effects on the environment, but the project /proponents decline to adopt the mitigation measure or alternative.

The mitigation measures adopted for the HEU shall also apply and be required as a condition of approving projects pursuant to the Berkeley Corridors Zoning Update.

The HEU EIR concluded that the HEU would have the following significant and unavoidable impacts: historical resources, construction noise, wildfire, and cumulative cultural resources, cumulative construction noise, and cumulative wildfire impacts. The Berkeley Corridors Zoning Update would share these significant and unavoidable impacts, with the exception of wildfire and cumulative wildfire impacts, which are not relevant to the Corridors Zoning Update because, unlike the HEU, it does not include parcels located in the City of Berkeley's Very High Fire Hazard Zones.

Pursuant to CEQA Guidelines Section 15168(c), the City prepared an Addendum to the Housing Element EIR (Attachment 1) which demonstrated that the proposed project is consistent with the project description, including the description of Program 27, analyzed in the 2023 program EIR, and that potential impacts associated with the proposed project would be consistent with potential impacts characterized in and mitigation measures developed for the 2023 EIR. Substantive revisions to the 2023 EIR are not necessary because no new significant impacts or impacts of substantially greater severity than previously described would occur as a result of the proposed project. Therefore, the following determinations are applicable:

- No further evaluation of environmental impacts is required for the proposed project
- No Subsequent EIR or negative declaration is necessary per CEQA Guidelines Section 15162
- This report is the appropriate level of environmental analysis and documentation for the proposed project in accordance with CEQA Guidelines Section 15168(c).

SECTION 6: STATEMENT OF OVERRIDING CONSIDERATIONS

As set forth above, the City has found that the proposed project will result in project and cumulative significant adverse environmental impacts related to historical resources and construction noise that cannot be avoided following adoption, incorporation into the proposed project, and implementation of mitigation measures described in the EIR. In addition, there are no feasible project alternatives that would mitigate or avoid all of the proposed project's significant environmental impacts. CEQA Guidelines §15093(b) provides that when the decision of the public agency results in the occurrence of significant impacts that are not avoided or substantially lessened, the agency must state in writing the reasons to support its actions. See also Public Resources Code Section 21081(b). Having balanced the economic, legal, social, technological or other benefits of the proposed project, including region-wide or statewide environmental benefits, against its significant and unavoidable environmental impacts, the City finds that the proposed project benefits outweigh its unavoidable adverse environmental effects, and that the adverse environmental effects are therefore acceptable.

The following statement identifies the reasons why, in the City's judgment, specific benefits of the proposed project outweigh the significant and unavoidable effects. The substantial evidence supporting the benefits of the project can be found in the preceding sections of these Findings, in the Project itself, and in the record of proceedings as defined in Section 9, below. The City further finds that each of the project benefits discussed below is a separate and independent basis for these findings. The reasons set forth below are based on the Final EIR and other information in the administrative record.

The City further finds that these significant unavoidable impacts are outweighed by the benefits of the proposed project, each of which, independently of the others, constitutes overriding consideration warranting approval of the proposed project. Those benefits, and additional considerations related to this finding, are as follows:

- The proposed project will ensure that the City of Berkeley meets its State-mandated RHNA requirements, including the required buffer to comply with the State Housing Element Law.
- The proposed project will encourage affordable housing, which is desired by the community and will contribute toward alleviating a shortage of housing in Berkeley and the region.
- The proposed project will encourage development of a variety of types of housing at a range of income levels.
- The proposed project will encourage the development of housing with access to transit, jobs, services, and community benefits in a manner that distributes affordable and special needs housing, including in in high resource neighborhoods, and affirmatively furthers fair housing.

On balance, the City finds that there are specific economic, legal, social, technological, or other benefits of the project serves to override and outweigh the significant unavoidable effects identified in the Final EIR. Therefore, pursuant to *CEQA Guidelines* Section 15093(b), the City finds that these significant adverse environmental effects are considered acceptable.

SECTION 7: INCORPORATION BY REFERENCE

These findings incorporate the text of the Final Environmental Impact Report for the City of Berkeley 2023-2031 Housing Element Update (SCH#2022010331) by reference and in its entirety including the MMRP and CEQA Findings and Statement of Overriding Considerations, as well as Resolution 70,669-N.S. (Jan. 18, 2023), which certified the EIR and adopted its MMRP and CEQA Findings and Statement of Overriding Considerations. Without limitation, this incorporation is intended to elaborate on the scope and nature of mitigation measures, the basis for determining the significance of impacts, the comparative analysis of alternatives, the determination of the environmentally superior alternative, and the reasons for approving the Project in spite of the potential for associated significant and unavoidable adverse impacts.

SECTION 8: RECIRCULATION NOT REQUIRED

The project would not result in new or substantially more severed significant impacts than disclosed previously

in the Draft EIR. Therefore, recirculation of the EIR is not required.

SECTION 9: RECORD OF PROCEEDINGS

Various documents and other materials related to the project constitute the record of proceedings upon which the City bases its findings and decisions contained herein. Those documents and materials are located in the offices of the custodian for the documents and materials, which is the City of Berkeley Department of Planning and Development, 1947 Center Street, 2nd floor, Berkeley, CA 94704.

SECTION 10: CEQA FINDINGS

A. This section incorporates by reference the CEQA Findings and Statement of Overriding Considerations, which provide in part:

There are eight mitigations identified in the MMRP that address impacts identified in the EIR (Finding 1): three pertaining to air quality, two pertaining to cultural resources, one pertaining to geology, one pertaining to Tribal Cultural Resources and one pertaining to Wildfire.

There are no changes or mitigations to lessen impacts that are the responsibility of another agency (Finding 2).

After all mitigations are adopted, there remain significant and unavoidable impacts related to construction noise, cultural resources and wildfire (Finding 3). CEQA Guidelines §15093(b) provides that when the decision of the public agency results in the occurrence of significant impacts that are not avoided or substantially lessened, the agency must state in writing the reasons to support its actions. Therefore in order to certify the EIR and proceed with the project, the City Council will need to make a Statement of Overriding Consideration, a formal statement by the lead agency that, having balanced the economic, legal, social, technological or other benefits of the proposed project, including region-wide or statewide environmental benefits, against its significant and unavoidable environmental impacts, the City finds that the proposed project benefits outweigh its unavoidable adverse environmental effects. The Statement of Overriding Considerations includes the following:

- The proposed project will ensure that the City of Berkeley meets its State mandated RHNA requirements, including the required buffer to comply with the State Housing Element Law.
- The proposed project will encourage affordable housing, which is desired by the community and will contribute toward alleviating a shortage of housing in Berkeley and the region.
- The proposed project will encourage development of a variety of types of housing at a range of income levels.
- The proposed project will encourage the development of housing with access to transit, jobs, services, and community benefits in a manner that distributes affordable and special needs housing, including in in high resource neighborhoods, and affirmatively furthers fair housing.

Because the Corridors Zoning Update is a component of the HEU, it shares these impacts (with the exception of wildfire impacts, as discussed above).

B. Based on the foregoing Findings and the information contained in the record, the City has made one or more of the following Findings with respect to each of the significant effects of the project:

1. Changes or alterations have been required in, or incorporated into, the project that avoid or substantially lessen the significant environmental effects identified in the Final EIR.

2. Those changes or alterations are within the responsibility and jurisdiction of another public agency and have been, or can and should be, adopted by that other public agency.

3. Specific economic, legal, social, technological, or other considerations, make infeasible the mitigation

measures or alternatives identified in the Final EIR that would otherwise avoid or substantially lessen the identified significant environmental effects of the project.

C. Based on the foregoing Findings and the information contained in the record, the City determines that:

1. All significant effects on the environment due to the approval of the Project have been eliminated or substantially lessened where feasible.

2. Any remaining significant effects on the environment found to be unavoidable are acceptable due to the factors described in the Statement of Overriding Considerations in Section 6, above.

Attachment 1: *Berkeley Corridors Zoning Update Project, Addendum to the 2023-2031 Housing Element Update Final Environmental Impact Report (SCH#2022010331), October 2026.*



Berkeley Corridors Zoning Update Project

Addendum to the 2023-2031 Housing Element Update Final Environmental Impact Report

SCH #2022010331

prepared by

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RINCON CONSULTANTS

Table of Contents

1 Introduction 1
2 Background 3
2.1 2023-2031 Housing Element Update Project Description 3
2.2 2023-2031 Housing Element Update EIR 4
2.3 Southside Zoning Implementation Program EIR Addendum 5
3 Project Description 6
3.1 Project Location and Existing Conditions 6
3.2 Proposed Project Characteristics 6
3.3 Proposed Project Buildout Assumptions Compared to 2023 EIR 18
4 Conclusion Regarding Preparation of an Addendum to the 2023 EIR 19
5 Environmental Impacts of the Proposed Project in Relation to the HEU 20
5.1 Aesthetics 20
5.2 Air Quality 22
5.3 Biological Resources 27
5.4 Cultural Resources 28
5.5 Energy 33
5.6 Geology and Soils 35
5.7 Greenhouse Gas Emissions 45
5.8 Hazards and Hazardous Materials 49
5.9 Hydrology and Water Quality 58
5.10 Land Use and Planning 60
5.11 Noise 64
5.12 Population and Housing 70
5.13 Public Services and Recreation 71
5.14 Transportation 74
5.15 Tribal Cultural Resources 76
5.16 Utilities and Service Systems 78
5.17 Wildfire 80
6 Cumulative Impacts 83
6.1 Impacts Identified in the 2023 EIR 83
6.2 Impacts of the Proposed Project 84
6.3 Effects and Mitigation Measures 85
6.4 Conclusion 85
7 Conclusion 86
8 References and Preparers 87
8.1 References 87
8.2 List of Preparers 88

Tables

Table 1 2023-2031 HEU EIR Projected Buildout 4
Table 2 Existing and Proposed Building Height and Density 15
Table 3 Summary of Development Assumptions 16
Table 4 Increase in Population Compared to VMT Under Project 23
Table 5 Summary of Development Assumptions 29
Table 6 Operational GHG Emissions 48
Table 7 Project Consistency with Plan Bay Area 2050 61
Table 8 Project Consistency with Relevant General Plan Goals and Policies 61
Table 9 Vehicle Miles Traveled Summary 68
Table 10 VMT Results Summary 76

Figures

Figure 1 Regional Location 7
Figure 2 Project Location 8
Figure 3 Solano Avenue Corridor Location 9
Figure 4 North Shattuck Corridor Location 10
Figure 5 College Avenue Corridor Location 11
Figure 6 Solano Avenue Corridor Existing Zoning 12
Figure 7 North Shattuck Corridor Existing Zoning 13
Figure 8 College Avenue Corridor Existing Zoning 14
Figure 9 Solano Avenue Corridor Geologic Hazards 37
Figure 10 North Shattuck Avenue Corridor Geologic Hazards 38
Figure 11 College Avenue Corridor Geologic Hazards 39
Figure 12 Geologic Units and Paleontological Sensitivity Underlying the Solano Avenue Corridor 41
Figure 13 Geologic Units and Paleontological Sensitivity Underlying the North Shattuck Avenue Corridor 42
Figure 14 Geologic Units and Paleontological Sensitivity Underlying the College Avenue Corridor 43
Figure 15 Solano Avenue Corridor Hazardous Sites 52
Figure 16 North Shattuck Avenue Corridor Hazardous Sites 53
Figure 17 College Avenue Corridor Hazardous Sites 54

Appendices

Appendix A Buildout Assumptions
Appendix B State Density Bonus Analysis
Appendix C Vehicle Miles Traveled Impact Assessment Memorandum
Appendix D Greenhouse Gas Emissions Modeling Analysis for the San Pablo Specific Plan and 2023-2031 Housing Element
Appendix E Greenhouse Gas Emissions Modeling Results

1 Introduction

This document is an Addendum to the *2023-2031 Housing Element Update Environmental Impact Report* (EIR) (State Clearinghouse #2022010331), which was prepared for the City of Berkeley's 2023-2031 Housing Element Update ("HEU"), as amended by the Southside Zoning Implementation Project Addendum to the 2023 EIR (herein collectively referred to as the "2023 EIR"). The *2023-2031 Housing Element Update EIR* was certified, the Mitigation Monitoring and Reporting Program was adopted, and the HEU was approved by the City of Berkeley ("City") on January 18, 2023. The Southside Zoning Implementation Project Addendum to the *2023-2031 Housing Element Update EIR* was adopted by the City in November 2023. This Addendum demonstrates that the proposed Berkeley Corridors Zoning Update Project (hereinafter referred to as "the project" or "proposed project") was analyzed as HEU Program 27 in the 2023 EIR. The Addendum further demonstrates that the project proposes to modify HEU Program 27, but these modifications do not result in the need to prepare a subsequent or supplemental EIR. Therefore, pursuant to the California Environmental Quality Act (CEQA) Guidelines Section 15168, no further environmental review is required. Guidelines § 15168(c)(2).

Pursuant to CEQA Guidelines Section 15150, an addendum "may incorporate by reference all or portions of another document which is a matter of public record or is generally available to the public." Accordingly, the Final 2023 EIR is incorporated by reference herein. The Final 2023 EIR is available for public review at:

City of Berkeley
Land Use Planning Division
1947 Center Street, Second Floor
Berkeley, California 94704

The document is also available on the City's website: https://berkeleyca.gov/construction-development/land-use-development/general-plan-and-area-plans/housing-element-update.

The proposed project would involve changes to the approved HEU that was analyzed in the 2023 EIR in order to implement zoning text and map amendments, and associated General Plan text and map amendments, for three corridors: Solano Avenue, North Shattuck, and College Avenue, as called for in HEU Program 27, to increase density, height, and bulk to allow for mixed-use and residential development. The proposed project differs from HEU Program 27 by facilitating the development of an additional 4,399 units in the Solano Avenue, North Shattuck Avenue, and College Avenue Corridors, as well as a reduction in the amount of commercial uses by up to 110,788 square feet. Therefore, some modifications and additions are necessary to the 2023 EIR but, as demonstrated in this Addendum, no subsequent or supplemental EIR is required.

Pursuant to CEQA Guidelines Section 15164[1], a lead agency shall prepare an addendum to a previously certified EIR if some changes or additions are necessary, but none of the conditions described in Section 15612 calling for preparation of a subsequent EIR have occurred. Under CEQA Guidelines Section 15162 (a), where an EIR has been certified for a project, no subsequent EIR shall be prepared for the project unless the lead agency determines, on the basis of substantial evidence in light of the whole record, that substantial changes are proposed in the project, substantial changes occur with respect to the circumstances under which the project is undertaken, or there is new information of substantial importance, any of which require major revisions of the previous EIR due to one or more new significant impacts not discussed in the previous EIR, or a substantial increase in the severity of previously identified significant impacts.

Regarding preparation of an addendum to an EIR, *CEQA Guidelines* Section 15164 states that:

[1] The CEQA Guidelines are found at California Code of Regulation, Title 14, Section 15000 *et seq*.

- The lead agency shall prepare an addendum to a previously certified EIR if some changes or additions are necessary, but none of the conditions described in Section 15162 calling for preparation of a subsequent EIR have occurred (Section 15164(a)).
- An addendum need not be circulated for public review but can be included in or attached to the final EIR (Section 15164(c)).
- The decision-making body shall consider the addendum with the final EIR prior to making a decision on the project (Section 15164(d)).
- A brief explanation of the decision not to prepare a subsequent EIR pursuant to Section 15162 should be included in an addendum to an EIR, the lead agency's findings on the project, or elsewhere in the record. The explanation must be supported by substantial evidence (Section 15164(e))

This Addendum has been prepared in accordance with CEQA (California Public Resources Code Section 21000, *et seq.*) and the *CEQA Guidelines*. It describes the changes in the HEU that constitute the proposed project and compares the impacts of those changes to the impacts of the HEU identified in the 2023 EIR. The analysis in this Addendum concludes that the proposed project does not require preparation of a subsequent EIR.

2 Background

This section provides an overview of the 2023-2031 Housing Element and the analysis of the HEU in the 2023 EIR to provide context for this Addendum.

2.1 2023-2031 Housing Element Update Project Description

The 2023-2031 HEU project amended the City's General Plan by replacing the 5th Cycle Housing Element with the 2023-2031 6th Cycle Housing Element and amended other portions of the City's General Plan as needed for consistency and HEU implementation. The City's Regional Housing Needs Allocation (RHNA) for the 2023-2031 planning period was 8,934 units, distributed among four income categories (very low, low, moderate, and above moderate). In order to meet the RHNA, the City assessed the capacity to provide sites to meet the RHNA in three categories: Likely Sites, Pipeline Sites, and Opportunity Sites. The Likely Sites, Pipeline Sites and Opportunity Sites together constituted the 2023 EIR Sites Inventory, providing for a total of 15,153 units, which includes 800 accessory dwelling units (ADUs).[2]

The City determined, based on the sites inventory, that rezoning was not needed to meet the RHNA. However, based on development activity the City determined that zoning alone would not deliver the level of deed-restricted affordable housing and economic and geographic diversity that the HEU aimed to achieve. Therefore, implementation programs and zoning policies were included in the HEU to encourage additional housing, particularly affordable housing that supports a diversity of income levels and household types. The implementation programs included in the HEU include a program to promote middle- and moderate-income housing and a program to facilitate additional housing development in the three corridors.

Specifically, Program 27 provides that the City "will update zoning map and development standards to accommodate housing capacity and growth on transit and commercial corridors, particularly in the highest resource and higher income neighborhoods pursuant to the Affirmatively Furthering Fair Housing requirement. These updates will increase allowed densities and/or development capacity with the goal of achieving consistency among all transit and commercial corridors, especially between formerly red-lined areas and higher-resource areas of Solano Avenue, north Shattuck Avenue, and College Avenue." HEU at 143. The HEU further estimates that these updates will "increase new housing opportunities by at least 2000 units on commercial and transit corridors, particularly in the highest resource and higher income neighborhoods." HEU at 144.

2023-2031 HEU EIR Buildout

Table 1 summarizes the buildout analyzed in the 2023-2031 HEU EIR, which is based on the 2023-2031 HEU EIR Sites Inventory of 15,153 units, an additional 1,200 units at the Ashby and North Berkeley Bay Area Rapid Transit (BART) stations, and projections for implementation programs - Middle Housing Rezoning and the Southside Zoning Modification Project - totaling 2,745 units. Overall, the 2023-2031 HEU EIR assumed that implementation of the HEU zoning changes and other programs could facilitate up to 19,098 additional units in Berkeley (City of Berkeley 2023a).

[2] Likely Sites included 4,685 units with an estimated 800 ADUs; Pipeline Sites included 2,415 units; and Opportunity Sites included 8,053 units.

Table 1 2023-2031 HEU EIR Projected Buildout

	Total New Units
EIR Sites Inventory	
Likely Sites	4,685
Pipeline Sites	2,415
Opportunity Sites	8,053
Subtotal EIR Sites Inventory	**15,153**
Implementation Programs	
Middle Housing Rezoning	1,745
Southside Zoning Modification Project	1,000
Ashby and North Berkeley BART Stations	1,200
Subtotal Implementation Programs	**3,945**
Overall EIR Growth Assumption	**19,098**

Source: City of Berkeley 2023a

2.2 2023-2031 Housing Element Update EIR

The 2023-2031 HEU EIR evaluated potential environmental consequences associated with the HEU for all of the environmental issue areas identified in the *CEQA Guidelines* Appendix G checklist. The 2023 EIR found the following impacts to be less than significant without mitigation: aesthetics, biological resources, energy, greenhouse gas emissions, hazards and hazardous materials, hydrology and water quality, land use and planning, population and housing, public services and recreation, transportation, and utilities and service systems.

The 2023-2031 HEU EIR found that the following mitigation measures are required to reduce impacts related to air quality, paleontological resources, and tribal cultural resources: Mitigation Measure AQ-1 (Construction Emissions Reduction Measures), Mitigation Measure AQ-2 (Construction Health Risk Assessment), and Mitigation Measure AQ-3 (TAC Exposure Reduction Building Measures) would reduce air quality impacts to less than significant levels. Mitigation Measure GEO-1 (Protection of Paleontological Resources) would reduce geology and soils impacts to less than significant levels. Mitigation Measure TCR-1 (Tribal Cultural Monitoring) would reduce tribal cultural resources impacts to less than significant levels.

The 2023-2031 HEU EIR found that the HEU would have significant and unavoidable impacts related to cultural resources. Mitigation Measure CUL-1 (Historic Context Statement, Cultural Resources Survey and Designations) and Mitigation Measure CUL-2 (Historic Resources Discretionary Review) would reduce cultural resources impacts to the maximum extent feasible. However, even with implementation of mitigation measures, existing historical resources and historical resources eligible for listing could still be materially impaired by future development that would be carried out under the HEU. Therefore, cultural resources impacts would remain significant and unavoidable.

The 2023-2031 HEU EIR also found that the HEU would have significant and unavoidable impacts related to noise. Although future development facilitated by the HEU would be required to comply with the City's Standard Conditions of Approval, which would reduce construction noise impacts to the extent feasible, larger developments involving lengthier construction durations with the use of larger, heavy-duty equipment could still exceed the City's standards for stationary equipment in both multi-family residential and commercial zones. Furthermore, construction noise levels could exceed the City's standards at multiple sites where the HEU would facilitate development in Berkeley. Therefore, construction noise impacts would remain significant and unavoidable.

The 2023-2031 HEU EIR also found that the HEU would result in significant and unavoidable impacts related to wildfire. Adherence to City regulations and procedures and implementation of Mitigation Measure W-1 (Undergrounding of Power Drops in the VHFHSZs) would reduce the risk of fire during construction, but not to a less-than-significant level. That is because, for some development projects, even with implementation of wildfire prevention measures, impacts may result from the potential for unusual site-specific or road conditions, project characteristics, and the general ongoing fire risk in Berkeley Hills. Therefore, wildfire impacts would remain significant and unavoidable.

2.3 Southside Zoning Implementation Program EIR Addendum

The Southside Zoning Implementation Program Addendum was prepared in August 2023 as an addendum to the 2023-2031 HEU EIR. The HEU intended to increase housing capacity and production using zoning modifications and local density bonus to better meet student housing demand in the three corridors 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. The 2023-2031 HEU EIR assumed rezoning would allow for 1,000 more units in the portions of the Multiple-Family Residential (R-3), Residential High Density Subarea (R-S), Residential Mixed Use Subarea (R-SMU), and Telegraph Avenue Commercial (C-T) districts within the Southside Plan Area for the 2023-2031 period.

The Southside Zoning Implementation Program included expansion of the R-SMU district in the area four blocks west of Telegraph Avenue, which would change from R-S to R-SMU, and three blocks east of Telegraph Avenue, which would change from R-3 and R-S to R-SMU. The Southside Zoning Implementation Program also included expansion of the R-S district into the areas currently zoned R-3 in between Haste Street, Dwight Way, and Fulton Street. No zoning boundary changes were proposed for the C-T district or within the Hillside Overlay zone.

The Southside Zoning Implementation Program could result in up to 2,652 new units on 65 sites in the three corridors. Since the HEU assumed a buildout of 1,000 units in the three corridors, the Southside Zoning Implementation Program included an additional 1,652 units compared to the HEU for a total of 20,750 units associated with implementation of the HEU as analyzed in the 2023 EIR.

3 Project Description

3.1 Project Location and Existing Conditions

The project location spans three roadway corridors and encompasses approximately 28.6 acres in the City of Berkeley, Alameda County, California. The three corridors are referred to as Solano Avenue, North Shattuck, and College Avenue. Figure 1 shows the regional location and Figure 2 shows the project boundaries for the three corridors.

The Solano Avenue corridor, which is shown on Figure 3, includes properties along Solano Avenue between approximately The Alameda and the city limits. Solano Avenue runs east-west, and land uses on either side of Solano Avenue include retail, office, commercial, residential, and mixed uses. Residential uses are also located one block to the north and south. The North Shattuck corridor, which is shown on Figure 4, includes properties along Shattuck Avenue between just north of Rose Street and Virginia Street. Shattuck Avenue runs north-south and is bordered by retail, office, commercial and mixed uses with residential uses to the east and west. The College Avenue Corridor, as shown on Figure 5, includes properties along College Avenue in the Elmwood district, generally between Russell Street and Webster Street. College Avenue runs north-south and similarly is bordered by retail, office, commercial, and mixed uses, with residential uses located further to the east and west.

The City's Zoning Ordinance and associated Zoning Map identify specific zoning districts in Berkeley, and development standards that apply to each district. The zoning districts that currently exist in the Solano Avenue corridor include C-SO (Solano Avenue Commercial District) and is surrounded by R-1 and R-1H (Single-Family Residential Districts) (Figure 6); the zoning districts that currently exist in the North Shattuck corridor include C-NS (North Shattuck Commercial District), C-C (Corridor Commercial District), and is surrounded by R-2A (Restricted Two-Family Residential) (Figure 7); and the zoning districts that currently exist in the College Avenue corridor include C-E (Elmwood Commercial District), bordered by R-2A (Restricted Two-Family Residential) (Figure 8).

The proposed changes to the General Plan, Zoning, and Development Standards would only affect the C-SO, C-NS, and C-E zoning districts within these corridor areas.

3.2 Proposed Project Characteristics

The Solano Avenue, North Shattuck, and College Avenue corridors were identified as priority corridors by the Berkeley City Council and Program 27 of the City's HEU to address housing scarcity, promote fair housing, and overcome barriers to development. These corridors have strong access to transit, schools, and jobs, but have produced less housing than other areas of the city, particularly when compared to lower-income areas. The proposed project is designed to affirmatively further fair housing by encouraging residential development in these high resource areas. The proposed project would implement Program 27 of the HEU to:

- Expand housing opportunities in high-resource areas;
- Address historic exclusionary zoning patterns; and
- Promote equitable housing distribution while maintaining neighborhood character and supporting local businesses.

Figure 1 Regional Location

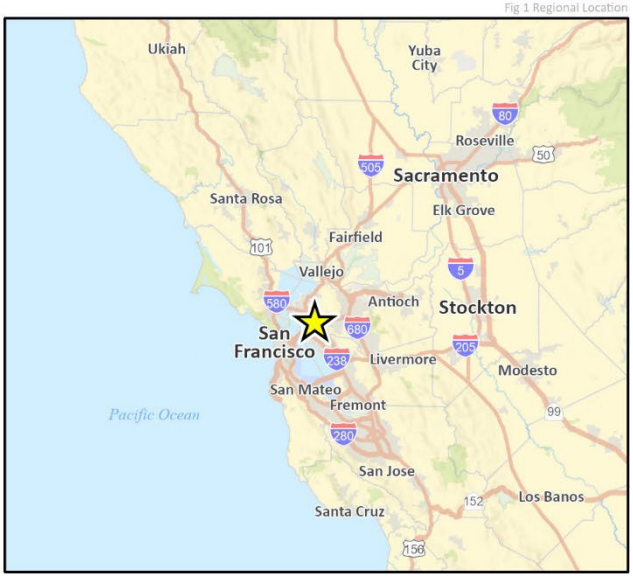


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24-15856 EPS
Fig 1 Regional Location

Project Location

N



City of Berkeley
Berkeley Corridors Zoning Update Project

Figure 2 Project Location

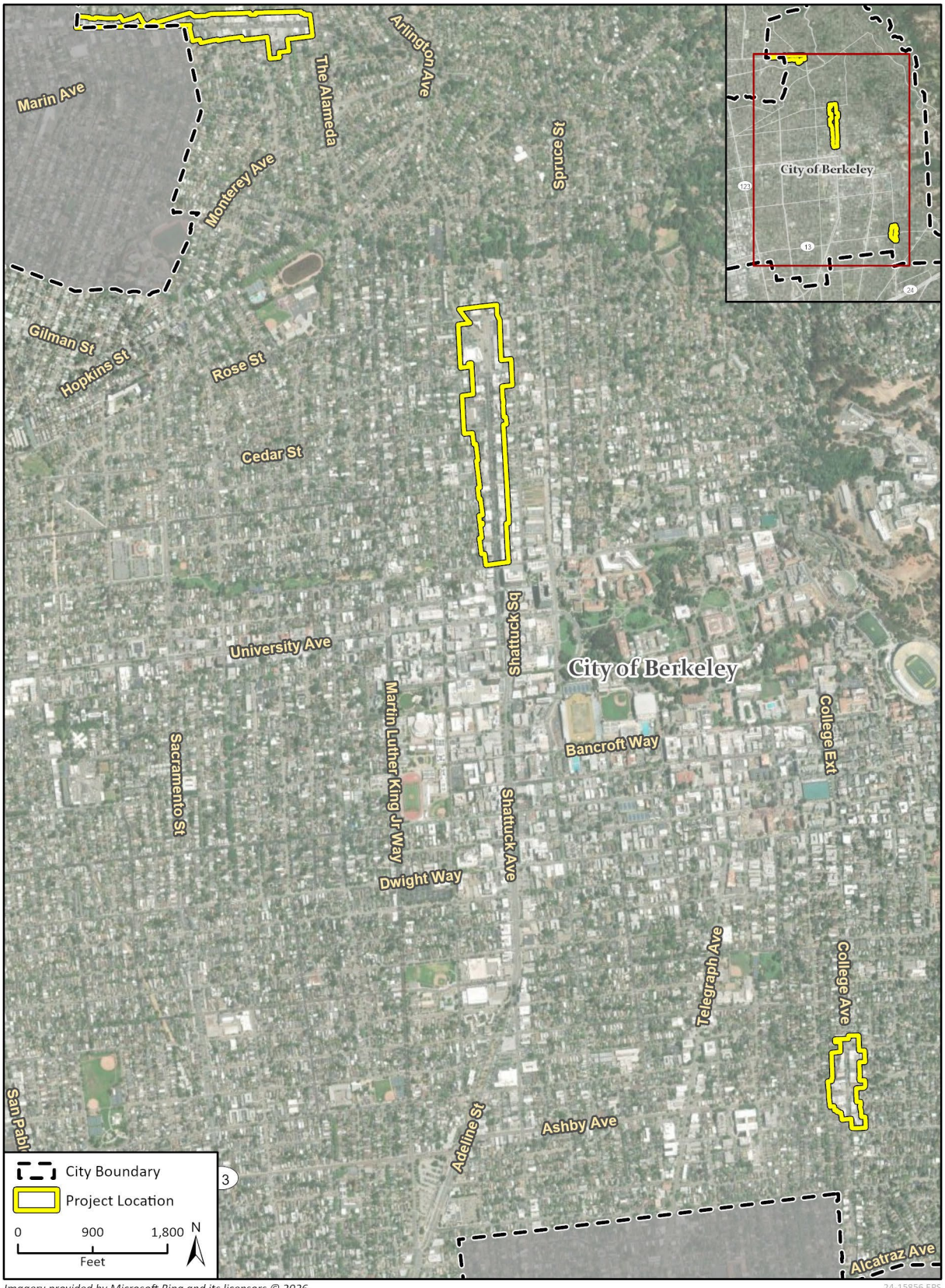
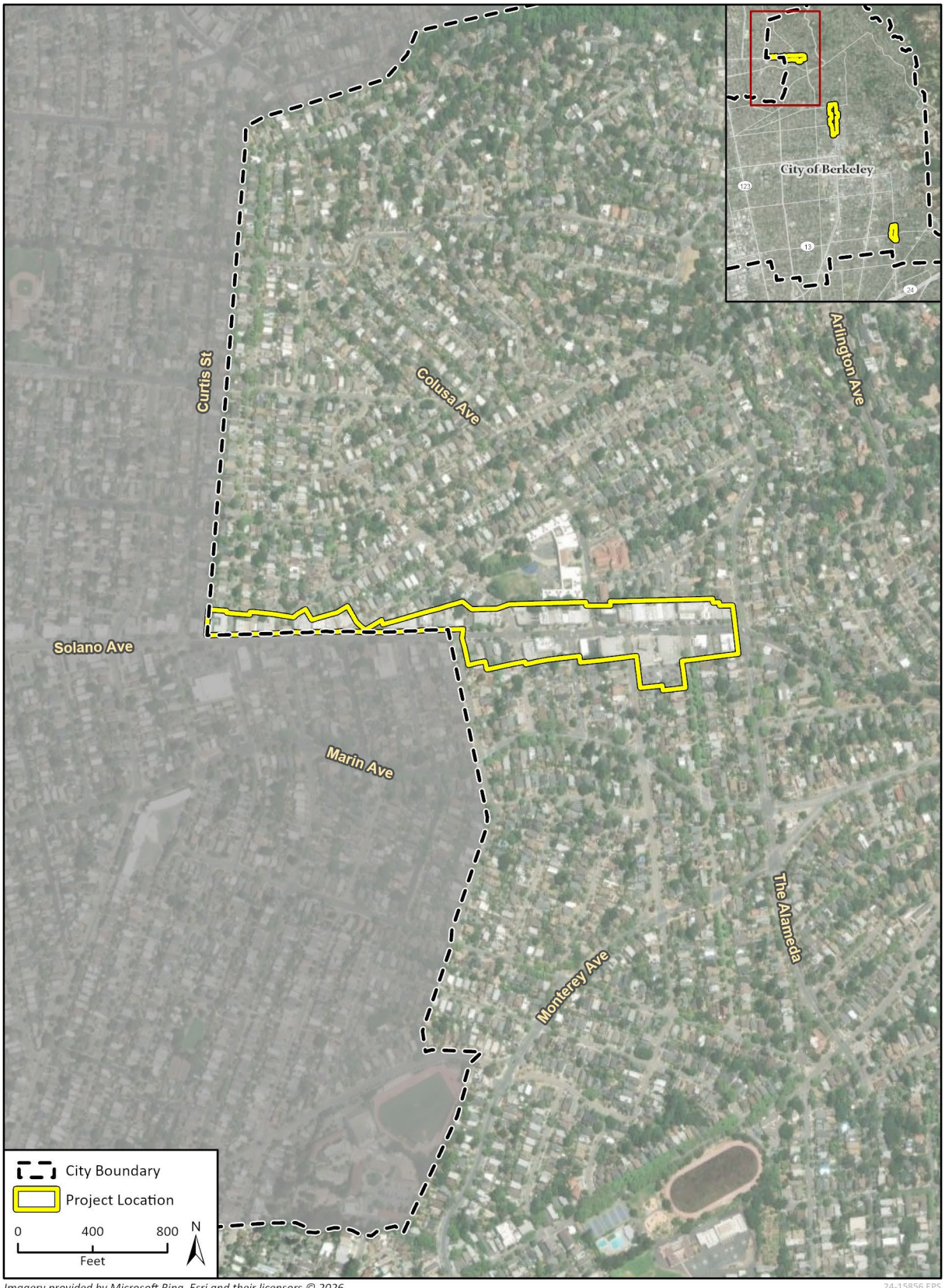


Figure 3 Solano Avenue Corridor Location



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24-15856 EPS
Fig 2 Project Location Map Series

Figure 4 North Shattuck Corridor Location



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24-15856 EPS
Fig 2 Project Location Map Series

Figure 5 College Avenue Corridor Location

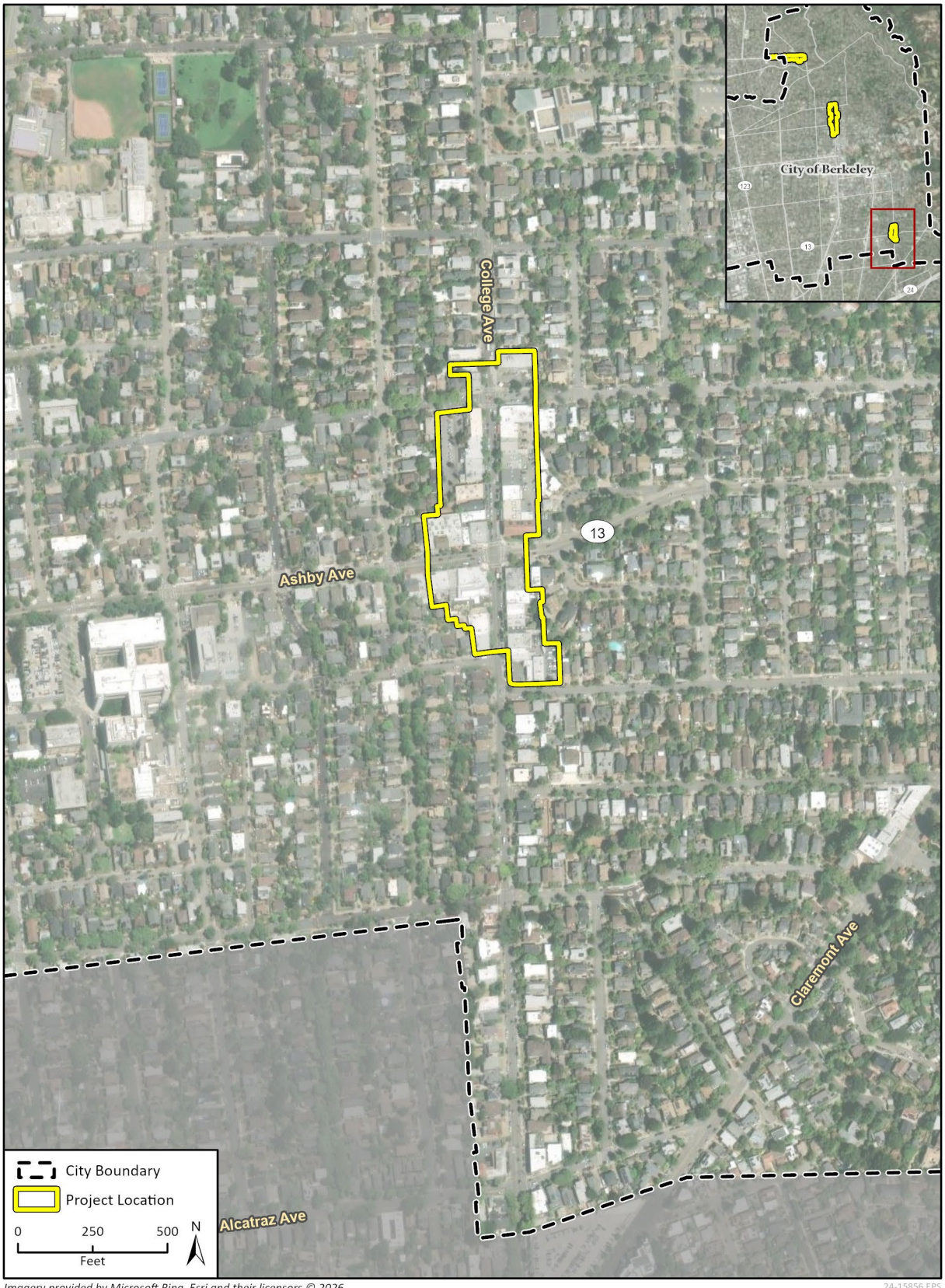
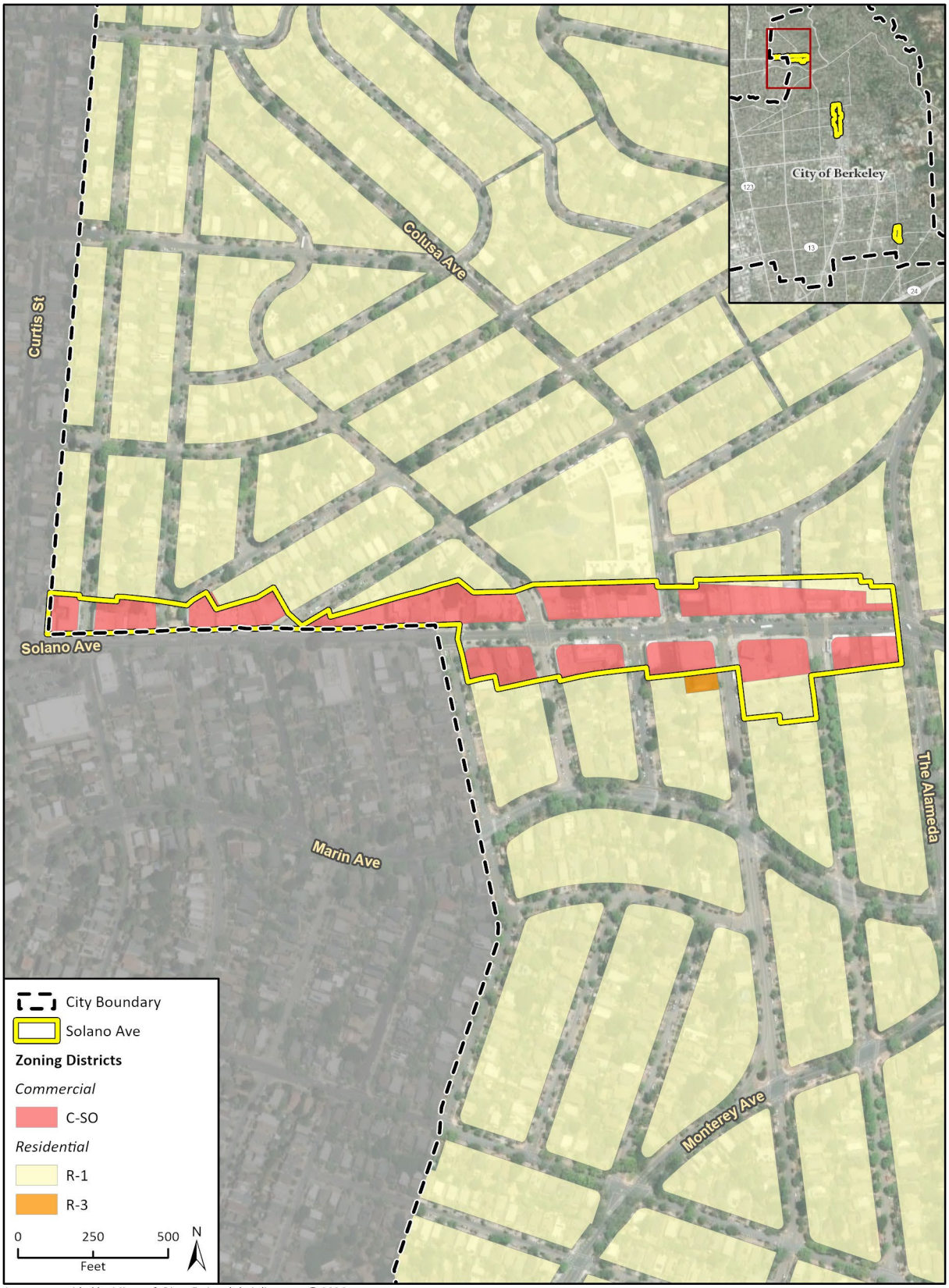


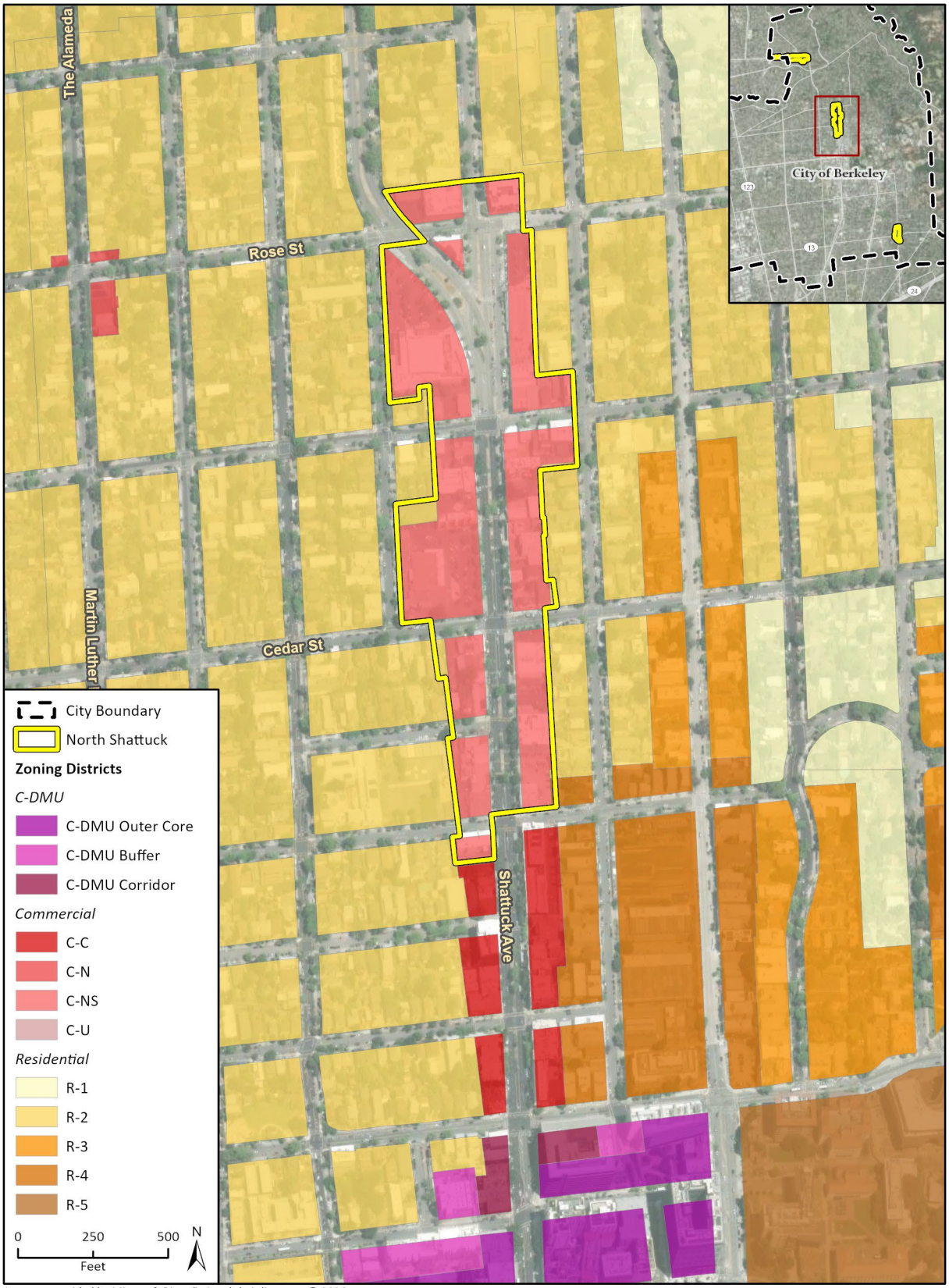
Figure 6 Solano Avenue Corridor Existing Zoning



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Additional data provided by City of Berkeley, 2025.

24-15856 EPS
Fig 3 Project Location with Zoning

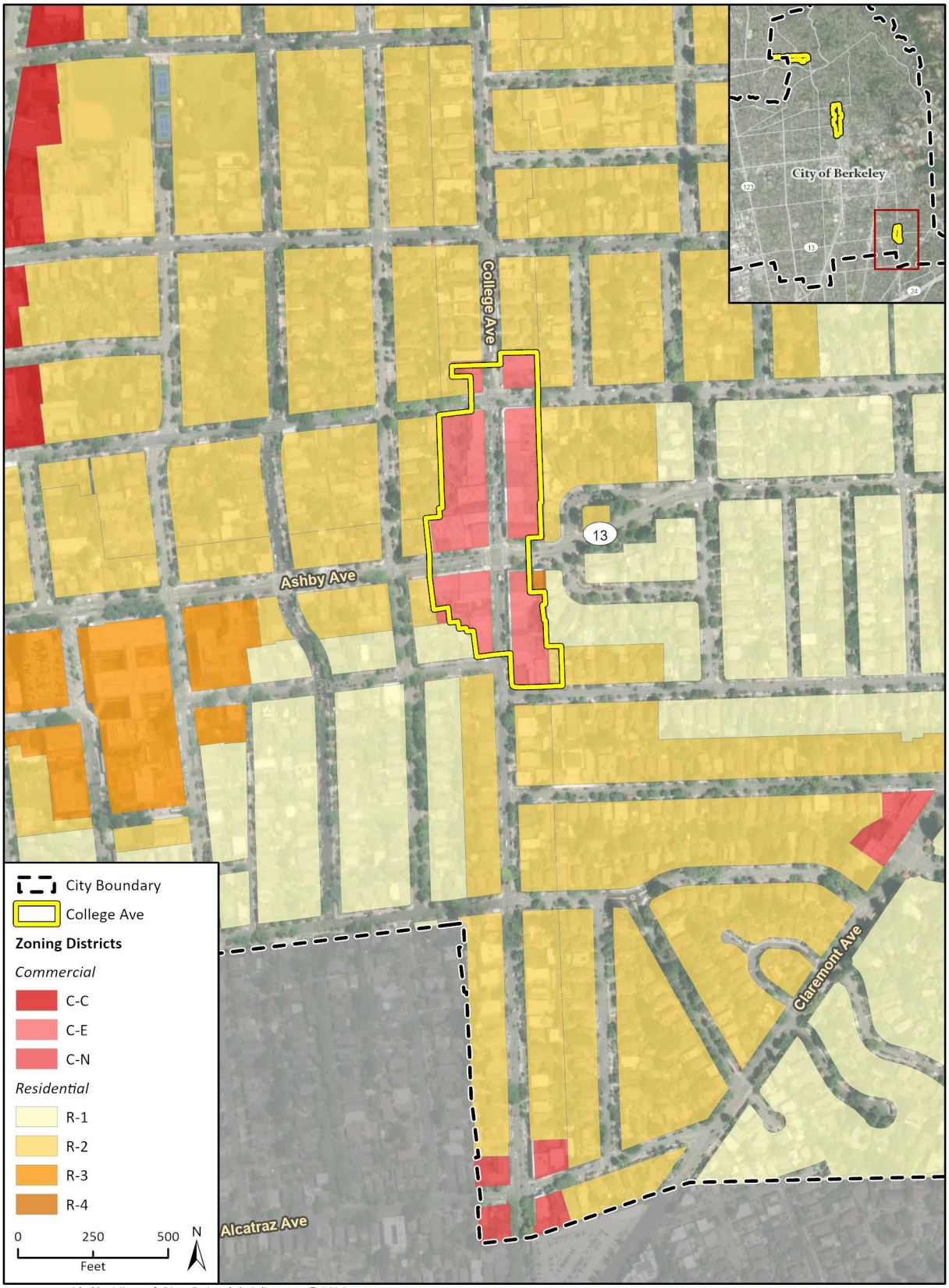
Figure 7 North Shattuck Corridor Existing Zoning



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Additional data provided by City of Berkeley, 2025.

24-15856 EPS
Fig 3 Project Location with Zoning

Figure 8 College Avenue Corridor Existing Zoning



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Additional data provided by City of Berkeley, 2025.

24-15856 EPS
Fig 3 Project Location with Zoning

The proposed project would change development standards for the C-SO, C-NS, and C-E zoning districts within the three corridors to increase allowed density and height to allow for mixed-use and residential development. Existing and proposed building heights and densities within the three corridors are summarized on Table 2. For the purposes of the CEQA document and as described in Appendix A, buildout under the proposed project is studied at up to 7 stories and 78 feet for each corridor, the maximum proposed height that is being considered, with additional units presumed to be developed through utilization of State Density Bonus Law, as described below. The final zoning may be less than the proposed project, but the maximum height included in the proposed development standards would not exceed 7 stories and 78 feet.

Table 2 Existing and Proposed Building Height and Density

Corridor	Existing Zoning	Proposed Project
Solano Avenue (C-SO)		
Maximum Base Building Height	2 stories; 28 ft	7 stories; 78 ft
Maximum FAR (non-residential)	2.0	2.0
Density (no maximum in current zoning code)	Estimated: 50-73 du/ac	Maximum: 165 du/ac
North Shattuck (C-NS)		
Maximum Base Building Height	3 stories; 35 ft	7 stories; 78 ft
Maximum FAR (non-residential)	1.0	1.0
Density (no maximum in current zoning code)	Estimated: 50-73 du/ac	Maximum: 165 du/ac
College Avenue (C-E)		
Maximum Base Building Height	2 stories; 28 ft	7 stories; 78 ft
Maximum FAR (non-residential)	0.8 Infill Lot; 1.0 Corner Lot	0.8 Infill Lot; 1.0 Corner Lot
Density (no maximum in current zoning code)	Estimated: 25-32 du/ac	Maximum: 165 du/ac

ft = feet; du = dwelling units; ac = acre

Development Assumptions

This analysis is based on the buildout assumptions as described in Appendix A. The total parcel area across the three corridors is approximately 28.6 acres. The area is already almost entirely built out; there are currently 282 residential units (including 110 planned residential units in the pipeline) and 656,902 square feet of commercial uses across the three corridors. The development assumptions that form the basis of this analysis are designed to be conservative and to overestimate the amount of redevelopment that is likely to occur to ensure that environmental review analyzes environmental impacts from all reasonably foreseeable development. The development assumptions take into account the redevelopment potential of parcels within the corridors and include a scenario where 100 percent of parcels with High and Modest Redevelopment Potential as defined in Appendix A are built out at densities that maximize density for mid-rise building types. The assumptions also consider the potential for high-rise building types for certain parcels. As described further below, these assumptions consider density bonuses available under the State Density Bonus Law. This scenario is not imminently likely to materialize but is being used to study a higher density scenario that may be possible under the proposed project (Appendix A).

Future residential projects under the proposed project may be eligible to utilize provisions of the State Density Bonus (California Government Code Sections 65915 – 65918). The State Density Bonus program encourages the development of on-site affordable housing, including up to a 50 percent increase in project densities for most projects, depending on the amount of affordable housing provided. Additional bonuses are possible up to 100 percent density bonus if additional affordable housing is provided. The State Density Bonus program also includes a package of incentives intended to help make the development of affordable and senior housing economically feasible. These include waivers and

concessions, such as reduced setbacks, increased height or modified open space and other requirements. Whether an individual project will utilize the State Density Bonus, or which aspects of State Density Bonus law an individual project would utilize, is difficult to predict.

Nonetheless, Appendix B provides an analysis of State Density Bonus trends and these trends informed the assumptions for this analysis regarding potential for future projects to utilize the State Density Bonus. Based on recent trends in Berkeley, and as discussed in Appendix B, this analysis assumes that most projects developed under the proposed project would reach no more than 8 stories when utilizing the State Density Bonus Law due to both recent development patterns in Berkeley and broader empirical research. The City's record of State Density Bonus Law projects over the past five years demonstrates a consistent tendency toward mid-rise construction, while cost analyses indicate that buildings exceeding 8 stories are often not economically feasible in districts with the seven-story base height limit included in the proposed project (Appendix B). As described in Appendix A, the CEQA buildout scenario assumes most projects would utilize a 50 percent density bonus to maximize mid-rise construction at 8 stories. The density at 8 stories assumes 1,000 gross square feet per unit and 1.5 times the maximum allowable density of 165 dwelling units per acre for a density of 247 dwelling units per acre. With a 100 percent density bonus, projects would be allowed up to 14 to 17 stories depending on site conditions. At this height, some high-rise projects may be feasible, particularly for larger sites that allow for more efficient buildings. The analysis assumes that sites greater than 12,000 square feet would utilize the 100 percent bonus up to 330 dwelling units per acre.

Based on projections of development potential in the corridors, it is estimated that the proposed project could facilitate the development of up to 4,677 net new residential units and reduce the amount of commercial uses by up to 110,788 square feet in the three corridors,[3] for a new total of 4,959 residential units and 546,114 square feet of commercial uses within the three corridors. Assumed redevelopment potential for the 16.1 acres of land likely to be redeveloped within the three corridors is summarized on Table 3 and further described in the following sections.

Table 3 Summary of Development Assumptions

	Residential			Commercial		
Corridor	Existing Residential (units)	Estimated Net New Residential with Proposed Project (units)	Total Residential with Project (units)	Existing Commercial (sf)	Estimated Net Reduction in Commercial with Proposed Project (sf)	Total Commercial with Project (sf)
Solano Avenue	91	1,667	1,758	188,278	(63,582)	124,696
North Shattuck	174	2,638	2,812	343,458	(35,737)	307,721
College Avenue	17	372	389	125,166	(11,468)	113,698
Total	**282**	**4,677**	**4,959**	**656,902**	**(110,788)**	**546,114**

sf = square feet, ( ) denotes subtraction

[3] The corridors include parcels developed with 100 percent commercial uses, such as the Andronico's grocery stores. The analysis assumes that potential redevelopment within the corridors would be mixed-use residential and commercial. Should the commercial sites redevelop as mixed-use residential, new developments would include less ground-floor commercial than what exists on-site currently. This is because the ground level would also need to accommodate parking, mechanical space, trash rooms, emergency egress, lobbies, and other amenities for the residential uses on the upper floors. Therefore, because the proposed project is anticipated to facilitate redevelopment of some commercial-only sites with mixed-use, overall, the amount of commercial space would decrease.

Solano Avenue

The Solano Avenue corridor encompasses approximately 9.9 acres over 69 parcels, with 91 existing residential units and 188,278 square feet of commercial uses. Based on the development assumptions in Appendix A, the proposed project could add up to an estimated 1,667 net new residential units at a density of 165 dwelling units per acre and reduce the amount of commercial uses by 63,582 square feet in the Solano Avenue corridor, resulting in a new total of 1,758 residential units and 124,696 square feet of commercial uses.

North Shattuck

The North Shattuck corridor encompasses approximately 14 acres over 50 parcels, with 174 residential units (including 110 planned residential units in the pipeline project located at 2109 Virginia Street), and 343,458 square feet of commercial uses. Based on the development assumptions in Appendix A, the proposed project could add up to an estimated 2,638 net new residential units at a density of 200 dwelling units per acre and reduce the amount of commercial uses by 35,737 square feet in the North Shattuck corridor, resulting in a new total of 2,812 residential units and 307,721 square feet of commercial uses.

College Avenue

The Elmwood Commercial District (C-E) on the College Avenue corridor encompasses approximately 4.7 acres over 34 parcels, with 17 existing residential units and 125,166 square feet of commercial uses. Based on the development assumptions in Appendix A, the proposed project could add up to an estimated 372 net new residential units at a density of 130 dwelling units per acre and reduce the amount of commercial uses by 11,468 square feet in the College Avenue corridor, resulting in a new total of 389 residential units and 113,698 square feet of commercial uses.

General Plan Amendment

The Neighborhood Commercial Land Use Classification outlined in the Land Use Element of the General Plan will be amended to read as follows:

Land Use Classifications

<u>Neighborhood Commercial</u>

These areas of the city are generally characterized by pedestrian-oriented, neighborhood-serving commercial development, and multi-family residential structures. These areas are typically located on two-lane streets with on-street parking and transit. Appropriate uses for these areas include: local-serving commercial, residential, office, community service, and institutional. Building intensity will generally range from a Floor Area Ratio (FAR) of less than 1 to a FAR of 3. Population density will generally range from 44 to 365 persons per acre.

The Elmwood Commercial, North Shattuck Commercial, and Solano Avenue Commercial zoning districts include a Mixed-Use Opportunity Area, which allows for population densities up to 365 persons per acre.

For information purposes, the compatible zoning districts for this classification are shown below with accompanying development standards.

Zoning District	*Maximum FAR*	*Maximum Height*	*Maximum Density*	*Mixed-Use Opportunity Area Maximum Height*	*Mixed-Use Opportunity Area Maximum Density*
Neighborhood Commercial	*3*	*35 ft.*	N/A	N/A	N/A
Elmwood Commercial	0.8 to 1 (non-residential)	28 ft	40 du/acre	58 ft	115 du/acre
North Shattuck Commercial	1 (non-residential)	38 ft	85 du/acre	78 ft	165 du/acre
Solano Avenue Commercial	2 (non-residential)	28 ft	60 du/acre	68 ft	140 du/acre
South Area Commercial	4	24 – 36 ft.	N/A	N/A	N/A

3.3 Proposed Project Buildout Assumptions Compared to 2023 EIR

As discussed above under Section 2.1 and shown on Table 1, the 2023 EIR assumed that implementation of the HEU zoning changes and other programs could facilitate up to 19,098 units additional units in Berkeley, of which 15,153 units are part of the EIR Sites Inventory. Of the Sites Inventory units, 278 of those units are within the three corridor areas. Therefore, 278 new units in the corridor areas were accounted for in the 2023 EIR.

As shown in Table 3, based on the development assumptions described in Appendix A, the proposed project would facilitate the development of up to 4,677 new residential units. Therefore, compared to the growth of 20,750 units anticipated under the HEU as analyzed in the 2023 EIR and the Southside Zoning Ordinance Addendum, the proposed project would allow for an increase in the number of residential units in Berkeley by 4,399 units (4,677 new units minus 278 new units already assumed in the corridors).

Further, as shown on Table 3, the proposed project could reduce the amount of commercial uses by up to 110,788 square feet in the corridors. The 2023 EIR did not assume a change in commercial uses in Berkeley due to implementation of the HEU.

Overall, the analysis in the Addendum assumes an increase in 4,399 residential units and a reduction in 110,788 square feet of commercial uses compared to what was analyzed in the 2023 EIR.

4 Conclusion Regarding Preparation of an Addendum to the 2023 EIR

The 2023 EIR was a program EIR that analyzed the impacts of the City's HEU, including HEU Program 27, which called upon the City to "update zoning map and development standards to accommodate housing capacity and growth on transit and commercial corridors, particularly in the highest resource and higher income neighborhoods pursuant to the Affirmatively Furthering Fair Housing requirement." The proposed project is designed to implement Program 27. However, as implemented, the proposed project would increase the number of residential units to be developed beyond what was analyzed in the 2023 EIR. It would also decrease the amount of commercial space.

As stated above, the proposed project—including the proposed Zoning Ordinance, Zoning Map and General Plan amendments—constitutes a rezoning that implements Housing Element Update Program 27 in the City's approved Housing Element. Therefore, the proposed project is exempt from CEQA pursuant to Public Resources Code Section 21080.085(a).

Nonetheless, the City has prepared this Addendum to describe the potential additional impacts, beyond the impacts analyzed in the 2023 EIR.

The impact analysis that follows in Section 5 of this Addendum concludes, based on substantial evidence, that the proposed project would not result in new or substantially more severe significant environmental impacts beyond those identified in the 2023 EIR due to substantial changes in the previously approved project, substantial changes in the circumstances under which the project is undertaken, or new information of substantial importance. None of the conditions described in *CEQA Guidelines* Section 15162 that would call for preparation of a subsequent EIR have been met because of the proposed project's changes to the approved HEU. Therefore, this Addendum is the appropriate level of environmental documentation to prepare for the proposed project under CEQA. The City will consider this Addendum, along with the 2023 EIR, prior to making a decision on the proposed project.

5 Environmental Impacts of the Proposed Project in Relation to the HEU

This Addendum analyzes the changes proposed under the proposed project compared to the analysis of the HEU project in the 2023 EIR to determine if any of the criteria in *CEQA Guidelines* Section 15162 that call for preparing a subsequent EIR would apply to the proposed project. The existing environmental conditions on and around the project site are substantially the same under present conditions as those described in the 2023 EIR. The analysis contained in this section provides updates to existing environmental conditions, where necessary, to characterize potential impacts of the proposed project.

Appendix G of the *CEQA Guidelines* provides a checklist of environmental issue areas suggested for assessment in a CEQA analysis. The 2023 EIR addressed most of these environmental issue areas in detail including the following:

- Aesthetics
- Air Quality
- Biological Resources
- Cultural Resources
- Energy
- Geology and Soils
- Greenhouse Gas Emissions
- Hazards and Hazardous Materials
- Hydrology and Water Quality
- Land Use and Planning
- Noise and Vibration
- Population and Housing
- Public Services and Recreation
- Transportation/Traffic
- Tribal Cultural Resources
- Utilities
- Wildfire

No impacts associated with agriculture and forestry resources or mineral resources were found to occur, and these issues were not analyzed further in the 2023 EIR. The proposed project would be located within the study area analyzed in the 2023 EIR, which includes the entire City of Berkeley, and for the same reasons as stated in the 2023 EIR would not result in impacts related to agriculture and forestry resources or mineral resources because those resources are not present in the three corridors. Therefore, these issues are not addressed further in this Addendum. The remaining environmental issue areas included in Appendix G of the *CEQA Guidelines* were analyzed in the 2023 EIR.

Potential environmental impacts of the proposed project are analyzed in this Addendum to determine if they are consistent with the impact analysis in the 2023 EIR, and whether additional mitigation measures are required to minimize or avoid further potential impacts. Where the following analysis identifies impacts, mitigation measures identified in the 2023 EIR and adopted and incorporated into the HEU, as well as existing applicable policies and regulations, are discussed, as relevant, with respect to mitigating potentially significant impacts of the proposed project that are different from (new) or substantially more severe than those identified in the 2023 EIR.

5.1 Aesthetics

Impacts Identified in the 2023 EIR

As discussed in Section 4.1, *Aesthetics*, of the 2023 EIR, residential projects located in a Transit Priority Area (TPA) are considered to have less than significant impacts on aesthetics pursuant to SB 743. For projects outside of a TPA, the HEU would not have a substantial adverse effect on a scenic vista since most new buildings would be of a similar height as existing development and views that would be

affected are already fully or intermittently impeded by mature trees and buildings. Development under the HEU would also be subject to design review as part of the project approval process and would be subject to the City's general development standards (Berkeley Municipal Code [BMC] Chapter 23.304) as well as objective development standards to ensure that buildings are compatible with neighboring land uses and architectural design and scale. Development under the HEU would replace facilities such as parking lots with buildings that may reduce nighttime sources of light, and new light sources would likely be adjacent and similar to nearby light sources. Development would also be required to comply with BMC Sections 23.304.100 and 23.304.130 which require exterior lighting to be shielded to avoid light spillover onto adjacent residential properties. Furthermore, the closest State Scenic Highway to the city is I-580 in Oakland approximately 1.6 miles from the city limits, and the closest eligible State Scenic Highway is SR 13 located approximately 0.5 miles from the city limits. The proposed HEU would not have a substantial adverse effect on a scenic vista, conflict with applicable local regulations governing scenic quality, create a new source of substantial light and glare, or substantially damage scenic resources within a scenic highway. Therefore, aesthetics impacts would be less than significant.

Impacts of the Proposed Project

Senate Bill 743 (California Public Resources Code [PRC] Section 21099), which was passed in 2013, made changes to CEQA for projects located in transit-oriented development areas. Among these changes are that a project's aesthetics impacts are no longer considered significant impacts on the environment if the project is a residential, mixed-use residential, or employment center project and if the project is located on an infill site within a transit priority area (TPA). Pursuant to PRC Section 21099, a "transit priority area" is defined as an area within 0.5 mile of an existing or planned major transit stop. A "major transit stop" is defined in Section 21064.3 of the California Public Resources Code as a rail transit station, a ferry terminal served by either a bus or rail transit service, or the intersection of two or more major bus routes with a frequency of service interval of 20 minutes or less during the morning and afternoon peak commute periods.

The proposed project would facilitate residential and mixed-use development in the Solano Avenue, North Shattuck Avenue, and College Avenue corridors, which are designated TPAs as mapped by the Metropolitan Transportation Commission (MTC 2021).

Multiple bus routes such as the Alameda-Contra Costa Transit District (AC Transit) bus routes 18, 27, G, 72, 72L, 72M, and 800 are located along the Solano Avenue Corridor; bus routes 7, 18, and FS are located along the North Shattuck Avenue Corridor; and bus routes 22, 51B, 605, and 851 are located along the College Avenue Corridor. Therefore, because the proposed project would facilitate residential and mixed uses within a TPA, aesthetics impacts may not be considered significant impacts on the environment.

Pursuant to PRC Section 21099.d, "aesthetic impacts do not include impacts on historical or cultural resources." Analysis of impacts related to historic or cultural resources is provided below in Section 5.4, *Cultural Resources*.

Effects and Mitigation Measures

No new or substantially more severe significant effects would occur related to aesthetics, and no new mitigation measures are required.

Conclusion

Aesthetics impacts within TPAs, such as the Solano Avenue, North Shattuck Avenue, and College Avenue corridors, are not considered to be significant effects on the environment. No substantial changes have occurred that require major revisions to the 2023 EIR. There is no new information indicating that the proposed project would have new significant impacts or substantially more severe significant impacts with respect to aesthetics than were identified in the 2023 EIR. None of the conditions listed in *CEQA Guidelines* Section 15162 requiring preparation of a subsequent EIR have been met.

5.2 Air Quality

Impacts Identified in the 2023 EIR

As discussed in Section 4.2, *Air Quality*, of the 2023 EIR, analysis of the HEU relied on the 2017 Bay Area Air Quality Management District (the Air District) CEQA Guidelines. Construction-related air quality impacts were found to be less than significant with implementation of Berkeley's Standard Conditions of Approval (COA) related to diesel particulate matter controls during construction, as well as Mitigation Measure AQ-1, which was adopted and incorporated into the HEU and requires adherence to the Air District's Basic Construction Mitigation Measures to reduce fugitive dust impacts. Operational air quality impacts were also found to be less than significant because the VMT associated with HEU buildout would increase by approximately 38 percent, which would not exceed the rate of increase from the forecast population of approximately 43 percent. As discussed in Section 4.2 of the 2023 EIR, because the HEU's VMT increase would not conflict with the Air District's CEQA Guidelines operational plan-level significance thresholds for criteria air pollutants, and the HEU would be consistent with control measures within the Air District 2017 Clean Air Plan, impacts related to conflicting or obstructing implementation of an applicable air quality plan would be less than significant.

According to the California Office of Environmental Health Hazard Assessment (OEHHA), construction of individual projects lasting longer than two months or located within 1,000 feet of sensitive receptors could potentially expose nearby sensitive receptors to substantial pollutant concentrations and therefore could result in potentially significant health risk impacts (OEHHA 2015). Construction conducted in response to the HEU could exceed the Air District's thresholds of an increased cancer risk of greater than 10.0 in a million and an increased non-cancer risk of greater than 1.0 Hazard Index (Chronic or Acute), and result in potentially significant impacts related to construction toxic air contaminant (TAC) emissions. However, with implementation of Mitigation Measure AQ-2, which was adopted and incorporated into the HEU, construction-related TAC impacts were found to be less than significant. The 2023 EIR determined that operation of land uses facilitated by buildout of the HEU would not include sources of TACs such as freeways and high-volume roadways, truck distribution centers, ports, rail yards, refineries, chrome plating facilities, dry cleaners using perchloroethylene, and gasoline dispensing facilities, and also would not include new stationary sources onsite such as emergency diesel generators (the Air District 2017). Therefore, the 2023 EIR found less than significant impacts related to operational TACs.

In 2005, CARB issued recommendations to avoid siting new residences within 500 feet of a freeway, urban roads with 100,000 vehicles/day, or rural roads with 50,000 vehicles/day or close to known stationary TAC sources (CARB 2005). The Air District's average daily traffic (ADT) threshold is lower, at 10,000 vehicles per day (the Air District 2012); therefore, this analysis conservatively uses the Air District's ADT threshold. Development consistent with the HEU could place sensitive receptors living in housing within approximately 500 to 1,000 feet of Interstate 580 (I-580) and Interstate 80 (I-80). There is also the potential for development to occur within 500 feet of roadways that have existing traffic volumes of 10,000 vehicles per day or more such as University Avenue, Adeline Street, Telegraph Avenue, Claremont Avenue, and Gilman Street (Caltrans 2020). Therefore, development of those housing sites could create a potentially significant impact by exposing future sensitive receptors to substantial pollutant concentrations. However, implementation of Mitigation Measure AQ-3, which was adopted and incorporated into the HEU, would be required and would reduce impacts to a less than significant level.

The 2023 EIR found that the HEU would not generate objectionable odors affecting a substantial number of people during operation since it would not include uses such as wastewater treatment plants, landfills or transfer stations, refineries, composting facilities, confined animal facilities, food manufacturing, smelting plants, or chemical plants. Impacts related to odors would be less than significant.

Impacts of the Proposed Project

The proposed project would increase potential residential buildout in the three corridors compared to what was analyzed in the 2023 EIR by up to 4,399 units, and is anticipated to facilitate redevelopment of some commercial-only sites with mixed-use such that amount of commercial space would decrease. Overall, the proposed project would facilitate increased development in areas well-served by alternative transportation thereby reducing the use of personal vehicles and subsequent mobile emissions. Specifically, AC Transit bus routes 18, 27, G, 72, 72L, 72M, and 800 are located along the Solano Avenue Corridor; bus routes 7, 18, and FS are located along the North Shattuck Avenue Corridor; and bus routes 22, 51B, 605, and 851 are located along the College Avenue Corridor. The three corridors also include bicycle and pedestrian facilities to facilitate walking and biking.

Similar to the HEU, development facilitated by the proposed project would be required to comply with the latest Title 24 and BMC regulations, including:

- The requirements for residential indoor air quality;
- Part 6 of Title 24, which requires all new low-rise buildings to install photovoltaic (PV) panels that can generate an output greater or equal to the amount of electricity that is annually consumed;
- BMC Section 23.322.090, which contains requirements for residential bicycle parking;
- BMC Section 19.37.040, which requires 20 percent of parking spaces to be electric vehicle charging spaces capable of supporting future electric vehicle chargers and 80 percent of parking spaces to include raceways to facilitate future electric vehicle supply equipment at all new multi-family developments, and for new one- and two-family dwelling units to accommodate a dedicated 208/240-volt branch circuit for a future EV charger;
- BMC Section 19.37.040 which requires a minimum 65 percent diversion of construction/demolition waste.

Therefore, the proposed project would be consistent with the primary goals and control measures of the 2017 Clean Air Plan.

The proposed project would also increase the amount of construction activities compared to the HEU since it would potentially facilitate up to 4,399 more units, and would allow for increased building heights and density, which could require deeper foundations and/or increase the likelihood of sub-grade parking, thereby further increasing air pollutant emissions that would affect local air quality. Nonetheless, similar to the HEU, development facilitated by the proposed project would be required to comply with the City's Standard COA regarding diesel particulate matter controls during construction, as well as previously adopted Mitigation Measure AQ-1, which requires implementation of Bay Area Air District's (Air District) Basic Construction Mitigation Measures. This would reduce construction-related emissions to a less than significant level, similar to the HEU.

According to the Air District's 2022 CEQA Air Quality Guidelines (Air District 2023), determining compliance with the threshold for criteria air pollutants and precursors requires an assessment of the rate of increase of plan VMT and population. As discussed in the 2023 EIR, VMT associated with the HEU would not exceed the rate of increase from the forecast population. Table 4 summarizes the net increase in citywide population compared to the increase in citywide VMT based on modeling performed by Kittelson & Associates (Appendix C). Citywide data is used because VMT is not localized or constrained only to the three corridors.

Table 4 Increase in Population Compared to VMT Under Project

	2020 Without Project	2040 With Proposed Project	Net Increase	Percent Change
Population	128,004	203,785	75,781	59.2%
Residential Vehicle Miles Traveled	1,436,244	2,230,694	794,450	55.3%

Source: Kittelson & Associates, Inc 2026 (Appendix C)

As shown in Table 4, VMT for the proposed project would also increase at a lower percentage when compared to the 2020 Without Project scenario than the increase in population because the proposed project would concentrate growth and residences in proximity to jobs and services to reduce single-occupancy vehicle trips and encourage alternative modes of travel. Therefore, impacts concerning criteria pollutants generated from operation of the project would be less than significant, same as the HEU.

Similar to the HEU, development facilitated by the proposed project could exceed the Air District's thresholds for increased cancer risk of greater than 10.0 in a million and for increased non-cancer risk of greater than 1.0 Hazard Index (Chronic or Acute), and construction TAC impacts would be potentially significant. Nonetheless, individual development would be required to continue to implement previously adopted Mitigation Measure AQ-2, which would require construction activities that would occur within 1,000 feet of sensitive receptors, last longer than two months, and not utilize Tier 4 and/or alternative fuel construction equipment to prepare a construction Health Risk Assessment (HRA) that would reduce construction TAC impacts to a less than significant level.

Operation of development facilitated by the proposed project would not include sources of TACs such as freeways and high-volume roadways, truck distribution centers, ports, rail yards, refineries, chrome plating facilities, dry cleaners using perchloroethylene, and gasoline dispensing facilities, and therefore would not be considered a source of TACs. Residences also do not typically include new stationary sources of TACs onsite, such as emergency diesel generators. However, if residences did include a new stationary source onsite, it would be subject to the Air District Regulation 2, Rule 2 (New Source Review) and require permitting. This process would ensure that the stationary source does not exceed applicable Air District health risk thresholds. Therefore, similar to the HEU, operational TAC impacts due to the proposed project would be less than significant.

Unlike the HEU, increased development facilitated within the Solano Avenue and North Shattuck Avenue Corridors would not place sensitive receptors living in housing within approximately 500 to 1,000 feet of Interstate 580 (I-580), Interstate 80 (I-80), or State Route 13 (SR 13)/Ashby Avenue. However, development facilitated in the College Avenue Corridor could place sensitive receptors living in housing within 500 feet of SR 13/Ashby Avenue. In addition, there is potential for development to occur within 500 feet of a roadway that has a traffic volume of 10,000 vehicles per day or more such as Solano Avenue, which could result in a potentially significant impact (Caltrans 2023). Therefore, continued implementation of previously adopted Mitigation Measure AQ-3 would be required for future development located within 500 feet of Solano Avenue or SR 13, which would require the incorporation of TAC reduction design features into future projects in order to reduce impacts to a less than significant level.

As with the HEU, the proposed project's changes to the HEU would facilitate development of new residential uses and would not facilitate new odor-generating uses such as wastewater treatment plants, landfills or transfer stations, refineries, composting facilities, confined animal facilities, food manufacturing, smelting plants, or chemical plants. Therefore, development facilitated by the proposed project would not generate objectionable odors affecting a substantial number of people during operation, and impacts would be less than significant, similar to the HEU.

Effects and Mitigation Measures

No new or substantially more severe significant effects would occur to air quality, and no new mitigation measures are required. Berkeley's Standard COA requiring construction BMPs, as referenced in the 2023 EIR, would remain applicable.

> **Air Quality – Diesel Particulate Matter Controls During Construction.** All off-road construction equipment used for projects with construction lasting more than 2 months shall comply with **one** of the following measures:
>
> A. The project applicant shall prepare a health risk assessment that demonstrates the project's on-site emissions of diesel particulate matter during construction will not exceed health risk screening criteria after a screening-level health risk assessment is conducted in accordance with

current guidance from the Air District and OEHHA. The health risk assessment shall be submitted to the Public Works Department for review and approval prior to the issuance of building permits.

B. All construction equipment shall be equipped with Tier 2 or higher engines and the most effective Verified Diesel Emission Control Strategies (VDECS) available for the engine type (Tier 4 engines automatically meet this requirement) as certified by the California Air Resources Board (CARB). The equipment shall be properly maintained and tuned in accordance with manufacturer specifications.

In addition, a Construction Emissions Minimization Plan (Emissions Plan) shall be prepared for any development project allowed by the project. All Emissions Plans must include the following:

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

Previously adopted 2023 EIR Mitigation Measures AQ-1 through AQ-3 would remain applicable and would continue to be implemented and monitored.

AQ-1 Construction Emissions Reduction Measures

As part of the City's development approval process, the City shall require applicants for future development projects within the project sites to comply with the current Bay Area Air Quality Management District's basic control measures for reducing construction emissions of PM_{10} (Table 8-2, Basic Construction Mitigation Measures Recommended for All Proposed Projects, of the May 2017 the Air District CEQA Guidelines), outlined below.

1. All exposed surfaces (e.g., parking areas, staging areas, soil piles, graded areas, and unpaved access roads) shall be watered two times a day.
2. All haul trucks transporting soil, sand, or other loose material off-site shall be covered.
3. All visible mud or dirt track-out onto adjacent public roads shall be removed using wet power vacuum street sweepers at least once per day. The use of dry power sweeping is prohibited.
4. All vehicle speeds on unpaved roads shall be limited to 15 miles per hour.
5. All roadways, driveways, and sidewalks to be paved shall be completed as soon as possible. Building pads shall be laid as soon as possible after grading unless seeding or soil binders are used.
6. Idling times shall be minimized either by shutting equipment off when not in use or reducing the maximum idling time to five minutes (as required by the California Airborne Toxics Control Measure Title 13, Section 2485 of California Code of Regulations). Clear signage shall be provided for construction workers at all access points.
7. All construction equipment shall be maintained and properly tuned in accordance with manufacturer's specifications. All equipment shall be checked by a certified mechanic and determined to be running in proper conditions prior to operation.
8. Post a publicly visible sign with the telephone number and person to contact at the Lead Agency regarding dust complaints. This person shall respond and take corrective action within 48 hours. The Air District's number shall also be visible to ensure compliance with applicable regulations.

AQ-2 Construction Health Risk Assessment

For individual projects (excluding ADUs, single-family residences, and duplexes) where construction activities would occur within 1,000 feet of sensitive receptors, would last longer than two months, and would not utilize Tier 4 and/or alternative fuel construction equipment, the project applicant shall prepare a construction health risk assessment (HRA). The HRA shall determine potential risk and compare the risk to the following the Air District thresholds:

- Non-compliance with Qualified Community Risk Reduction Plan;
- Increased cancer risk of > 10.0 in a million;
- Increased non-cancer risk of > 1.0 Hazard Index (Chronic or Acute); or
- Ambient $PM_{2.5}$ increase of > 0.3 $\mu g/m^3$ annual average

If risk exceeds the thresholds, measures such as requiring the use of Tier 4 and/or alternative fuel construction equipment shall be incorporated to reduce the risk to appropriate levels.

AQ-3 TAC Exposure Reduction Building Measures

The following design features shall be incorporated for residential development located within 1,000 feet of I-580/80 or on a lot that fronts on a section of roadway with 10,000 vehicles per day or more in order to reduce exposure of proposed residences to TACs from vehicles and stationary combustion engines (i.e., generators):

1. If the proposed buildings would use operable windows or other sources of infiltration of ambient air, the development shall install a central HVAC system that includes high efficiency particulate filters (HEPA). These types of filters are capable of removing approximately 99.97 percent of the DPM emissions from air introduced into the HVAC system (U.S. EPA 2022). The system may also include a carbon filter to remove other chemical matter. Filtration systems must operate to maintain positive pressure within the building interior to prevent entrainment of outdoor air indoors.
2. If the development limits infiltration through non-operable windows, a suitable ventilation system shall include a ventilation system with filtration specifications equivalent to or better than the following: (1) American Society of Heating, Refrigerating and Air- Conditioning Engineers MERV-13 supply air filters, (2) greater than or equal to one air exchanges per hour of fresh outside filtered air, (3) greater than or equal to four air exchanges per hour recirculation, and (4) less than or equal to 0.25 air exchanges per hour in unfiltered infiltration. These types of filtration methods are capable of removing approximately 90 percent of the DPM emissions from air introduced into the HVAC system.
3. Windows and doors shall be fully weatherproofed with caulking and weather-stripping that is rated to last at least 20 years. Weatherproof should be maintained and replaced by the property owner, as necessary, to ensure functionality for the lifetime of the project.
4. Where appropriate, install passive (drop-in) electrostatic filtering systems, especially those with low air velocities (*i.e.*, 1 mph).
5. Prepare an ongoing maintenance plan for the HVAC and filtration systems, consistent with manufacturers' recommendations.
6. The applicant shall inform occupants regarding the proper use of any installed air filtration system.

Conclusion

The proposed project would have less than significant impacts after mitigation with respect to air quality. No substantial changes have occurred that require major revisions to the 2023 EIR. There is no new information indicating that the proposed project would have new significant impacts or substantially more severe significant impacts with respect to air quality than were identified in the 2023 EIR. None of the conditions listed in *CEQA Guidelines* Section 15162 requiring preparation of a subsequent EIR have been met.

5.3 Biological Resources

Impacts Identified in the 2023 EIR

As discussed in Section 4.3, *Biological Resources*, of the 2023 EIR, the HEU does not include development sites on the western boundary of Berkeley, where marine, estuarine, and lacustrine habitats may provide habitats for special-status species and native fish and wildlife, and includes mainly sites in the urbanized core of the City. Therefore, the HEU would have less than significant impacts related to riparian habitats and sensitive natural communities, state or federally protected wetlands, and movement of native resident or migratory fish or wildlife species. Nonetheless, trees, shrubs, man-made structures, and the ground surface throughout Berkeley provide suitable nesting substrates for birds protected under the Migratory Bird Treaty Act (MBTA) and California Fish and Game Code (CFGC), and construction activities under the HEU could potentially affect nesting birds if carried out during breeding season. However, with compliance with the City's Standard COA related to avoiding disturbance of nesting birds, impacts would be less than significant. As discussed in the 2023 EIR, development facilitated by the HEU would be required to comply with the City's Tree Ordinance (BMC No. 6,509-N.S.) and Creek Protection Ordinance (BMC Chapter 17.08), and because there are no adopted habitat conservation plans or natural community conservation plans within the city of Berkeley, the HEU would not conflict with provisions of an adopted Habitat Conservation Plan or Natural Community Conservation Plan.

Impacts of the Proposed Project

Although the proposed project's changes to the HEU would facilitate the development of up to 4,399 more units in the Solano Avenue, North Shattuck Avenue, and College Avenue Corridors compared to the adopted HEU, the proposed project would only increase residential density on sites that could be redeveloped in a highly-urbanized area of the city away from open space preserves and non-channelized creeks and would not directly or indirectly impact the habitat of special-status species. New development facilitated under the proposed project would not differ substantially from the urban development already allowed in the three corridors with respect to implications for biological resources. Although trees and other vegetation in the three corridors may support species of nesting migratory birds protected under the CFGC, development facilitated by the proposed project would be required to comply with the City's Standard COA regarding avoidance of disturbance of nesting birds, which would reduce impacts to a less than significant level, similar to the HEU.

> **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.

The Solano Avenue, North Shattuck Avenue, or College Avenue Areas do not contain natural communities considered sensitive by the California Department of Fish and Wildlife. There are also no mapped or designated federally protected wetlands in the three corridors (USFWS 2025). Some underground drainage culverts may intersect the three corridors; however, these are not federally protected and therefore are not subject to United States Army Corps of Engineers (USACE) jurisdiction. Additionally, pursuant to BMC Chapter 17.08, obstructing or interfering with watercourses is prohibited and construction within 30 feet of a culverted creek must receive a permit from the City Engineer and comply with the provisions in the chapter to ensure the watercourse is protected. Due to the developed nature of the three corridors, there would not be potential for impacts to protected wetlands. Additionally, the three corridors are not within, and do not function as, a significant regional or local wildlife movement corridor, since there are no waterways that could be utilized for movement of native residents or migratory fish. Furthermore, there are no habitat conservation plans or natural community conservation plans adopted in the Solano Avenue, North Shattuck Avenue, or College Avenue Areas, and the proposed project would not conflict with such plans. Therefore, impacts would be less than significant, similar to the HEU.

Similar to the HEU, the proposed project could result in the removal of mature trees during construction. General Plan Policy EM-29 requires the City to maintain and enhance street and park trees to improve the environment and provide habitat. On-going implementation of that policy through site-specific design review and use permits would reduce potential impacts to locally significant trees to a less than significant level. Development facilitated by the proposed project would also be required to adhere to the City of Berkeley's Tree Ordinance (BMC No. 6,509-N.S.), which prohibits the removal of coast live oak trees unless determined to be necessary for public safety by the City Manager. Therefore, with adherence to the City's Tree Ordinance and other policies and ordinances for protecting biological resources, impacts would be less than significant, similar to the HEU.

Effects and Mitigation Measures

No new or substantially more severe significant effects would occur to biological resources, and no new mitigation measures are required. Berkeley's Standard COA requiring avoiding disturbance of nesting birds, as referenced in the 2023 EIR, would remain applicable.

Conclusion

The proposed project would have less than significant impacts with respect to biological resources. No substantial changes have occurred that require major revisions to the 2023 EIR. There is no new information indicating that the proposed project would have new significant impacts or substantially more severe significant impacts with respect to biological resources than were identified in the 2023 EIR. None of the conditions listed in *CEQA Guidelines* Section 15162 requiring preparation of a subsequent EIR have been met.

5.4 Cultural Resources

Impacts Identified in the 2023 EIR

As discussed in Section 4.4, *Cultural Resources*, of the 2023 EIR, the City has adopted regulations related to cultural resources that would apply to development facilitated by the HEU. Pursuant to Chapter 3.24 of the BMC, the City's Landmarks Preservation Commission (LPC) ordinance provides procedures for the local designation of historical resources and includes a provision for a permit review which allows the LPC to review and approve construction, alteration, or demolition of a designated landmark, buildings in designated historic districts, and structures of merit. In addition, pursuant to BMC Section 23.326.070(C), the City requires any application for a Use Permit or Administrative Use Permit to demolish a non-residential building or structure which is 40 or more years old to be forwarded to the LPC for review before consideration of the permit. Further, the City's zoning project application requires a historical resources evaluation for zoning projects that include the proposed demolition or substantial change to

any building 40 or more years old subject to environmental review. For projects subject to discretionary review, potential impacts to historical resources would be addressed by following the existing procedures of the City's permit review process, and by adherence to the City's Standard COAs. The BMC requirements and zoning project application submittal requirements listed above are intended to reduce impacts to historical resources by ensuring that proposed changes to buildings do not negatively impact the resource by encouraging the preservation and maintenance of historical materials and ensuring work performed is consistent with the resource's historical character. Nonetheless, the 2023 EIR determined that there is potential for historic resources that have not yet been subject to evaluation or would not be subject to the City's permit review or zoning application requirements to be adversely impacted, and Mitigation Measure CUL-1 and Mitigation Measure CUL-2, which were adopted and incorporated into the HEU, would be required to reduce impacts to the maximum extent feasible. However, even with implementation of previously-adopted Mitigation Measure CUL-1 and Mitigation Measure CUL-2, existing and eligible historical resources could still be materially impaired by future development that would be facilitated by the HEU because specific actions intended for the reduction of impacts to historical resources could be deemed infeasible. In addition, future projects that are not subject to discretionary review and have not been previously evaluated for the presence of historical resources could result in the demolition of potential historic resources. Therefore, impacts to historical resources were found to be significant and unavoidable.

The 2023 EIR found that ground-disturbance on properties with native soils could contain previously unknown prehistoric or historic-period resources, and individual development projects facilitated by the HEU that would involve ground disturbance activities would have the potential to damage or destroy archaeological resources, especially if they occur below previously disturbed sediments. However, with adherence to the City's Standard COA related to archaeological resources, impacts would be less than significant.

The 2023 EIR also determined that ground-disturbing activities associated with development under the HEU could result in damage to or destruction of human burials. However, compliance with the California Health and Safety Code (Section 7050.5, 7051, and 7054), which has specific provisions for the protection of human burial remains, PRC Section 5097.98, which addresses the disposition of Native American burials, protects such remains, and establishes the Native American Heritage Commission (NAHC) to resolve related disputes, and the City's Standard COA related to human remains; would result in impacts that would be less than significant.

Impacts of the Proposed Project

Historical Resources

The historic landmarks, addresses, date of construction, and designation date and type are shown below in Table 5.

Table 5 Summary of Development Assumptions

Historic Landmark	Address	Date of Construction	Designation Date	Designation Type
Solano Avenue Corridor				
Oaks Theatre	1875 Solano Avenue	1925	2/22/2006	City Landmark
North Shattuck Avenue Corridor				
Whittemore Woodworth House	2043 Lincoln Street	1905	9/7/1993	City Landmark
Swink House, Cottage, and Garden	1527-1529 Shattuck Avenue	1903	5/1/2000	Structure of Merit
Squires Block	2100 Vine Street	1895	3/7/2005	Structure of Merit

Historic Landmark	Address	Date of Construction	Designation Date	Designation Type
Capitol Market Building	1500-1512 Shattuck Avenue and 2042-2046 Vine Street	1891	9/3/2009	City Landmark
EBMUD Vine Street Pumping Plant	2113 Vine Street	1930	10/4/1999	City Landmark
College Avenue Corridor				
Bolfing's Elmwood Hardware	2951 College Avenue	1923	4/6/2006	City Landmark
Mercantile Trust Co.	2959 College Avenue	1925	3/15/1982	City Landmark
Strand Theater Elmwood	2966 College Avenue	1914	5/24/1982	City Landmark

Source: City of Berkeley 2025, 2026

None of the three corridors include designated historic districts. The HEU analyzed in the 2023 EIR did not include specific physical development projects, but the 2023 EIR assumed that development was a reasonably foreseeable outcome that would be facilitated by adoption of the HEU. The proposed project also does not call for specific physical development projects but, similarly, this analysis assumes that implementation of the proposed project's zoning changes in the three corridors would facilitate development projects. Therefore, as was assumed in the 2023 EIR, reasonably foreseeable development facilitated by the proposed project could impact historical resources through demolition and construction activities.

The City currently has procedures in place for projects that would involve the demolition of non-residential buildings 40 or more years old that require use permits or administrative use permits to be forwarded to the LPC for review. The City's standard zoning application requires a historic resources evaluation for zoning projects subject to environmental review that involve the proposed demolition or substantial alteration of a building over 40 years old. For projects subject to discretionary review, potential impacts to historical resources would be addressed by following the existing procedures of the permit review process, and by adherence to the City's Standard COAs. These regulations are intended to reduce impacts to historical resources by ensuring that proposed changes to buildings do not adversely impact the resource through encouraging the preservation and maintenance of historical materials and ensuring work performed is consistent with the resource's historical character. Nonetheless, for future development projects that are not subject to discretionary review, the City would not have the authority to implement review procedures for evaluating buildings 40 or more years old. Further, there are designated, known, and potential historic resources in the three corridors. Although the continued implementation of previously adopted Mitigation Measure CUL-1 and Mitigation Measure CUL-2 would be required in order to reduce impacts to historical resources to the extent feasible, even with implementation of these mitigation measures, existing and eligible historical resources could still be materially impaired by future development that would be facilitated by the proposed project. Material impairment could occur because specific actions intended for the reduction of impacts to historical resources could be determined to be infeasible. Material impairment could also occur because future projects that are not subject to discretionary review on sites with structures that have not been previously evaluated to initiate a landmark or structure-of-merit designation could result in the demolition of potential but unknown historic resources. Although future development would be required to comply with mitigation measures CUL-1 and CUL-2 as adopted in the HEU, similar to the HEU, impacts due to the proposed project's changes to the HEU would remain significant and unavoidable. Nonetheless, because the HEU EIR examined citywide impacts to historical resources, impacts related to historical resources associated with the project would not be substantially more severe than what was analyzed in the HEU.

Archaeological Resources and Human Remains

Similar to what was analyzed in the 2023 EIR, although development under the proposed project would occur on redevelopment sites in previously disturbed areas, ground-disturbing activities such as earthmoving and excavation could still potentially damage and/or destroy unrecorded archaeological

resources in subsurface soils within the three corridors. Additionally, the proposed project would allow increased building heights and density, as described in Appendix A, which could require increased subgrade excavation due to deeper foundations and/or increase the likelihood of sub-grade parking, and thereby increase the likelihood of encountering archaeological resources or human remains. Nonetheless, although the proposed project could facilitate development of up to a projected 8 stories as outlined in Appendix A and would require incrementally greater depths of disturbance for taller buildings, the building footprint and area of ground disturbance would stay the same as analyzed under the 2023 EIR, and the geographic extent of subsurface disturbance would not expand into new areas that have not already been evaluated. Furthermore, such development would be required to comply with the City's Standard COA related to archaeological resources during demolition, grading, and construction, which would reduce impacts to a less than significant level, similar to the HEU.

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

A. In the event that any prehistoric or historic subsurface cultural resources are discovered during ground disturbing activities, all work within 50 feet of the resources shall be halted and the project applicant and/or lead agency shall consult with a qualified archaeologist, historian or paleontologist to assess the significance of the find.
B. If any find is determined to be significant, representatives of the project proponent and/or lead agency and the qualified professional would meet to determine the appropriate avoidance measures or other appropriate measure, with the ultimate determination to be made by the City of Berkeley. All significant cultural materials recovered shall be subject to scientific analysis, professional museum curation, and/or a report prepared by the qualified professional according to current professional standards.
C. In considering any suggested measure proposed by the qualified professional, the project applicant shall determine whether avoidance is necessary or feasible in light of factors such as the uniqueness of the find, project design, costs, and other considerations.
D. If avoidance is unnecessary or infeasible, other appropriate measures (e.g., data recovery) shall be instituted. Work may proceed on other parts of the project site while mitigation measures for cultural resources is carried out.
E. If significant materials are recovered, the qualified professional shall prepare a report on the findings for submittal to the Northwest Information Center.

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

Additionally, construction activities could also potentially disturb human remains. However, implementation of the proposed project would involve disturbance in the same areas as analyzed in the 2023 EIR, and conditions in the three corridors have not substantially changed since certification of the 2023 EIR and adoption of the HEU. Future development would be subject to federal and State regulations, such as the California Health and Safety Code Section 7050.5, Public Resources Code Section 5097.98, and CEQA Guidelines Section 15064.5(e), which state the mandated procedures of conduct following the

discovery of human remains. Future development would also be required to comply with the City's Standard COA related to human remains resources during demolition, grading, and construction, which would reduce impacts to a less than significant level, similar to the adopted HEU.

Effects and Mitigation Measures

Historical Resources

No new or substantially more severe significant effects would occur to cultural resources, and no new mitigation measures are required. Previously adopted Mitigation Measure CUL-1 and Mitigation Measure CUL-2 would remain applicable and would continue to be implemented and monitored.

CUL-1 Historic Context Statement, Cultural Resources Survey and Designations

During the period of this Housing Element, the City should conduct a citywide historic context statement and a cultural resource survey to identify historic resources, with priority given to sites in the EIR Site Inventory, to determine if there are designed built environment features which are over 40 years of age proposed to be altered or demolished. Designation of historic or cultural resources should be conducted by the Landmarks Preservation Commission pursuant to 3.24.260 of the Berkeley Municipal Code.

CUL-2 Historical Resources Discretionary Review

For projects that are subject to discretionary review that occur during the Housing Element period where a historical-age building or structure that has not been previously evaluated is present, a historical resources assessment shall be performed by an architectural historian or historian who meets the Secretary of the Interior Professional Qualification Standards (PQS) in architectural history or history. The qualified architectural historian or historian shall conduct an intensive-level survey in accordance with the California Office of Historic Preservation guidelines to determine if the property qualifies for federal, state, or local historical resources designation. All age eligible properties shall be evaluated within their historic context and documented in a technical memorandum with Department of Parks and Recreation Series 523 Forms.

Should a property be found to be a qualifying historical resource, the project shall be subject to the City's regulations for permit review, including by the Landmarks Preservation Commission pursuant to Chapter 3.24.260, and/or by the Zoning Adjustments Board pursuant to Chapter 23.326 of the City of Berkeley Municipal Code. Efforts shall be made to the extent feasible to ensure that impacts are mitigated. Application of mitigation shall generally be overseen by a qualified architectural historian or historic architect meeting the PQS, unless unnecessary in the circumstances (e.g., preservation in place). In conjunction with a development application that may affect the historical resource, the historical resources built environment assessment shall also identify and specify the treatment of character-defining features and construction activities.

Efforts shall be made to the greatest extent feasible to ensure that the relocation, rehabilitation, or alteration of the resource is consistent with the Secretary of the Interior's Standards for the Treatments of Historic Properties (Standards). In accordance with CEQA, a project that has been determined to conform with the Standards generally would not cause a significant adverse direct or indirect impact to historical resources (14 CCR § 15126.4(b)(1)). Application of the Standards shall be overseen by a qualified architectural historian or historic architect meeting the PQS. In conjunction with any development application that may affect the historical resource, a report identifying and specifying the treatment of character-defining features and construction activities shall be provided to the City for review and concurrence. As applicable, the report shall demonstrate how the project complies with the Standards and be submitted to the City for review and approval prior to the issuance of permits.

If significant historical resources are identified on a development site and compliance with the Standards and/or avoidance is not possible, appropriate site-specific mitigation measures shall be established and undertaken. These may include documentation of the resource in a manner consistent with the standards

of the Historic American Building Survey (HABS). Documentation should include full descriptive and historical narrative, measured drawings, and medium format photographs, all in archivally stable format.

Archaeological Resources and Human Remains

No new or substantially more severe effects to archaeological resources or human remains were identified and no new mitigation measures are required. Berkeley's Standard COAs, as referenced in the 2023 EIR, would remain applicable and would reduce impacts to archaeological resources and human remains.

Conclusion

Historical Resources

Previously adopted Mitigation Measure CUL-1 and Mitigation Measure CUL-2 would remain applicable to the proposed project. However, even with implementation of these mitigation measures, impacts to cultural resources would remain significant and unavoidable, similar to the adopted HEU. There is no new information indicating that the proposed project would have new significant impacts or substantially more severe significant impacts with respect to historical resources than were identified in the 2023 EIR. None of the conditions listed in *CEQA Guidelines* Section 15162 requiring preparation of a subsequent EIR have been met.

Archaeological Resources and Human Remains

The proposed project would have less than significant impacts with respect to archaeological resources and human remains. No substantial changes have occurred that require major revisions to the 2023 EIR. There is no new information indicating that the proposed project would have new significant impacts or substantially more severe significant impacts with respect to archaeological resources or human remains than were identified in the 2023 EIR. None of the conditions listed in *CEQA Guidelines* Section 15162 requiring preparation of a subsequent EIR have been met.

5.5 Energy

Impacts Identified in the 2023 EIR

As discussed in Section 4.5, *Energy*, of the 2023 EIR, construction facilitated by the HEU would involve temporary energy use. During construction, contractors would be required to comply with the provisions of California Code of Regulations Title 13 Sections 2449 and 2485, which prohibit diesel-fueled commercial motor vehicles and off-road diesel vehicles from idling for more than 5 minutes and would minimize unnecessary fuel consumption. Construction equipment would be subject to the United States Environmental Protection Agency's (USEPA) Construction Equipment Fuel Efficiency Standard, which would also minimize inefficient, wasteful, or unnecessary fuel consumption. The HEU would also be required to comply with requirements outlined under 2019 CALGreen (as codified in CCR Title 24, Part 11).

Development under the HEU would be required to comply with standards set in California Building Code (CBC) Title 24, which would minimize the wasteful, inefficient, or unnecessary consumption of energy resources during operation. California's CALGreen standards (California Code of Regulations, Title 24, Part 11) and the California Energy Code would require implementation of energy-efficient light fixtures and building materials into the design of new construction projects, limit the use of natural gas infrastructure in new development, and provide for electric-ready infrastructure for natural gas appliances in new buildings. The HEU would facilitate development along transit corridors, near BART stations, and in Priority Development Areas (PDA), which would place residents in proximity to public transit and encourage walking and bicycling. BMC Chapter 19.37 would require at least 20 percent of parking spaces

at new multi-family residential developments to be capable of supporting electric vehicle chargers and raceway at the remaining 80 percent of parking spaces to facilitate future electric vehicle supply equipment, which would support the use of electric vehicles by future residents.

In addition, the HEU would be consistent with state renewable energy and energy efficiency plans as well as the City's General Plan policies related to energy. Impacts of the HEU would be less than significant.

Impacts of the Proposed Project

Although the proposed project would increase potential buildout in the Solano Avenue, North Shattuck Avenue, and College Avenue corridors compared to what was analyzed in the 2023 EIR by up to 4,399 units, increasing construction activities, energy use during demolition and construction would be temporary. Construction contractors would also be required to comply with the same regulations outlined in the 2023 EIR such as CARB regulations, provisions of California Code of Regulations, Title 13, Sections 2449 and 2485, USEPA Construction Equipment Fuel Efficiency, and 40 Code of Federal Regulations Parts 1039, 1065, and 1068. Future development would also be expected to utilize fuel-efficient equipment consistent with State and federal regulations, as well as divert a minimum of 65 percent of construction and demolition debris and recycle and salvage 100 percent of excavated soil and land-clearing debris, concrete, and of asphalt during construction and demolition activities pursuant to the latest iteration of CALGreen and BMC Chapter 19.37. Therefore, construction-related energy impacts would be less than significant, similar to the adopted HEU.

Long-term operation of future development under the proposed project would require permanent grid connections for electricity to power internal and exterior building lighting, and heating and cooling systems. Electricity in Berkeley is supplied by Ava Community Energy (Ava). Although the proposed project would facilitate the development of up to 4,399 more units in the three corridors, future development would be required to comply with all standards set in the latest iteration of the California Building Standards Code (California Code of Regulations, Title 24) and locally adopted amendments codified in Titles 12 and 19 of the BMC, which would minimize the wasteful, inefficient, or unnecessary consumption of energy resources by the built environment during operation. California's CALGreen standards (California Code of Regulations, Title 24, Part 11) and the California Energy Code require implementation of energy-efficient light fixtures and building materials into the design of new construction projects. Additionally, Title 24 standards are updated on a regular cycle to reflect advancements in energy efficiency technologies and to support California's long-term greenhouse gas reduction and decarbonization goals. As a result, each increment of new development would be built to increasingly efficient performance standards that reduce overall per-capita and per-unit energy consumption. Furthermore, all future residential customers would be placed in Ava's Renewable 100 Plan, which utilizes 100 percent renewable and carbon-free energy. The proposed project would also facilitate increased development within a TPA, which would encourage the use of alternative modes of transportation such as bicycling and walking, thereby reducing fuel consumption and minimizing the potential of the proposed project to result in the wasteful or unnecessary consumption of vehicle fuels. Therefore, given the above-mentioned reasons, the proposed project would also be consistent with State renewable energy and energy efficiency plans, the City's General Plan, and the City's CAP. Operational-related energy impacts would be less than significant, similar to the HEU.

Effects and Mitigation Measures

No new or substantially more severe significant effects related to energy would occur, and no new mitigation measures are required.

Conclusion

The proposed project would have less than significant impacts with respect to energy. No substantial changes have occurred that require major revisions to the 2023 EIR. There is no new information indicating that the proposed project would have new significant impacts or substantially more severe

significant impacts with respect to energy than were identified in the 2023 EIR. None of the conditions listed in *CEQA Guidelines* Section 15162 requiring preparation of a subsequent EIR have been met.

5.6 Geology and Soils

Impacts Identified in the 2023 EIR

As discussed in Section 4.6, *Geology and Soils*, of the 2023 EIR, the HEU would facilitate development in areas near the Hayward fault, which would increase the population and infrastructure that would be exposed to earthquake-related hazards. However, with compliance with applicable State and local laws such as the Alquist-Priolo Earthquake Fault Zone Act and Title 19, Chapter 28 of the BMC, impacts would be less than significant. The 2023 EIR determined that the HEU would be located in areas with "low" to "moderate" liquefaction potential and low landslide risk, and impacts were found to be less than significant. The 2023 EIR also determined that although unstable soils within Berkeley have the potential to damage infrastructure or introduce hazards to human health and safety, the City requires site-specific geotechnical evaluations for individual development on steep slopes and unstable soils in accordance with the California Building Code (CBC), and development under the HEU would be required to comply with the Policies S-13A and S-14B of the City's General Plan Disaster Preparedness and Safety Element. Impacts related to unstable soils were found to be less than significant.

The 2023 EIR found that Berkeley's soils are characterized by having "moderate" or a "high" potential for erosion-related hazards, and construction activities could result in erosion and the loss of topsoil. However, new development under the HEU would be required to comply with the State Water Regional Control Board's General Permit for Discharges of Stormwater Associated with Construction Activity (Construction General Permit [CGP] Order 2009-0009-DWQ). 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. Development would also be required to comply with BMC Chapter 21, Section 40, which requires compliance with the CGP, as well as BMC Section 21.40.270 requires subdivision projects to comply with grading, erosion and sediment control regulations on file with the Public Works Department. Therefore, impacts related to soil erosion or the loss of topsoil were found to be less than significant.

As discussed in Section 4.6 of the 2023 EIR, many of the soil types within Berkeley have "moderate" to "high" potential for shrink-swell behavior, or expansiveness Building on unsuitable soils would have the potential to create future subsidence or collapse issues that could result in the settlement of proposed project infrastructure, and/or the disruption of utility lines and other services. Development facilitated by the HEU would be required to comply with existing State and local regulations, such as the CBC and General Plan Action S-14B, which would require submittal to and review by the City of detailed soils and/or geologic reports prior to construction. Impacts were found to be less than significant.

The 2023 EIR found that construction activities related to the HEU would potentially result in significant impacts to paleontological resources. However, implementation of Mitigation Measure GEO-1, which was adopted and incorporated into the HEU, would reduce impacts to a less than significant level.

The 2023 EIR found no impacts related to requiring septic tanks or alternative wastewater disposal systems.

Impacts of the Proposed Project

As with any site in the Bay Area region, development facilitated by the proposed project would be susceptible to strong seismic ground shaking in the event of a major earthquake. The three corridors are located in a seismically active region and are located proximate to the Hayward Fault, Chabot Fault, and Wildcat Fault, which run east of the three corridors. Although the proposed project would facilitate the development of up to 4,399 more units compared to what was analyzed in the 2023 EIR, the proposed project would not facilitate development on or adjacent to the faults; therefore, fault rupture risks would

not be increased by the proposed project. In addition, the proposed project would promote infill development which would 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. Future development would be required to conform to the CBC adopted pursuant to Title 19, Chapter 28 of the BMC, which includes requirements for foundation and structural design to resist seismic hazards and requirements for geotechnical investigation based on soil conditions and proposed construction methods in specific instances. New projects 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 three corridors 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. Therefore, similar to the adopted HEU, earthquake-related impacts would be less than significant with adherence to State and local regulations.

As shown in Figure 9, the Solano Avenue Corridor is located within a very low risk liquefaction zone, and is not located within a landslide risk area. As shown in Figure 10, the North Shattuck Avenue Corridor is located within a very low risk liquefaction zone, and is not located within a landslide risk area. As shown in Figure 11, the College Avenue Corridor is located within a low risk liquefaction zone and is not located within a landslide risk area. Overall, none of the corridors are located in areas of high liquefaction or landslide risk and impacts associated with landslides or liquefaction would be less than significant.

As shown on the U.S. Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS) Soil Map, the Solano Avenue, North Shattuck Avenue, and College Avenue Corridors all have moderate expansiveness (shrink-swell potential) (USDA 2025). Although the proposed project would increase potential buildout in the three corridors compared to what was analyzed in the 2023 EIR by up to 4,399 units, 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 three corridors susceptible to expansive or other unstable soils 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. Additionally, as discussed in the 2023 EIR, future projects requiring 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 three corridors 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. Therefore, impacts related to expansive and/or unstable soils would be less than significant with adherence to State and local regulations, similar to the adopted HEU.

Figure 9 Solano Avenue Corridor Geologic Hazards

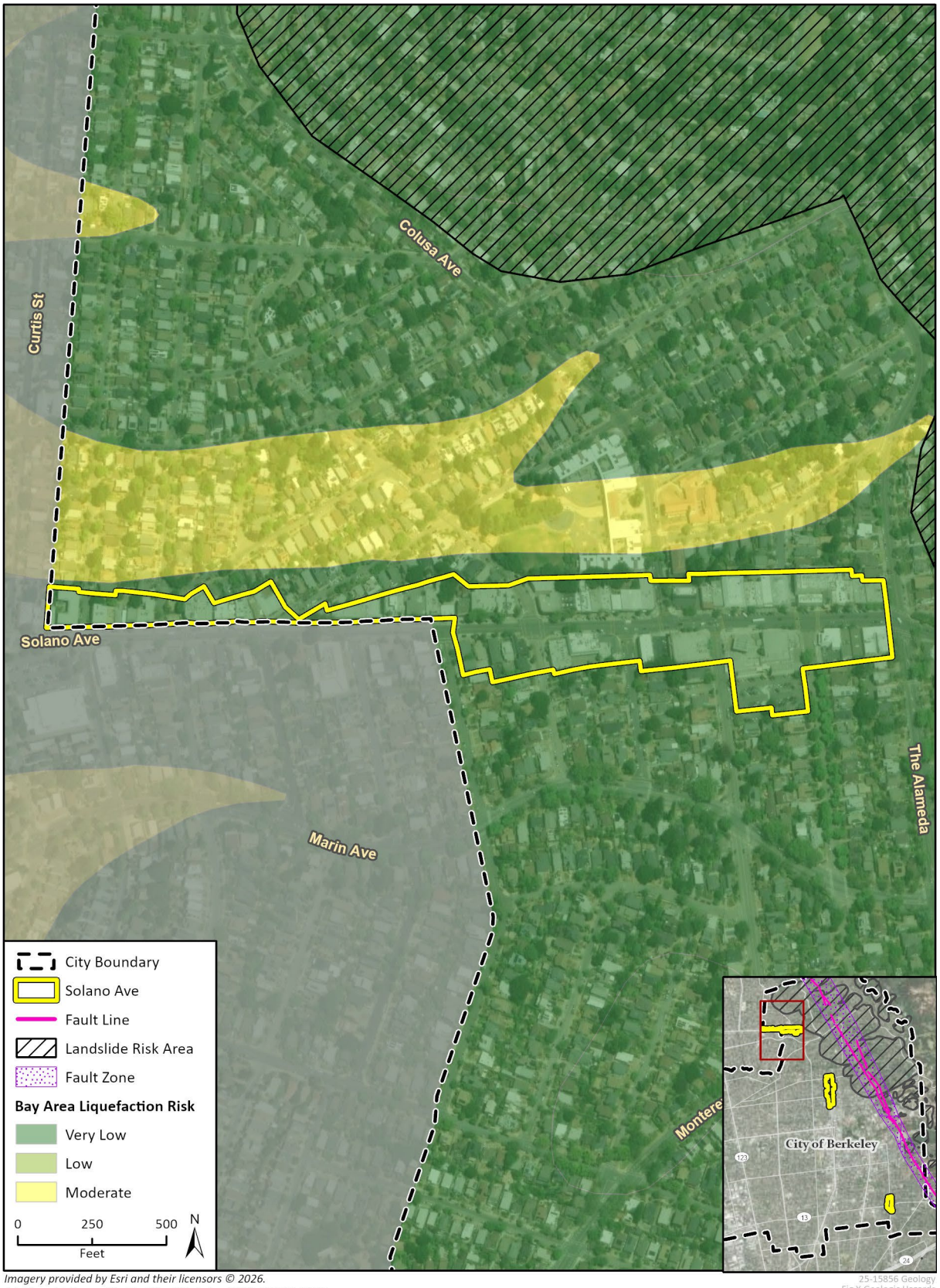
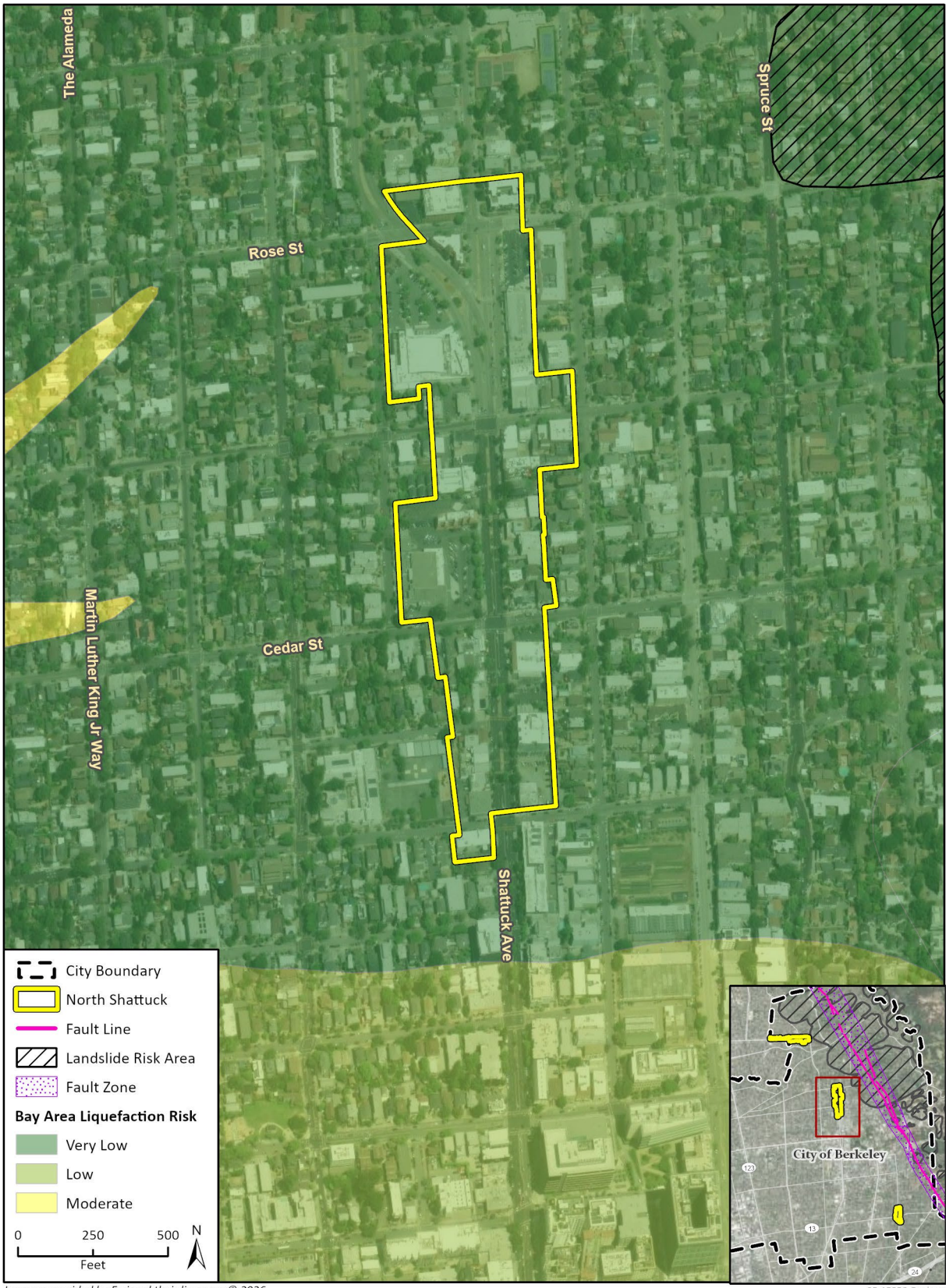


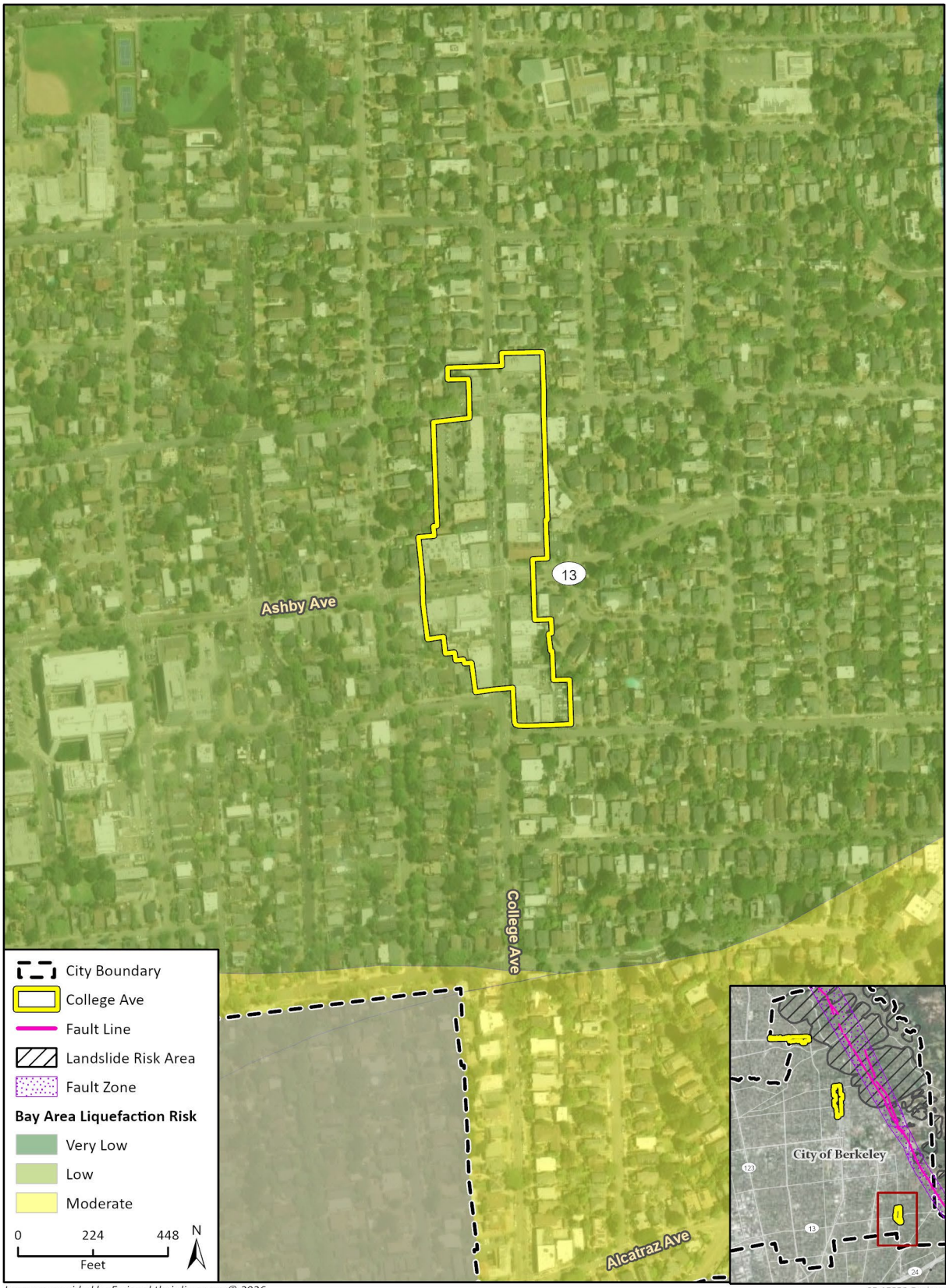
Figure 10 North Shattuck Avenue Corridor Geologic Hazards



Imagery provided by Esri and their licensors © 2026.
Additional data provided by City of Berkeley, 2025; CADOC, 2025.

25-15856 Geology
Fig X Geologic Hazards

Figure 11 College Avenue Corridor Geologic Hazards



As mapped by the NRCS, the Solano Avenue Corridor is composed primarily of Los Osos-Millsholm complex, 9 to 30 percent slopes and Urban land-Tierra complex, 5 to 15 percent slopes, and the North Shattuck Avenue and College Avenue Corridors are composed primarily of Urban land-Tierra complex, 2 to 5 percent slopes (USDA 2025). All three corridors have low potential for erosion-related hazards, which limits the potential for substantial soil erosion. Construction activities of future development 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 CGP is reinforced through the BMC Chapter 21.40 which requires applicants to comply with grading, erosion and sedimentation control plan regulations on file with the Public Works Department. Therefore, impacts related to soil erosion would be less than significant with compliance with State and local regulations, similar to the HEU.

Rincon assessed the paleontological sensitivity of geologic units in Berkeley in the 2023 EIR. Figure 12 through Figure 14 shows geologic units and their respective paleontological sensitivities mapped within the three corridors based on Society of Vertebrate Paleontology (SVP) guidelines and the 2023 EIR (SVP 2010). As shown in Figure 12, the Solano Avenue Corridor includes one geologic unit mapped at the surface: Holocene alluvial fan and fluvial deposits (Qhaf); as shown in Figure 13, the North Shattuck Avenue Corridor includes two geologic units mapped at the surface: Holocene alluvial fan and fluvial deposits (Qhaf) and Pleistocene alluvial fan and fluvial deposits (Qpaf); and as shown in Figure 14, the College Avenue Corridor includes one geologic unit mapped at the surface: Pleistocene alluvial fan and fluvial deposits (Qpaf) (Graymer 2000).

As discussed in the 2023 EIR, Holocene alluvial fan and fluvial deposits (Qhaf) have low paleontological sensitivity, while Pleistocene alluvial fan and fluvial deposits (Qpaf) have high sensitivity. Since a portion of the North Shattuck Avenue Corridor 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), and damage to or destruction of fossils could occur. Additionally, the proposed project would allow increased building heights as described in Appendix A, which could require increased subgrade excavation due to deeper foundations and thereby increase the likelihood of encountering paleontological resources. Nonetheless, although the proposed project could facilitate development of up to a projected 8 stories as outlined in Appendix A and would require incrementally greater depths of disturbance for taller buildings, the building footprint and area of ground disturbance would stay the same as analyzed under the 2023 EIR, and the geographic extent of subsurface disturbance would not expand into new areas that have not already been evaluated. Furthermore, previously adopted Mitigation Measure GEO-1 would be required for future development facilitated by the proposed project, which would ensure the protection of paleontological resources and reduce impacts to a less than significant level.

Figure 12 Geologic Units and Paleontological Sensitivity Underlying the Solano Avenue Corridor

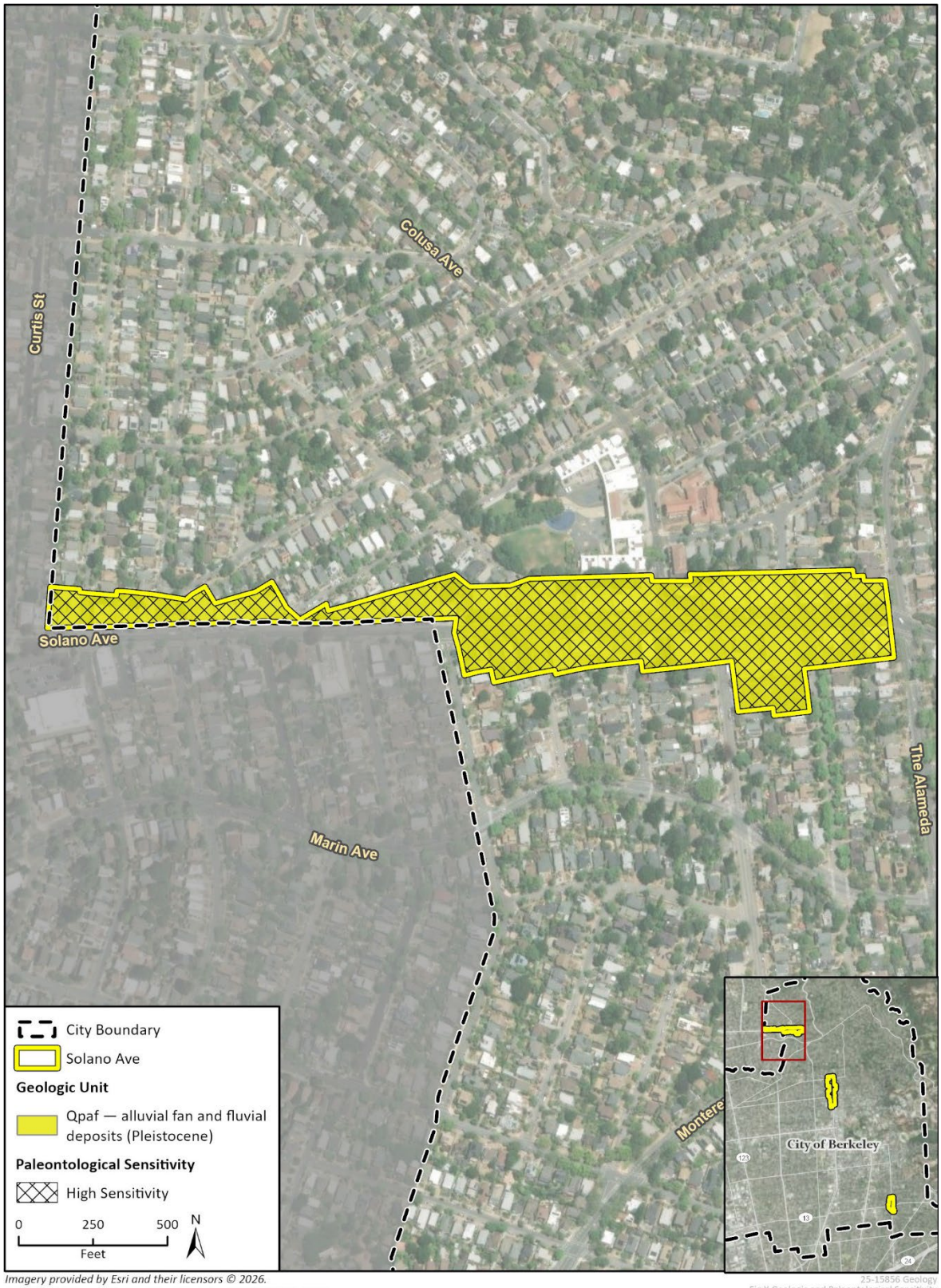


Figure 13 Geologic Units and Paleontological Sensitivity Underlying the North Shattuck Avenue Corridor

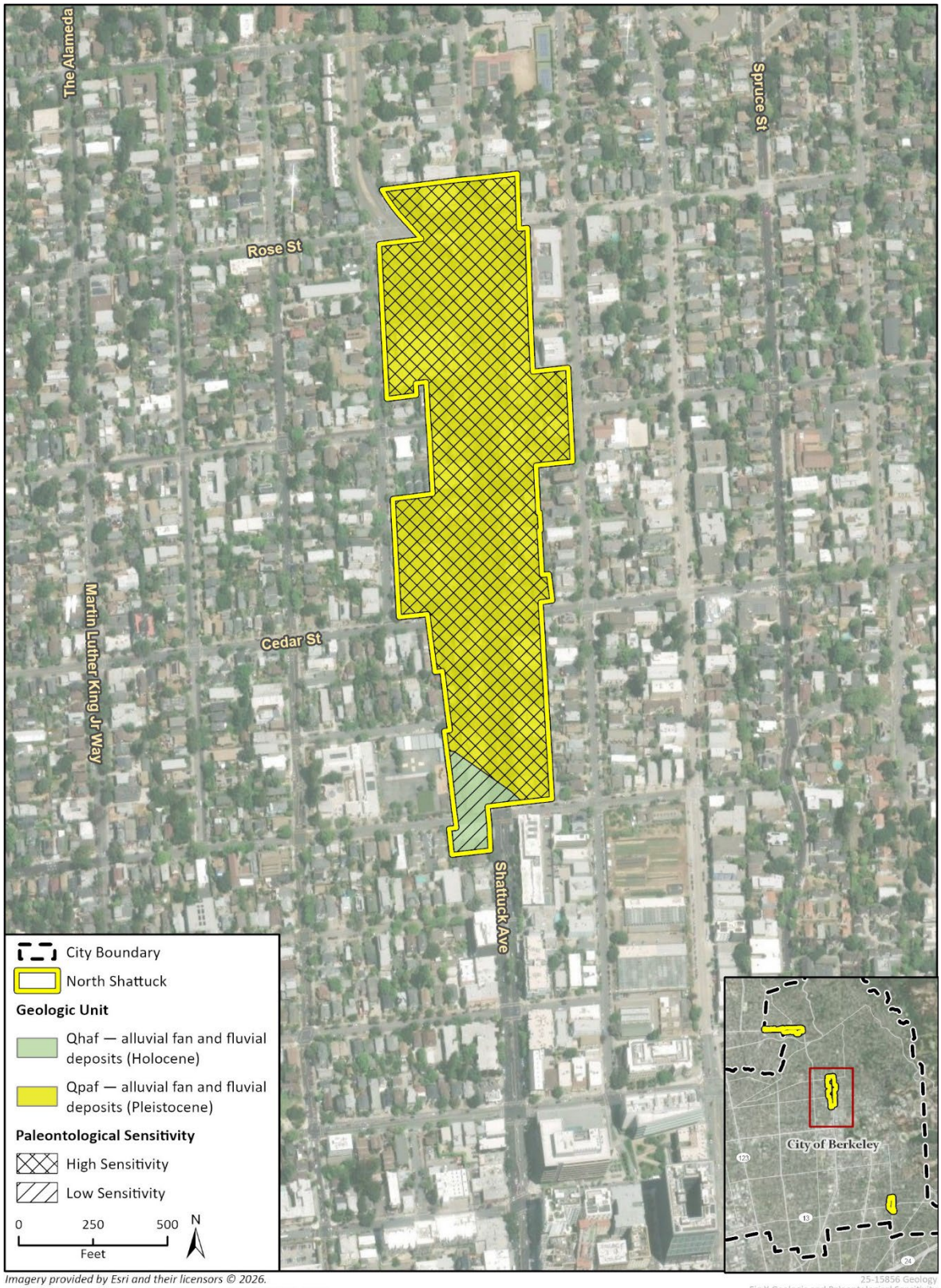
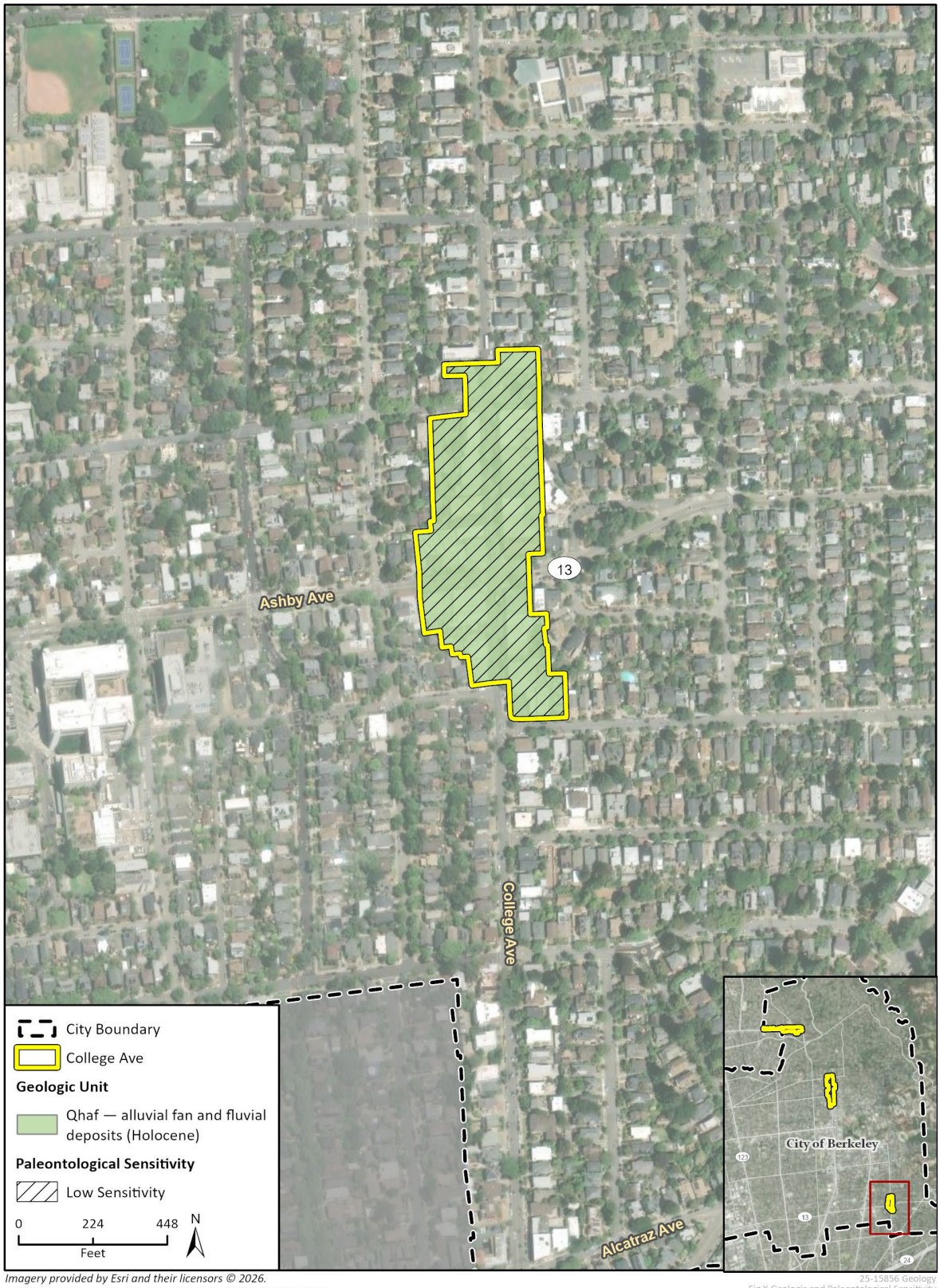


Figure 14 Geologic Units and Paleontological Sensitivity Underlying the College Avenue Corridor



Effects and Mitigation Measures

No new or substantially more severe significant effects would occur related to geology and soils, and no new mitigation measures are required. Previously adopted 2023 EIR Mitigation Measure GEO-1 would remain applicable and would continue to be implemented and monitored.

GEO-1 Protection of Paleontological Resources

If ground disturbance below the level of prior disturbance and into native soils is proposed to occur in areas mapped as Pleistocene alluvial fan and fluvial deposits (Qpaf), Orinda Formation (Tor), or Knoxville Formation (Kjk), then the City shall require the following to be implemented:

- **Retention of Qualified Professional Paleontologist**. Prior to initial ground disturbance, the project applicant shall retain a Qualified Professional Paleontologist, as defined by Society of Vertebrate Paleontology (SVP) (2010), to determine the project's potential to significantly impact paleontological resources according to SVP (2010) standards.

  If underlying formations are found to have a high potential for paleontological resources, the Qualified Professional Paleontologist shall create a Paleontological Mitigation and Monitoring Program, which will be approved by the City and contain the following elements:
- **Paleontological Worker Environmental Awareness Program (WEAP).** Prior to the start of construction, the Qualified Professional Paleontologist or their designee shall conduct a paleontological Worker Environmental Awareness Program (WEAP) training for construction personnel regarding the appearance of fossils and procedures for notifying paleontological staff should fossils be discovered by construction staff.
- **Paleontological Monitoring.** Full-time paleontological monitoring shall be conducted during ground disturbing construction activities (i.e., grading, trenching, foundation work) in sediments assigned a high paleontological sensitivity. Paleontological monitoring shall be conducted by a qualified Paleontological Resources Monitor, as defined by the SVP (2010). The duration and timing of the monitoring will be determined by the Qualified Professional Paleontologist based on the observation of the geologic setting from initial ground disturbance, and subject to the review and approval by the City. If the Qualified Professional Paleontologist determines that full-time monitoring is no longer warranted, based on the specific geologic conditions once the full depth of excavations has been reached, they may recommend that monitoring be reduced to periodic spot-checking or ceased entirely. Monitoring shall be reinstated if any new ground disturbances are required, and reduction or suspension shall be reconsidered by the Qualified Professional Paleontologist at that time. 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 Professional 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 Professional Paleontologist shall complete the following conditions to mitigate impacts to significant fossil resources.

  Upon completion of ground disturbing activity (and curation of fossils if necessary) the Qualified Professional Paleontologist shall prepare a final report describing the results of the paleontological monitoring efforts associated with the project. The report shall include a summary of the field and laboratory methods, an overview of the project geology and paleontology, a list of taxa recovered (if any), an analysis of fossils recovered (if any) and their scientific significance, and recommendations. The report shall be submitted to the City. If the monitoring efforts produced fossils, then a copy of the report shall also be submitted to the designated museum repository.

Conclusion

The proposed project would have less than significant impacts with respect to geology and soils. No substantial changes have occurred that require major revisions to the 2023 EIR. There is no new information indicating that the proposed project would have new significant impacts or substantially more severe significant impacts with respect to geology and soils than were identified in the 2023 EIR.

None of the conditions listed in *CEQA Guidelines* Section 15162 requiring preparation of a subsequent EIR have been met.

5.7 Greenhouse Gas Emissions

Impacts Identified in the 2023 EIR

As discussed in Section 4.7, *Greenhouse Gas Emissions*, of the 2023 EIR, full buildout of the HEU would generate 81,985 MT of CO_2e per year, equating to an increase of 1.7 MT of CO_2e per service population per year. As analyzed in the 2023 EIR, the HEU's greenhouse gas (GHG) emissions of 1.7 MT of CO_2e per service population per year would not exceed the Air District's target of 3.7 MT CO_2e per service population at the plan-level.[4] Therefore, impacts related to GHG emissions were found to be less than significant.

The 2023 EIR found that the HEU would be consistent with GHG reduction goals and policies in the 2017 Scoping Plan, Plan Bay Area 2050, the City's General Plan, and the City's Climate Action Plan (CAP). Therefore, the 2023 EIR determined that the HEU would have less than significant impacts related to conflicting with an applicable GHG reduction plan.

Impacts of the Proposed Project

The City of Berkeley adopted a CAP in 2009 with the goal of reducing communitywide GHG emissions by 80 percent below 2000 levels by 2050. While the CAP is not considered a "qualified greenhouse gas reduction plan" for the purposes of streamlining GHG emissions analysis under CEQA, it is actively used by the City for guiding GHG emission reduction efforts. Since publication of the CAP, the City has revised the CAP to add the following climate commitments/goals in support of achieving the goals of the 2009 Plan:

- 100 percent renewable electricity by 2035
- Net-Zero Carbon Emissions by 2045, in alignment with Governor Brown's Executive Order B-55-18
- Declared a Climate Emergency and resolved to become a Fossil Fuel Free City

Since the certification of the 2023 EIR and approval of the HEU, the Air District has updated its GHG emissions thresholds of significance. The Air District thresholds now allow two options for plan-level projects to meet the significance thresholds (the Air District 2023):

1. Meet State's goals to reduce emissions to 40% below 1990 levels by 2030 and carbon neutrality by 2045; or
2. Be consistent with a local GHG reduction strategy that meets the criteria under State CEQA Guidelines Section 15183.5(b).

According to the *CEQA Guidelines*, projects can tier from a qualified GHG reduction plan, which allows for project-level evaluation of GHG emissions through the comparison of the project's consistency with the GHG reduction policies included in a qualified GHG reduction plan. The City of Berkeley does not currently have a qualified GHG reduction plan, however, and this approach is not currently available.

As discussed in the 2023 EIR, the Air District's plan-level efficiency threshold of 6.6 MT CO_2e per service population per year was first reduced to the SB 32's 2030 target of 40 percent below 1990 emissions, which would result in a threshold of 4.0 MT CO_2e per service population per year. However, since that

[4] The Air District developed plan-level thresholds of significance to assist lead agencies with determining significance for long-range local and regional plans. Local long-range plans are discretionary, program-level planning activities, such as general plans and general plan elements, specific plans, area plans, community plans, congestion management plans, and annexations of lands and service areas. The proposed project involves Zoning Ordinance and General Plan amendments to facilitate housing in the three corridors. Plan-level thresholds are used instead of project-level thresholds because the proposed project constitutes as a programmatic document and applies to the three corridors.

time, the State has set additional emissions reductions targets of net-zero carbon emissions by 2045. To set a significance threshold that would achieve this 2045 target, the 4.0 MT CO_2e per service population per year threshold was reduced by 0.27 MT CO_2e per year to reach 2045's goal of zero MT CO_2e per population per year. Based on the trajectory to achieve this 2045 target, in the year 2031 this would equate to an interpolated threshold of 3.7 MT CO_2e per service population per year threshold. Therefore, if the proposed project would result in GHG emissions of less than 3.7 MT CO_2e per service population per year, the project would be consistent with the Air District's 2022 plan-level GHG threshold of meeting the State's goals to reduce emissions to 40 percent below 1990 levels by 2030 and carbon neutrality by 2045.

Again, as noted above, the 2023 EIR concluded that the HEU's greenhouse gas (GHG) emissions of 1.7 MT of CO_2e per service population per year would not exceed the Air District's target of 3.7 MT CO_2e per service population at the plan-level. However, in reaching that conclusion, the 2023 EIR assumed that 90 percent of new development would be all-electric pursuant to Chapter 12.80 of the BMC. Since adoption of the 2023 EIR, Chapter 12.80 of the BMC, which prohibited the installation of natural gas infrastructure in newly constructed buildings, was repealed on June 4, 2024 by Ordinance 7909-NS. As discussed in the GHG Memorandum prepared by Rincon for the San Pablo Avenue Specific Plan Addendum, new building electrification data has suggested that 30 to 40 percent of new developments would include natural gas connections, resulting in approximately 60 to 70 percent electrification of development facilitated by the HEU (Appendix D). Based on this newly available data reflecting increased natural gas demand than previously analyzed, GHG emissions for all units modeled as part of the Housing Element EIR were recalculated by Rincon Consultants as part of the San Pablo Avenue Specific Plan project with the revised assumption that up to 60 percent of new development would be all-electric and the remainder of units would include natural gas connections. As discussed in the GHG Memorandum for the San Pablo Avenue Specific Plan Addendum, once adjusted to include the new 60% electrification assumption, the HEU would generate approximately 85,759 MT CO_2e per year. Therefore, the adjustment from the 2023 EIR's original 90% electrification assumption to this Addendum's 60% electrification assumption would result in an increase of 3,774 MT of CO_2e per year, or 4.6 percent, compared to the full buildout analyzed under the 2023 EIR (Appendix D).

This Addendum calculates the $MTCO_2e$ per service population for the proposed project, which, as explained below, is lower than for the HEU as a whole in part because all of the development anticipated with the proposed project would place residents near transit and within walking and biking distance of commercial uses and services. Proposed construction activities, energy use, daily operational activities, and mobile sources (traffic) associated with the proposed project would generate GHG emissions. CalEEMod was used to calculate emissions resulting from construction and long-term operation, taking into account the revised natural gas usage scenario used in the San Pablo Avenue Specific Plan Addendum (see Appendix E for model output).

Construction Emissions

Emissions generated from construction of full buildout of development facilitated by the HEU are estimated to be 4,717 MT of CO_2e per year.[5] However, because the Air District does not have a recommended threshold for construction-related GHG emissions, the estimated emissions associated with construction are not included in Table 6.

Operational Indirect and Stationary Direct Emissions

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

[5] Construction emissions were determined assuming the 4,399 units were built as one continuous project using CalEEMod defaults. Construction emissions for future projects would be based on the timing and size of individual projects. 4,717 MT of CO_2e is conservatively based on the highest year for construction emissions.

Mobile Emissions

As shown in Table 6 below, the additional 4,399 units facilitated by the proposed project would generate approximately 12,679 $MTCO_2e$ per year.

Area Source Emissions

CalEEMod was used to calculate direct sources of air emissions associated with the proposed project. These include consumer product use and landscape maintenance equipment. Area emissions are estimated at 55 $MTCO_2e$ per year.

Energy Use Emissions

Operation of the proposed project would consume both electricity and natural gas. The generation of electricity through combustion of fossil fuels emits CO_2, and to a smaller extent, N_2O and CH_4. Consistent with the approach used in the San Pablo Avenue Specific Plan Addendum, based on the newly available data reflecting a greater amount of natural gas demand than previously analyzed, GHG emissions for all units modeled as part of the project were calculated in CalEEMod with the assumption that up to 60 percent of new development would be all-electric and the remainder of units would include natural gas connections. GHG emissions from energy use are estimated at 2,227 $MTCO_2e$ per year.

Water Use Emissions

Based on the amount of electricity generated to supply and convey water for the project, the proposed project would generate an estimated 307 $MTCO_2e$ per year.

Solid Waste Emissions

Based on the estimate of GHG emissions from solid waste generated by the proposed project, as it decomposes solid waste associated with the proposed project would generate approximately 900 $MTCO_2e$ per year.

Refrigerant Emissions

Based on the estimate of GHG emissions from refrigerants used for the project, the proposed project would generate an estimated 1 $MTCO_2e$ per year.

Combined Emissions

As shown in Table 6, the annual emissions associated with the additional development under the proposed project would total approximately 16,169 $MTCO_2e$ per year. As discussed in *Population and Housing*, of this Addendum, below, using the 2023 Housing Element estimate of 2.5 person per household, the proposed project would result in 10,998 new residents and therefore the service population for the purposes of the analysis is 10,998 residents. As shown in Table 6, the $MTCO_2e$ per service population for the proposed project would be 1.5 MT CO_2e per service population. Therefore, these emissions would not exceed the 2023 EIR's the Air District 2031 efficiency target of 3.7 MT CO_2e per service population used in the 2023 EIR's analysis. Furthermore, the proposed project's annual emissions represent a conservative estimate since it does not take into account the reduction in 110,788 square feet of commercial uses. Commercial land uses typically generate higher levels of energy consumption, area source emissions, and vehicle trips per square foot compared to residential uses. Therefore, removing a substantial amount of commercial space would likely offset a portion of the projected emissions associated with the residential uses.

In addition, as shown in Table 6, when combined with the GHG emissions from the HEU as analyzed in the 2023 EIR and also taking into account 60 percent electrification, the $MTCO_2e$ per service population of 1.7 would not exceed the threshold of 3.7 $MTCO_2e$ per service population. The MT CO_2e per service population of 1.5 for the proposed project is lower than the MT CO_2e per service population of 1.8 for the

HEU plus proposed project because the proposed project would place residents within multiple bus routes and within walking and biking distance of commercial uses and services which would reduce usage of single-occupancy vehicles and VMT. Therefore, this impact would be less than significant, similar to what was analyzed for the HEU in the 2023 EIR.

Table 6 Operational GHG Emissions

Proposed Project Emissions Source	Annual Emissions (MT of CO2e/year)
Mobile	12,679
Area	55
Energy	2,227
Water	307
Waste	900
Refrigerants	1
Total Emissions	**16,169**
Proposed Project Service Population	10,998
Proposed Project Emissions Per Service Population ($MTCO_2e$/Service Population)[1]	**1.5**
Air District Interpolated Plan-level 2031 Target (MTCO2e/Service Population)	3.7
Proposed Project Exceeds Threshold?	**No**
Total Emissions (HEU plus Proposed Project)[2]	**101,928**
Total Service Population (HEU plus Proposed Project)[3]	58,441
Total Emissions Per Service Population (HEU plus Proposed Project) ($MTCO_2e$/Service Population)[4]	**1.7**
Air District Interpolated Plan-level 2031 Target (MTCO2e/Service Population)	3.7
Exceeds Threshold?	**No**

[1] 16,169 / 10,998 = 1.5 $MTCO_2e$/Service Population

[2] 85,759 MT CO_2e for HEU with 60 percent electrification + 16,169 MT CO_2e for proposed project = 101,928 MT CO_2e

[3] 47,443 population in 2023 EIR + 10,998 new residents under proposed project = 58,441 people

[4] 101,928 / 58,441 = 1.7 $MTCO_2e$/Service Population

See Table 2.5 "Operations Emissions by Sector, Unmitigated" emissions. CalEEMod worksheets in Appendix E.

Also similar to the HEU, development facilitated by the proposed project would comply with the latest Title 24 Green Building Code and Building Efficiency Energy Standards. As discussed above under *Air Quality*, the net percentage VMT increase associated with the proposed project (approximately 55.3 percent when compared to 2020 Without Project) would be less than the net percentage population increase (approximately 59.2 percent when compared to 2020 Without Project). Therefore, on a per population basis, the proposed project would have the effect of reducing VMT and therefore GHG emissions associated with fossil fuel use.

As discussed in the 2023 EIR, the HEU would be consistent with the 2017 Scoping Plan, which provides a framework towards reaching statewide per capita goals of 6 MT CO_2e by 2030 and 2 MT CO_2e by 2050; Plan Bay Area 2050, a State-mandated, integrated long-range transportation, land-use, and housing plan with 35 strategies to improve the transportation system, provide affordable housing, and reduce climate emissions; and the City's General Plan and Climate Action Plan, which includes policies, actions, and measures aimed at reducing GHG emissions. Although the proposed project would facilitate the development of up to 4,399 more units compared to the HEU, all the units would be concentrated in TPAs which would further reduce reliance on personal vehicles and encourage usage of alternative modes of transport. Additionally, the proposed project would result in the reduction in 110,788 square feet of

commercial uses which would further reduce GHG emissions from operations and VMT. Multiple bus routes such as the AC Transit bus routes 18, 27, G, 72, 72L, 72M, and 800 are located along the Solano Avenue Corridor; bus routes 7, 18, and FS are located along the North Shattuck Avenue Corridor; and bus routes 22, 27, 51B, 604, 605, and 851 are located along the College Avenue Corridor. Development facilitated by the proposed project would also be required to comply with EV requirements pursuant to BMC Section 19.37.040, which currently requires 40 percent of parking spaces to be equipped with low power Level 2 EV charging receptacles at all new multi-family developments; and for new one- and two-family dwelling units to minimum 40-ampere 208/240-volt dedicated EV branch circuit in close proximity to the proposed location of an EV charger at the time of original construction in accordance with the California Electrical Code. Future development would also be subject to BMC Chapter 19.37, which requires diversion of 65 percent diversion of construction/demolition waste, and recycling and salvage of 100 percent of excavated soil and land-clearing debris, 100 percent of concrete, and 100 percent of asphalt during construction and demolition activities. Ava would be the electricity supplier for the proposed project and would enroll residential customers in their Renewable 100 service plan, which provides 100 percent of electricity from renewable energy sources. Therefore, similar to the HEU, the proposed project would be consistent with goals and policies of the 2017 Scoping Plan, Plan Bay Area 2050, the City's General Plan, and the City's CAP, and impacts would be less than significant.

Effects and Mitigation Measures

No new or substantially more severe significant effects related to GHG emissions would occur and no new mitigation measures are required.

Conclusion

The proposed project would have less than significant impacts with respect to GHG emissions. No substantial changes have occurred that require major revisions to the 2023 EIR. There is no new information indicating that the proposed project would have new significant impacts or substantially more severe significant impacts with respect to GHG emissions than were identified in the 2023 EIR. None of the conditions listed in *CEQA Guidelines* Section 15162 requiring preparation of a subsequent EIR have been met.

5.8 Hazards and Hazardous Materials

Impacts Identified in the 2023 EIR

As discussed in Section 4.8, *Hazards and Hazardous Materials*, of the 2023 EIR, construction of development facilitated by the HEU could result in an increase in the overall routine, transport, use, and disposal of hazardous materials in Berkeley. However, 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). The California Department of Toxic Substances Control (DTSC) also regulates hazardous wastes under the authority of Resource Conservation and Recovery Act (RCRA) and in accordance with the California Hazardous Waste Control Law (California Health and Safety Code, Division 20, Chapter 6.5) and the Hazardous Waste Control Regulations (California Code of Regulations, Title 22, Divisions 4 and 4.5). The 2023 EIR found that portions of Berkeley are located in Environmental Management Areas (EMA) as identified by the City's Toxics Management Division (TMD).[6] As a Certified Unified Program Agency (CUPA) for the City of Berkeley, the TMD is responsible for identifying areas known or suspected to have groundwater contamination that could result in potential health and environmental impacts, and development in the EMA would require project review by the TMD prior to issuance of permits. Future development projects facilitated by the HEU would be subject to the

[6] EMAs can be located using the City's Environment GIS portal: https://berkeley.maps.arcgis.com/apps/webappviewer/index.html?id=2c7dfafbb1f64e159f4fdf28a52f51c6&showLayers=Berkeley%20Parcels;Environment.

City's Standard COA related to Environmental Site Assessments, Soil and Groundwater Management Plans, Building Materials Surveys, and Hazardous Materials Business Plans, which would reduce impacts to a less than significant level.

The 2023 EIR determined that operation of the HEU would not risk exposing the public to hazardous materials because residential uses do not typically use hazardous materials other than small amounts for cleaning and landscaping. Although the HEU would increase the number of residents near transportation corridors where hazardous materials may be routinely transported, as discussed above the transportation of hazardous materials is regulated by the DOT. Additionally, since the HEU would facilitate residential development within areas of Berkeley where hazardous materials could be stored or used, such as near mixed-use or industrial areas, the potential of residents being exposed to hazardous materials may be increased. However, future development would be required to adhere to the California Accidental Release Prevention (CAL ARP) program as required by the California Environmental Protection Agency (Cal EPA) (Cal EPA 2023), develop a Hazardous Materials Business Plan enforced by Berkeley's TMD (City of Berkeley 2023b), and adhere to the Local Hazard Mitigation Plan (LHMP) established by Alameda County and the City of Berkeley (City of Berkeley 2019), which aim to minimize community exposure to hazardous and potentially hazardous materials by avoiding toxic cleaning and building materials and products in civic facilities and services; providing information, opportunities, and incentives to the community for proper disposal of toxic materials; encouraging non-toxic materials and products in homes and businesses as an alternative to products containing potentially hazardous materials; and providing procedures to follow in the event of a spill. Compliance with these policies would further prepare the City, reduce the risk of spills, and protect the public in the event of an accidental spill or exposure. Future development would also be required to comply with policies and programs in the Disaster Preparedness and Safety Element, Environmental Management Element, and the Housing Element of the City's General Plan such as Policies S-15, EM-12, EM-13, and EM-15, as well as Housing Element Programs 16, 21, 22, and 25, impacts would be less than significant.

The 2023 EIR determined that although 122 housing inventory sites listed in the HEU would be located within a 0.25-mile radius of Berkeley's existing schools and childcare facilities, impacts related to the accidental release of hazardous materials and exposure to these materials would be less than significant with adherence to the above-referenced State and local laws, regulations and plans. The 2023 EIR stated that Berkeley has 361 documented sites containing or potentially containing hazardous materials contamination in underlying soil and/or groundwater that have not received regulatory closure. Development facilitated by the HEU could involve ground disturbance on sites where soil, soil vapor, or groundwater contamination is present such that hazardous materials are released, exposing construction workforce and nearby occupants to hazardous materials. However, development near hazardous locations would be preceded by investigation, remediation (cleanup), and monitoring, as necessary, under the supervision of the City's TMD, RWQCB, or DTSC before construction activities begin. Furthermore, if an unidentified underground storage tank (UST) is uncovered or disturbed during construction, it would be removed under permit, and potential risks due to residual contamination would be minimized by managing the site according to existing standards contained in Division 20, Chapters 6.7 and 6.75 (Underground Storage Tank Program) of the California Health and Safety Code as enforced and monitored by the City's TMD. Similarly, if groundwater contamination is identified, characterization of the vertical and lateral extent of the contamination and remediation activities would be required by the RWQCB prior to the commencement of new construction activities that would disturb the subsurface. If contamination exceeds regulatory action levels, the developer would be required to undertake remediation prior to grading and development under the supervision of the RWQCB, depending upon the nature of identified contamination to levels that do not pose an unacceptable risk for the intended land use. Therefore, impacts related to hazardous materials sites would be less than significant.

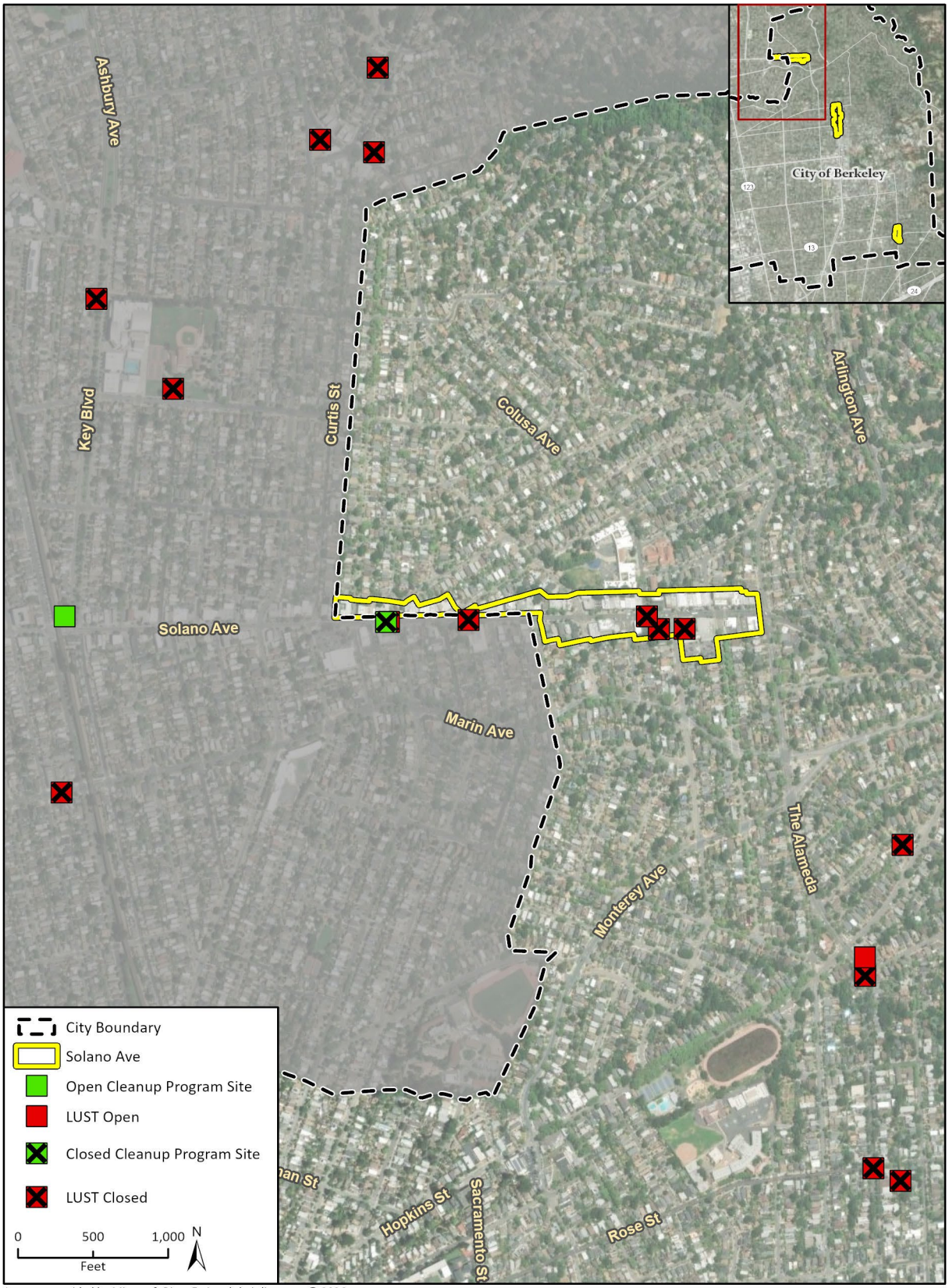
Development facilitated by the HEU also would be required to comply with Policy T-28 of the City's General Plan which identifies actions for emergency access. Development would also be required to conform to the latest Fire Code requirements, including provisions for emergency access. Because there are no public or private airports within Berkeley, the 2023 EIR determined that the HEU would not result in

impacts related to a safety hazard or excessive noise hazards within airport land use plan areas or in proximity to airports.

Impacts of the Proposed Project

Much of the three corridors are within the City's identified EMA, which includes areas known or suspected to have groundwater contamination issues. Within the Solano Avenue Corridor, the EMA includes parcels between The Alameda and Tacoma Avenue; within the North Shattuck Avenue Corridor, the EMA includes parcels between Cedar Street and Virginia Street; and within the College Avenue Corridor, the EMA includes parcels between Russell Street and Webster Street (City of Berkeley 2026). As shown in Figure 15 to Figure 17, a search of the DTSC's EnviroStor database and the SWRCB's GeoTracker database (conducted in July 2026), which contain information on properties in California where hazardous substances have been released or where the potential for a release exists, identified one closed cleanup program site and five closed LUST sites within the Solano Avenue Corridor; one open cleanup program site and one closed LUST sites within the North Shattuck Avenue Corridor; and one open cleanup program site and two closed LUST sites within the College Avenue Corridor. The former Norge Laundry and Dry Cleaning Village site located at 2089-2091 Rose Street in the North Shattuck Avenue Corridor was identified as a DTSC Cleanup Program Site in need of evaluation as of 2025. Dry cleaning solvent has been identified in soil and groundwater below the existing building and partially outside the building, and indoor air data confirm detections of tetrachloroethylene (PCE) above the applicable ESL (SWRCB 2026a). The former College Cleaners site located at 2942 College Avenue in the College Avenue Corridor was identified as a DTSC Cleanup Program Site in need of evaluation as of 2021. Four USTs were removed from the site in 1993 and 1995, which were used to store Stoddard solvent. PCE was also stored at the site (SWRCB 2026b). Future development of these two sites would be subject to DTSC oversight and regulation, City review, and other existing environmental laws related to cleanup of hazardous materials. Cleanup of the site would have to be certified as suitable for the intended land use 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.

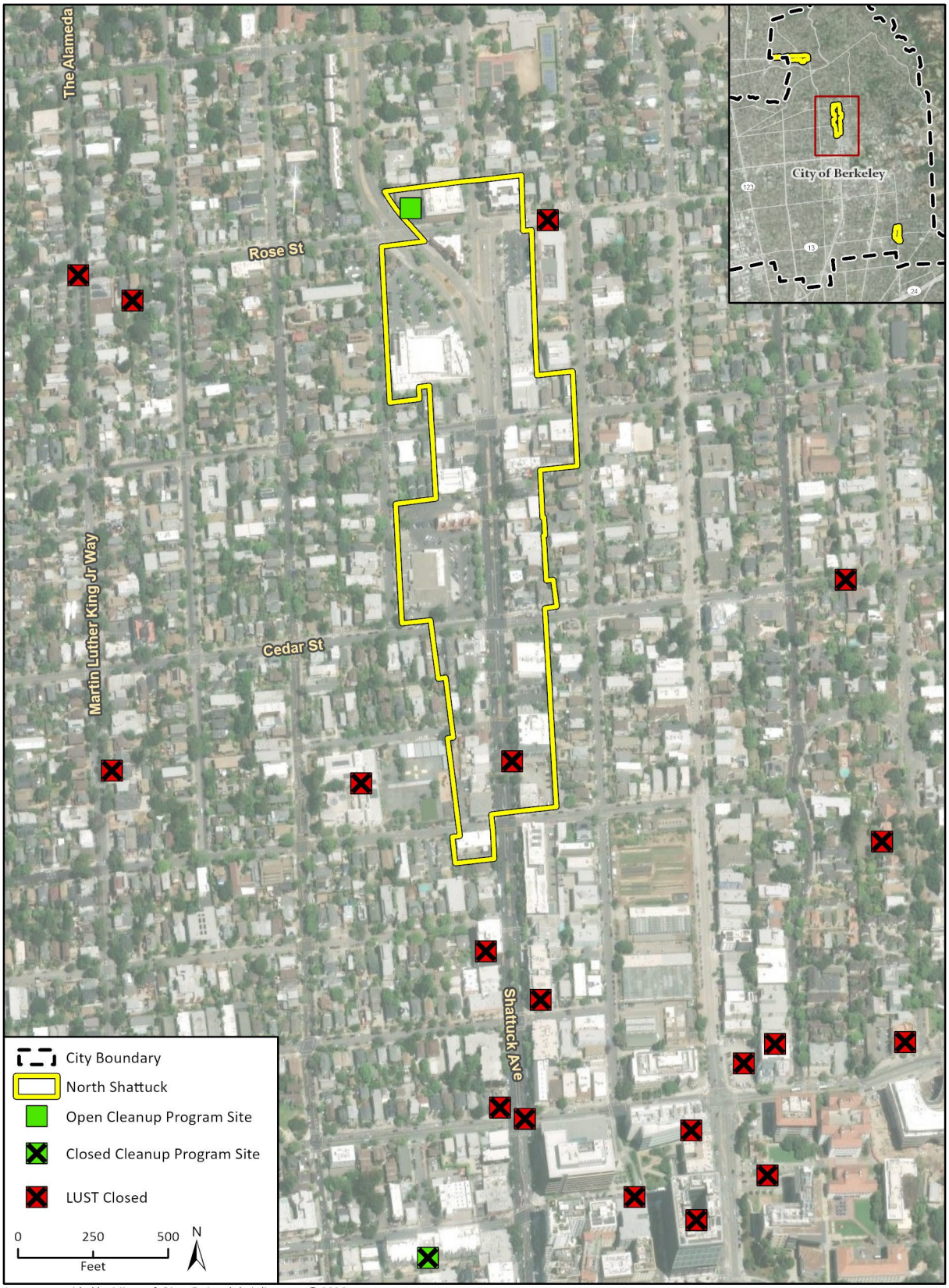
Figure 15 Solano Avenue Corridor Hazardous Sites



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Additional data provided by City of Berkeley, 2025; SWRCB, 2025.

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Fig X Cleanup Sites

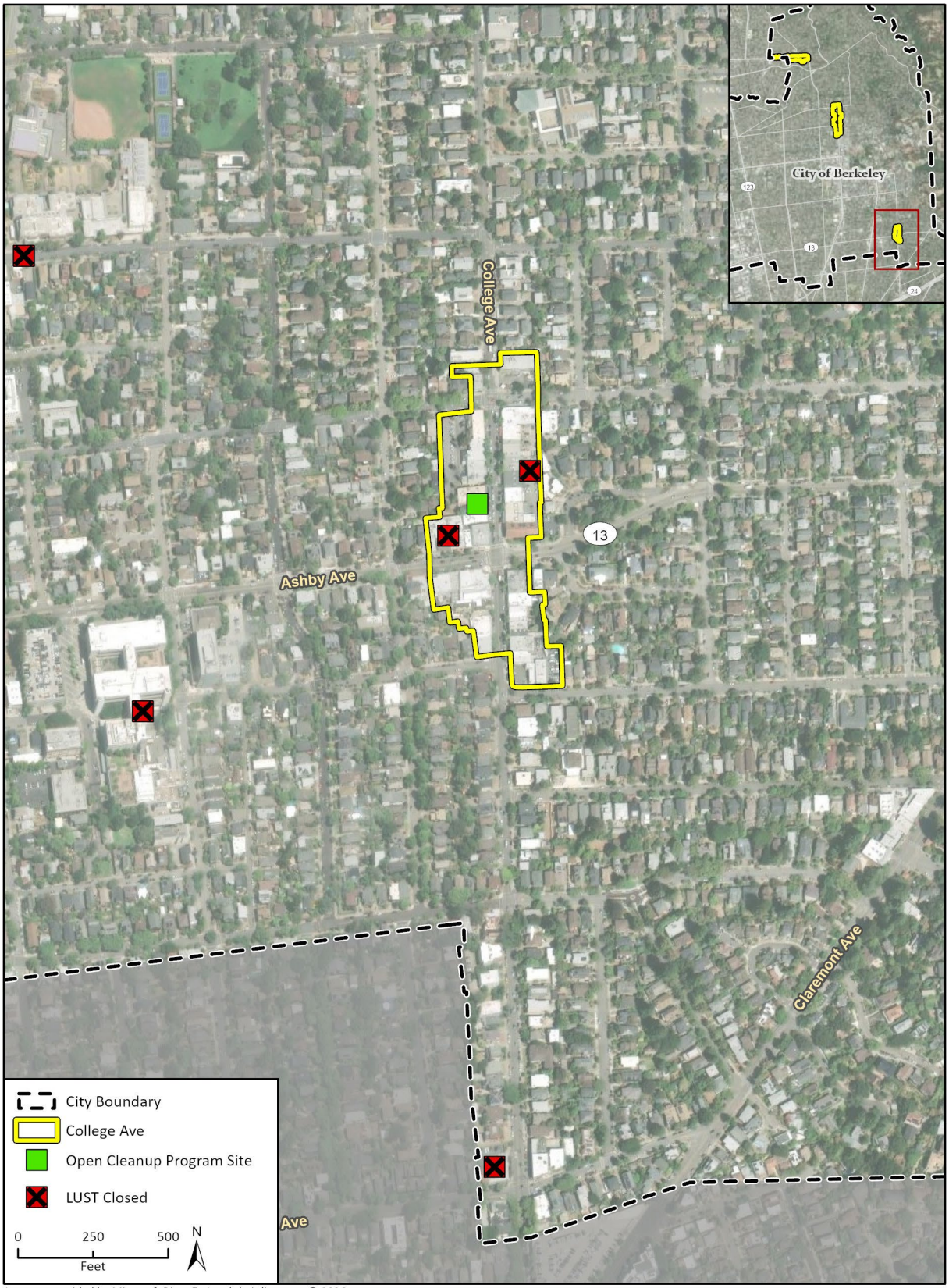
Figure 16 North Shattuck Avenue Corridor Hazardous Sites



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Additional data provided by City of Berkeley, 2025; SWRCB, 2025.

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Fig X Cleanup Sites

Figure 17 College Avenue Corridor Hazardous Sites



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Additional data provided by City of Berkeley, 2025; SWRCB, 2025.

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Fig X Cleanup Sites

Similar to the HEU, development facilitated by the proposed project would be subject to the City's Standard COA. With adherence to the City's Standard COA, the City's TMD would evaluate projects to determine if Phase I/Phase II Environmental Site Assessments are required to characterize potential contamination. If contamination is present, applicants would be required to develop a soil and groundwater management plan, a type of construction management plan that would identify procedures for soil and groundwater management and disposal to address hazards during construction.

The proposed project would allow for development of up to 4,399 more units and up to a projected 8 stories in the three corridors compared to the buildout analyzed in the 2023 EIR (Appendix A), and therefore would potentially involve transport, use, or dispose of more hazardous materials than what was analyzed in the 2023 EIR during construction, and would facilitate increased development on sites that are possibly contaminated and inactive, undergoing evaluation, and/or undergoing corrective action, where grading or excavation may result in the transport, disposal, and release of hazardous materials if they are discovered and removed from the site. Nonetheless, although the proposed project would require incrementally greater depths of disturbance for taller buildings, the building footprint and area of ground disturbance would stay the same as analyzed under the 2023 EIR, and the geographic extent of subsurface disturbance would not expand into new areas that have not already been evaluated. Furthermore, future development would be required to comply with the same federal, State, and local laws and regulations as discussed in the 2023 EIR, such as DOT regulations (U.S. DOT Hazardous Materials Transport Act, 49 Code of Federal Regulations), California Hazardous Waste Control Law (California H&SC Division 20, Chapter 6.5), and Hazardous Waste Control Regulations (California Code of Regulations, Title 22, Divisions 4 and 4.5). Although most of the three corridors are within the City's EMA, development within the EMA would be subject to project review by the TMD prior to issuance of permits. Future projects also would be subject to the City's Standard COA regarding Environmental Sites Assessments, Soil and Groundwater Management Plans, Building Materials Surveys, and Hazardous Materials Business Plans, which would reduce impacts to a less than significant level.

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 Standard COAs 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/

Similar to the HEU, the proposed project's changes to the adopted HEU would facilitate the development of residential uses, which 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. The proposed project would also result in a decrease of 110,788 square feet of commercial uses, further reducing the amount of hazardous materials used.

These materials would not be different from chemicals and solvents already in wide use throughout the three corridors, and the use of such products would be required to comply with all applicable laws and regulations regarding the disposal of household waste. New housing units would be located in areas near major transportation corridors and existing residential and commercial development. Hazardous materials may be transported into and throughout the three corridors on Solano Avenue, North Shattuck Avenue, College Avenue, and collector and local streets. The proposed project would increase the number of residents near transportation corridors where hazardous materials may be routinely transported compared to the HEU. However, as discussed in the 2023 EIR, compliance with existing federal, State, and local laws and regulations would reduce risks related to the handling and storage of hazardous materials would minimize the risk of the public's potential exposure to these materials. Therefore, impacts from a hazard to the public or the environment due to routine transport, use or disposal of hazardous materials, or from accidental release or exposure to hazardous materials would be less than significant, similar to the HEU.

In the Solano Avenue Corridor, the West Wind School, the Thousand Oaks Elementary School, the Happy Day Montessori Preschool, the Rising Sun Montessori Preschool, and the Marin Elementary School are located within 0.25 miles of the corridor. In the North Shattuck Avenue Corridor, the New School of Berkeley, Berkeley Arts Magnet School, Bayhill High School, The Berkeley School Early Childhood Center, the School of the Madeline, and Martin Luther King Jr. Middle School are located within 0.25 miles of the corridor. In the College Avenue Corridor, the Monteverde School, the Hearts Leap Preschool, Maybeck High School, Emerson Elementary School, Emerge Berkeley Christian Academy, The Academy, Willard Middle School, Escuela Bilingue International, and Rockridge Little School are located within 0.25 miles of the corridor. Although the proposed project would increase potential buildout in the three corridors compared to what was analyzed in the 2023 EIR by up to 4,399 units, as described above, adherence to applicable requirements, including DOT and DTSC regulations as well as the City's Standard COA regarding emissions and transport of hazardous materials would ensure that impacts would be reduced to a less than significant level, similar to the HEU.

Several streets in the Solano Avenue, North Shattuck Avenue, and College Avenue Areas, including College Avenue, Cedar Street, Dwight Way, Shattuck Avenue, Rose Street, and Ashby Avenue are designated as emergency access routes to move people and emergency response equipment in a disaster (City of Berkeley 2011). 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 the proposed project would increase the number of units in the three corridors by up to 4,399 units, and therefore would result in increased traffic compared to the HEU, the designated access routes would continue to serve as evacuation routes in the case of emergency because the proposed project does not propose street configuration changes. Moreover, because the three corridors can be accessed by several designated access routes, and new development in the three corridors are anticipated to be distributed throughout the area, the traffic increase that would result from new development would not substantially impact one route and would be distributed among existing routes. Future development would be required to conform to the latest Fire Code requirements, including provisions for emergency access, and would not obstruct existing roadways or require the construction of new roadways or access points. Therefore, impacts would be less than significant, similar to the HEU.

None of the three corridors are located within two miles of an airport. The College Avenue Corridor is closest to the Oakland San Francisco Bay Airport, which is still approximately 12.4 miles north of the airport. None of the three corridors are in the land use plan for the airport (Alameda County Community Development Agency 2010). There would be no impacts related to airport safety hazards for people residing or working in the three corridors.

Effects and Mitigation Measures

No new or substantially more severe significant effects would occur related to hazards and hazardous materials, and no new mitigation measures are required. Berkeley's Standard COA requiring contacting the TMD and determining if Environmental Site Assessments, Soil and Groundwater Management Plans, Building Materials Surveys, and Hazardous Materials Business Plans, as referenced in the 2023 EIR, would remain applicable.

Conclusion

The proposed project would have less than significant impacts with respect to hazards and hazardous materials. No substantial changes have occurred that require major revisions to the 2023 EIR. There is no new information indicating that the proposed project would have new significant impacts or substantially more severe significant impacts with respect to hazards and hazardous materials than were identified in the 2023 EIR. None of the conditions listed in *CEQA Guidelines* Section 15162 requiring preparation of a subsequent EIR have been met.

5.9 Hydrology and Water Quality

Impacts Identified in the 2023 EIR

As discussed in Section 4.9, *Hydrology and Water Quality*, of the 2023 EIR, construction activities could cause soil erosion from exposed soil, and accidental release of hazardous materials used for equipment such as vehicle fuels and lubricant, or temporary siltation from storm water runoff. However, future development facilitated by the HEU would be required to comply with State and local water quality regulations designed to control erosion and protect water quality during construction, such as requirements of the SWRCB CGP, which requires preparation and implementation of a Stormwater Pollution Prevention Plan (SWPPP) and BMPs for projects that disturb one acre or more of land. Should dewatering be necessary during construction, development projects would be subject to the San Francisco Bay Regional Water Quality Control Board Order No. R2-2012-0060, General Waste Discharge Requirements for Discharge or Reuse of Extracted Brackish Groundwater, Reverse Osmosis Concentrate Resulting from Treated Brackish Groundwater, and Extracted Groundwater from Structural Dewatering Requiring Treatment (Groundwater General Permit). Development would also be required to comply with BMC Chapters 17.20 and 21.40, which would reduce construction-related water quality impacts to a less than significant level.

Development under the HEU would also be required to comply with the BMC and the Municipal Regional Stormwater NPDES Permit (No. CAS612008). Development design would include BMPs to avoid adverse effects associated with stormwater runoff quality. The 2023 EIR stated that development would also be required to implement LID Measures and on-site infiltration, as required under the C.3 provisions of the Municipal Regional Stormwater Permit (MRP). In addition to Provision C.3, development would also be required to comply with Provisions C.6, C.10, and C.15 of the MRP, which would reduce operational water quality impacts to a less than significant level.

Similarly, with adherence to the NPDES CGP, NPDES MS4 General Permit, MRP, the Alameda County Clean Water Program, and the BMC, the 2023 EIR found that the HEU would not substantially alter the existing drainage pattern of the site or area or alter the course of a stream or river, not result in erosion or siltation, and 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 were found to be less than significant.

The 2023 EIR determined that the HEU would not substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table. Compliance with the above-mentioned regulations would increase the potential for groundwater recharge, resulting in less than significant impacts to groundwater.

As discussed in Section 4.9 of the 2023 EIR, there are a few Federal Emergency Management Agency (FEMA)-designated 100-year Flood Hazard Areas throughout the city, particularly in the western portion of the city. However, development in Flood Hazard Areas would be required to comply with Chapter 17.12 of the BMC, which contains standards for construction in flood zones, as well as Policies S-26, S-27, and S-28 of the Berkeley General Plan, which would reduce impacts to a less than significant level.

Impacts of the Proposed Project

Similar to what was assumed in the 2023 EIR, although development facilitated by the proposed project would occur on redevelopment sites in previously disturbed areas, ground-disturbing activities would still 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. If uncontrolled during construction, soil erosion and water pollutants could have adverse offsite effects on water quality. Although most future development projects in the three corridors would likely be on sites under one acre in size, future development projects that disturb more than one acre of land – for example, where lots are consolidated – would be required to comply with the requirements of the SWRCB

CGP, which requires preparation and implementation of a SWPPP. The SWPPP must include erosion and sediment control BMPs that would meet or exceed measures required by the CGP, as well as those that control hydrocarbons, trash, debris, and other potential construction-related pollutants. Post-construction stormwater performance standards are also required to specifically address water quality and channel protection events.

In addition, future subdivisions would be required to comply with BMC Section 21.40.270, which contains regulations that govern the grading, erosion, and sediment control, and future development would be required to comply with BMC Chapter 17.20, which requires BMPs to be implemented to minimize non-stormwater discharges during construction. As discussed above under Section 5.8, *Hazards and Hazardous Materials*, all future non-residential projects as well as residential or mixed-use projects with more than four dwelling units that are in the EMA and include excavations deeper than 5 feet would also be required to prepare a site-specific SGMP. Therefore, as with the HEU, construction-related water quality impacts would be less than significant.

The Solano Avenue, North Shattuck Avenue, and College Avenue Corridors are urbanized, largely consisting of impervious surfaces, including structures, parking lots, and roadways, with the exception of designated landscaped areas. Therefore, future development would likely replace existing impervious surfaces and would not substantially increase the existing amount of impervious surfaces. Nonetheless, the proposed project would increase development potential and building height in the three corridors by up to 4,399 units and 8 stories as outlined in Appendix A, which could require increased subgrade excavation due to deeper foundations and increase the likelihood of including underground parking. These features could, in turn, result in greater operational and dewatering-related water quality impacts compared to the HEU. Nonetheless, although the proposed project could facilitate development of up to a projected 8 stories as outlined in Appendix A and would require incrementally greater depths of disturbance for taller buildings, the building footprint and area of ground disturbance would stay the same as analyzed under the 2023 EIR, and the geographic extent of subsurface disturbance would not expand into new areas that have not already been evaluated. Furthermore, as discussed in the 2023 EIR with regard to the HEU, the proposed project would be required to comply with the same State and local regulations, such as the NPDES Permit; MRP, specifically Provision C.3, C.6, and C.15; and BMC regulations, which would reduce impacts to a less than significant level, similar to the HEU.

The Solano Avenue, North Shattuck Avenue, and College Avenue Corridors are 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. There are no surface waters within the three corridors, and the corridors are not located within a FEMA designated Flood Hazard Area (City of Berkeley 2026). Site-specific drainage pattern alterations could be required for development facilitated by the proposed project, but such alterations would not result in substantial adverse effects. Because the three corridors are already largely covered with impervious surfaces, development under the proposed project would not introduce substantial new impervious areas to the extent that the rate or amount of surface runoff would substantially increase, would not introduce substantial new surface water discharges, and would not result in flooding on- or off-site. Regulated projects[7] within the three corridors 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 three corridors would also be required to prepare a Stormwater Management Plan (SWMP) that includes the post-construction BMPs that control pollutant levels pursuant to BMC Chapter 17.20. SWMPs would be reviewed by the City of Berkeley prior to the issuance of building permits. In areas of the city that have soils with low

[7] Pursuant to the Alameda County Clean Water Program, 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.

permeability and/or areas with high water tables, which may include portions of the three corridors, BMPs that do not rely on infiltration are most appropriate. Therefore, similar to the HEU, this impact would be less than significant.

Effects and Mitigation Measures

No new or substantially more severe significant effects would occur related to hydrology and water quality, and no new mitigation measures are required.

Conclusion

The proposed project would have less than significant impacts with respect to hydrology and water quality. No substantial changes have occurred that require major revisions to the 2023 EIR. There is no new information indicating that the proposed project would have new significant impacts or substantially more severe significant impacts with respect to hydrology and water quality than were identified in the 2023 EIR. None of the conditions listed in *CEQA Guidelines* Section 15162 requiring preparation of a subsequent EIR have been met.

5.10 Land Use and Planning

Impacts Identified in the 2023 EIR

As discussed in Section 4.10, *Land Use and Planning*, of the 2023 EIR, the HEU would have no impact regarding division of an established community because the HEU includes policies and programs to encourage housing development on underutilized and vacant sites and along established commercial corridors and neighborhoods. The HEU was determined to be consistent with the goals and strategies of Plan Bay Area 2050, as well as policies in the City's General Plan and the BMC. As stated in Government Code Section 65589.5(a), the Legislature has concluded that "the lack of housing, including emergency shelters, is a critical problem that threatens the economic, environmental, and social quality of life in California." The HEU establishes policies and programs to further the goal of meeting the existing and projected housing needs of all household income levels of the community. In addition, the sites inventory provides evidence of the City's ability to accommodate the RHNA through the year 2031, as established by the Association of Bay Area Governments (ABAG), as well as efficiently utilize vacant, underutilized, and underdeveloped lots within the City to increase the supply of housing. Impacts were found to be less than significant.

Impacts of the Proposed Project

Although the proposed project would allow for up to an additional 4,399 units in the three corridors, 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. Therefore, similar to the HEU, this impact would be less than significant.

The proposed project would include Zoning Ordinance amendments and zoning map changes and associated General Plan text and map amendments to create or modify objective design standards in the three corridors, specifically in the C-SO, C-NS, and C-E zoning districts, to increase density, height, and massing to allow for mixed-use and residential development. As shown in Table 2, maximum building height in all three corridors would be increased to up to 8 stories, and maximum density would be increased to up to 165 dwelling units per acre. Future development facilitated by the proposed project would be required to comply with zoning requirements for residential uses as described in Title 23, *Zoning*, of the BMC. Therefore, similar to the HEU, the proposed project would be consistent with the BMC with adoption of the proposed project.

As shown below under Table 7 and Table 8, the proposed project would be consistent with the applicable goals and policies from Plan Bay Area 2050 and the City's General Plan as analyzed in the 2023 EIR, and impacts would be less than significant.

Table 7 Project Consistency with Plan Bay Area 2050

Measure	Proposed Project Consistency
Housing. Spur Housing Production for Residents of all Income Levels	
H3. Allow a greater mix of housing densities and types in Growth Geographies. Allow a variety of housing types at a range of densities to be built in Priority Development Areas, select Transit-Rich Areas and Select High-Resource Areas.	**Consistent.** The proposed project would facilitate up to 4,399 more units compared to the HEU in the three corridors, which are TPAs. Specifically, AC Transit bus routes 18, 27, G, 72, 72L, 72M, and 800 are located along the Solano Avenue Corridor; bus routes 7, 18, and FS are located along the North Shattuck Avenue Corridor; and bus routes 22, 27, 51B, 604, 605, and 851 are located along the College Avenue Corridor. The project would place future residents within walking and biking distance of transit and commercial uses and services, which would further reduce reliance on personal vehicles and encourage usage of alternative modes of transport.
H5. Integrate affordable housing into all major housing projects. Require a baseline of 10-20% of new market-rate housing developments of five units or more to be affordable to low-income households.	**Consistent**. Pursuant to Ordinance Number 936, *Inclusionary Housing*, and Chapter 23.328 of the BMC, the City requires that new rental housing with five or more units must provide 20 percent of the units as below market rate units or pay the Affordable Housing Mitigation Fee or provide some below market rate units and pay a prorated fee. Of the 20 percent below market rate units, half must be provided to low-income households, and half must be provided to very-low income households.
EN4. Maintain urban growth boundaries. Using urban growth boundaries and other existing environmental protections, focus new development within the existing urban footprint or areas otherwise suitable for growth, as established by local jurisdictions.	**Consistent.** The project would facilitate increased development of housing on redevelopment sites in the three corridors, all within the incorporated City of Berkeley, which would reduce pressure to develop open space areas. By placing residents close to jobs, services, and alternative methods of transportation, the project would reduce greenhouse gas emissions and other criteria pollutants associated with vehicle use to help communities stay healthy and safe.

Source: ABAG 2021

Table 8 Project Consistency with Relevant General Plan Goals and Policies

General Plan Policy	Proposed HEU Project Consistency
Land Use Element	
Maintain and Preserve the Character of Berkeley	
Policy LU-3 Infill Development. Encourage infill development that is architecturally and environmentally sensitive, embodies principles of sustainable planning and construction, and is compatible with neighboring land uses and architectural design and scale.	**Consistent.** The proposed project would facilitate increased infill development on underutilized sites in order to increase density to accommodate a higher number of residents. Individual future projects would be subject to the City's existing general development standards (BMC Chapter 23.304) to ensure that buildings are compatible with neighboring land uses and architectural design and scale.
Policy LU-4 Discretionary Review. Preserve and enhance the aesthetic, environmental, economic, and social character of Berkeley through careful land use and design review decisions.	**Consistent**. Future development would be required to comply with General Plan land use and design review policies and processes, and discretionary review would be required for applicable projects.

General Plan Policy	Proposed HEU Project Consistency
Maintain and Enhance Berkeley's Residential Areas	
Policy LU-9 Non-Residential Traffic. Minimize or eliminate traffic impacts on residential areas from institutional and commercial uses through careful land use decisions.	**Consistent**. The proposed project would facilitate up to 4,399 more units compared to the HEU along three transportation corridors, which are also TPAs. AC Transit bus routes 18, 27, G, 72, 72L, 72M, and 800 are located along the Solano Avenue Corridor; bus routes 7, 18, and FS are located along the North Shattuck Avenue Corridor; and bus routes 22, 27, 51B, 604, 605, and 851 are located along the College Avenue Corridor. The project would place future residents within walking and biking distance of transit and commercial uses and services, which would further reduce reliance on personal vehicles and encourage usage of alternative modes of transport.
Policy LU-11 Pedestrian- and Bicycle-Friendly Neighborhoods. Ensure that neighborhoods are pedestrian- and bicycle-friendly with well-maintained streets, street trees, sidewalks, and pathways.	**Consistent**. Future development would be required to comply with residential bicycle parking standards pursuant to BMC Section 23.322.090. Future residents and workers would be able to utilize existing bicycle routes along The Alameda, Colusa Avenue, Rose Street, Walnut Street, Center Street, Piedmont Avenue, and bicycle boulevards along Milvia Street, Virginia Street, Channing Way, Russell Street, and Hillegass Avenue. Implementation of the proposed project would not interfere or conflict with the City's pedestrian or bicycle network.
Maintain and Enhance Berkeley's Commercial Areas and the Downtown	
Policy LU-23 Transit-Oriented Development. Encourage and maintain zoning that allows greater commercial and residential density and reduced residential parking requirements in areas with above-average transit service such as Downtown Berkeley.	**Consistent**. The proposed project would facilitate up to 4,399 more units compared to the HEU in the three corridors, which are TPAs. Specifically, AC Transit bus routes 18, 27, G, 72, 72L, 72M, and 800 are located along the Solano Avenue Corridor; bus routes 7, 18, and FS are located along the North Shattuck Avenue Corridor; and bus routes 22, 27, 51B, 604, 605, and 851 are located along the College Avenue Corridor. The project would place future residents within walking and biking distance of transit and commercial uses and services, which would further reduce reliance on personal vehicles and encourage usage of alternative modes of transport. Pursuant to Chapter 23.334 of the BMC, developments that provide more affordable housing than required and/or a robust Transportation Demand Management Plan would be able to reduce their parking supply.
Policy LU-27 Avenue Commercial Areas. Maintain and improve Avenue Commercial areas, such as University, San Pablo, Telegraph, and South Shattuck, as pedestrian-friendly, visually attractive areas of pedestrian scale and ensure that Avenue areas fully serve neighborhood needs as well as a broader spectrum of needs.	**Consistent**. The proposed project would facilitate the development of up to 4,399 more units in the Solano Avenue, North Shattuck Avenue, and College Avenue corridors compared to the HEU. The proposed project would streamline housing development by providing an objective set of development standards, such as building height, setbacks, and minimum density. This would ensure that future development is compatible with the character and scale of Berkeley according to the City's standards. The increase in residential density and mixed-use development within the three corridors would enhance the pedestrian environment by supporting a larger, more consistent customer base for local businesses. Added activity would create a more vibrant, walkable streetscape with improved visibility and overall street-level vitality.

General Plan Policy	Proposed HEU Project Consistency
Transportation Element	
Automobile Use Reduction	
Policy T-10 Trip Reduction. To reduce automobile traffic and congestion and increase transit use and alternative modes in Berkeley, support, and when appropriate require, programs to encourage Berkeley citizens and commuters to reduce automobile trips, such as: 1. Participation in a citywide Eco-Pass Program (also see Transportation Policy T-3). 2. Participation in the Commuter Check Program. 3. Carpooling and provision of carpool parking and other necessary facilities. 4. Telecommuting programs. 5. "Free bicycle" programs and electric bicycle programs. 6. "Car-sharing" programs. 7. Use of pedal-cab, bicycle delivery services, and other delivery services. 8. Programs to encourage neighborhood-level initiatives to reduce traffic by encouraging residents to combine trips, carpool, telecommute, reduce the number of cars owned, shop locally, and use alternative modes. 9. Programs to reward Berkeley citizens and neighborhoods that can document reduced car use. 10. Limitations on the supply of long-term commuter parking and elimination of subsidies for commuter parking. 11. No-fare shopper shuttles connecting all shopping districts throughout the city.	**Consistent**. The proposed project would facilitate up to 4,399 more units compared to the HEU in the three corridors, which are TPAs. Specifically, AC Transit bus routes 18, 27, G, 72, 72L, 72M, and 800 are located along the Solano Avenue Corridor; bus routes 7, 18, and FS are located along the North Shattuck Avenue Corridor; and bus routes 22, 27, 51B, 604, 605, and 851 are located along the College Avenue Corridor. The project would place future residents within walking and biking distance of transit and commercial uses and services, which would further reduce reliance on personal vehicles and encourage usage of alternative modes of transport. As shown in Table 10, under Section 5.14, *Transportation,* the proposed project would result in a VMT per capita of 10.95, which is slightly higher than the VMT per capita for the HEU of 10.86, but still below the 15 percent below regional VMT threshold of 16.72. In addition, future development would be required to comply with Chapter 23.334 of the BMC, which requires development and implementation of a Transportation Demand Management program.
Urban Design & Preservation	
Policy UD-33 Sustainable Design. Promote environmentally sensitive and sustainable design in new buildings.	**Consistent.** As discussed in Section 5.5, *Energy*, and Section 5.7, *Greenhouse Gas Emissions,* future development projects would be required to be constructed in accordance with the latest iteration of CALGreen and the California Energy Code, which include requirements for environmentally sensitive and sustainable design practices. In addition, all future residential customers would be placed in Ava's Renewable 100 Plan which utilizes 100 percent renewable and carbon free energy.

Effects and Mitigation Measures

No new or substantially more severe significant effects would occur related to land use and planning, and no new mitigation measures are required.

Conclusion

The proposed project would have less than significant impacts with respect to land use and planning. No substantial changes have occurred that require major revisions to the 2023 EIR. There is no new information indicating that the proposed project would have new significant impacts or substantially more severe significant impacts with respect to land use and planning than were identified in the 2023 EIR. None of the conditions listed in *CEQA Guidelines* Section 15162 requiring preparation of a subsequent EIR have been met.

5.11 Noise

Impacts Identified in the 2023 EIR

According to the Berkeley General Plan Environmental Management Element, noise-sensitive uses include but are not limited to residences, child-care centers, hospitals, and nursing homes (City of Berkeley 2001). As discussed in Section 4.11, *Noise*, of the 2023 EIR, the HEU could expose noise-sensitive receptors to combined noise levels from construction equipment of 84 dBA L_{eq} at 50 feet without a pile driver, and 95 dBA L_{eq} at 50 feet with a pile driver. Development facilitated by the HEU would be required to comply with the City's Standard COAs related to construction hours, construction noise reduction, construction noise management, and noise reduction plans. Nonetheless, construction noise levels could still exceed the City's standards for stationary equipment in both multi-family residential and commercial zones and could still exceed the City's standards at multiple sites. Therefore, construction noise impacts were found to be significant and unavoidable.

Operation of projects facilitated by the HEU would include mechanical equipment such as heating, ventilation, and air conditioning (HVAC) equipment, delivery and trash trucks, and other noise-generating activities. However, such activities would be similar to the existing noise environment, and development would be required to comply with Section 13.40.070 of the BMC, which states that stationary machines and other devices located on the exterior of structures which generate sounds perceptible outside the perimeters of the lot on which the machine or other device is located must be installed with such sound transmission control measures to adequately minimize or eliminate the transmission of the sound to a level not to exceed 60 dBA on weekdays and 50 dBA on weekends for single family residential beyond property perimeters; Section 23130 of the California Motor Vehicle Code which establishes maximum sound levels of 86 dBA L_{eq} at 50 feet for trucks operating at speeds less than 35 miles per hour; Section 13.40.070 of the BMC which prohibits operating or permitting the operation of a mechanically powered saw, sander, drill, grinder, lawn or garden tool, or similar tool before 7:00 a.m. on a weekday (or before 9:00 a.m. on a weekend or holiday) or after 7:00 p.m. on a weekday (or after 8:00 p.m. on a weekend or holiday) such that the sound therefrom across a residential or commercial real property line violates BMC Section 13.40.050 or 13.40.060; and Section 19.29 of the BMC which includes the 2019 California Residential Code, as adopted in Title 24 Part 2.5 of the California Code of Regulations, which would reduce operational noise impacts to a less than significant level. As discussed in the 2023 EIR, daily VMT from the HEU would increase by approximately 6 percent over existing 2020 conditions by the year 2031. A 6 percent increase in traffic on a roadway would equate to an increase in noise of 0.2 dBA, which would not double the existing mobile noise source and would not increase noise levels by even the most conservative threshold of 3 dBA, which is considered a barely perceptible noise increase. Off-site traffic noise impacts were therefore found to be less than significant.

The 2023 EIR found that construction activities related to development facilitated by the HEU would not result in significant vibration impacts with adherence to the City's Standard COA related to construction vibration. The 2023 EIR also found that groundborne vibration in the vicinity of development facilitated by the HEU would be primarily generated by vehicular travel on the local roadways. However, the HEU would not increase traffic trips such that it would be perceptible to nearby noise-sensitive receptors, and impacts would be less than significant.

As discussed in 2023 EIR Section 4.11, development facilitated by the HEU would not be exposed to intermittent noise levels from overhead flight patterns from airports in the city, because there are none located within Berkeley. In addition, residential development would be required to incorporate noise insulation features consistent with achieving State and local standards to reduce interior noise levels to below 45 dBA. Therefore, impacts would be less than significant.

Impacts of the Proposed Project

Construction Noise

The proposed project would increase the potential number of units in the Solano Avenue, North Shattuck Avenue, and College Avenue Corridors by up to 4,399 units compared to the adopted HEU, and would allow increased building heights of up to a projected 8 stories (Appendix A), which could require increased subgrade excavation due to deeper foundations and/or increase the likelihood of sub-grade parking, and thereby result in additional demolition and construction activity that would generate temporary increases in ambient noise levels. It is also possible that concurrent construction activity on nearby development sites could result in a higher combined temporary increase in ambient noise at sensitive receptors in the vicinity, and result in an adverse impact on nearby noise-sensitive receptors. As discussed in the 2023 EIR, construction noise levels would vary depending on the type of equipment, the duration of use, the distance to receivers, and the potential for pile driving. Noise associated with construction of most development facilitated by the proposed project would be typical of residential construction in urban areas, but could exceed the eight-hour 80 dBA L_{eq} daytime significance threshold at residences. Similar to the HEU, the proposed project could facilitate larger projects that may include relatively lengthy construction durations (i.e., longer than 18 months), two or more subterranean levels, use of multiple pieces of heavier equipment (i.e., cranes, excavators, dozers), simultaneous use of multiple pieces of equipment, and generally noisier activities, such as the potential for pile driving. This could potentially result in significant noise impacts, in particular to adjacent residential zones or other nearby noise-sensitive receivers, and would temporarily increase ambient noise levels above Federal Transit Administration (FTA) noise limits. Development facilitated by the proposed project would be required to comply with the City's Standard COA related to construction hours, construction noise reduction programs, construction noise management, and noise reduction plans, which would reduce construction noise to the extent feasible.

Construction Hours (Residential Zoning Districts). Construction activity shall be limited to between the hours of 8:00 AM and 6:00 PM on Monday through Friday, and between 9:00 AM and Noon on Saturday. No construction-related activity shall occur on Sunday or any Federal Holiday.

Construction Hours (Non-Residential Zoning Districts). Construction activity shall be limited to between the hours of 7:00 AM and 6:00 PM on Monday through Friday, and between 9:00 AM and 4:00 PM on Saturday. No construction-related activity shall occur on Sunday or any Federal Holiday.

Construction Noise Reduction Program. The applicant shall develop a site specific noise reduction program prepared by a qualified acoustical consultant to reduce construction noise impacts to the maximum extent feasible, subject to review and approval of the Zoning Officer. The noise reduction program shall include the time limits for construction listed above, and measures needed to ensure that construction complies with BMC Section 13.40.070. The noise reduction program should include, but shall not be limited to, the following available controls to reduce construction noise levels as low as practical:

A. Construction equipment should be well maintained and used judiciously to be as quiet as practical.
B. Equip all internal combustion engine-driven equipment with mufflers, which are in good condition and appropriate for the equipment.

C. Utilize "quiet" models of air compressors and other stationary noise sources where technology exists. Select hydraulically or electrically powered equipment and avoid pneumatically powered equipment where feasible.
D. Locate stationary noise-generating equipment as far as possible from sensitive receptors when adjoining construction sites. Construct temporary noise barriers or partial enclosures to acoustically shield such equipment where feasible.
E. Prohibit unnecessary idling of internal combustion engines.
F. If impact pile driving is required, pre-drill foundation pile holes to minimize the number of impacts required to seat the pile.
G. Construct solid plywood fences around construction sites adjacent to operational business, residences or other noise-sensitive land uses where the noise control plan analysis determines that a barrier would be effective at reducing noise.
H. Erect temporary noise control blanket barriers, if necessary, along building facades facing construction sites. This mitigation would only be necessary if conflicts occurred which were irresolvable by proper scheduling. Noise control blanket barriers can be rented and quickly erected.
I. Route construction related traffic along major roadways and away from sensitive receptors where feasible.

Construction Noise Management – Public Notice Required. At least two weeks prior to initiating any construction activities at the site, the applicant shall provide notice to businesses and residents within **500 feet** of the project site. This notice shall at a minimum provide the following: (1) project description, (2) description of construction activities, (3) daily construction schedule (i.e., time of day) and expected duration (number of months), (4) the name and phone number of the Project Liaison for the project that is responsible for responding to any local complaints, (5) commitment to notify neighbors at least four days in advance of authorized extended work hours and the reason for extended hours, and (6) that construction work is about to commence. The liaison would determine the cause of all construction-related complaints (e.g., starting too early, bad muffler, worker parking, etc.) and institute reasonable measures to correct the problem. A copy of such notice and methodology for distributing the notice shall be provided in advance to the City for review and approval.

Noise Reduction Plan. Applicants are required to develop a site-specific noise reduction program prepared by a qualified acoustical consultant to reduce construction noise impacts to the maximum extent feasible. The noise reduction program would include several elements that would reduce the exposure of sensitive receptors to construction noise, such as the following:

- Equipping all internal combustion engine-driven equipment with mufflers in good condition
- Pre-drilling foundation pile holes to minimize the use of pile drivers
- Installing solid plywood fences around construction sites adjacent to sensitive receptors
- Erecting temporary noise control blanket barriers along building façades facing construction sites.

However, as discussed in the 2023 EIR, the Standard COAs would include the installation of temporary sound barriers where warranted, which are the most effective advanced measure to reduce noise from construction sites adjacent to noise-sensitive receptors, and no further measures are available to provide additional reductions in construction noise. Therefore, construction noise levels could still exceed the City's standards for stationary equipment in both multi-family residential and commercial zones. Furthermore, construction noise levels could exceed the City's standards at multiple sites where the proposed project would facilitate development in the Solano Avenue, North Shattuck Avenue, and College Avenue Corridors. This impact would be significant and unavoidable, consistent with the findings of the 2023 EIR.

Operational Noise

The additional 4,399 units facilitated under the proposed project would generate noise associated with the operation of residences. Typical noise sources associated with residential uses include stationary HVAC equipment, vehicle movement (e.g., delivery and trash hauling), outdoor activities, and traffic on area roadways. These impacts are discussed below.

HVAC Equipment

Because of the proposed increased density of development in the three corridors, this analysis includes the conservative assumption that new HVAC equipment could be installed as close as 20 feet from noise-sensitive receptors on adjacent properties. Typical residential HVAC units are anticipated to generate noise levels ranging from 50 to 60 dBA L_{eq} at a distance of 50 feet from the source, if unshielded by equipment enclosures (Illingworth & Rodkin 2019). Based on a standard attenuation rate of 6 dBA per doubling of distance from stationary noise sources, it is estimated that new HVAC equipment in the three corridors would generate noise levels reaching 68 dBA at 20 feet from the source. This estimate does not account for the shielding effect of equipment enclosures or rooftop parapets, which could block line of sight between the source and noise-sensitive receptors, reducing noise levels by at least 10 dBA. However, as discussed in the 2023 EIR, the design and placement of new HVAC equipment would be required to comply with Section 13.40.070 of the BMC, which states that stationary machines and other devices located on the exterior of structures which generate sounds perceptible outside the perimeters of the lot on which the machine or other device is located must be installed with such sound transmission control measures to adequately minimize or eliminate the transmission of the sound to a level not to exceed 60 dBA on weekdays and 50 dBA on weekends for single family residential beyond property perimeters. Stationary equipment shall not exceed 65 dBA on weekdays and 55 dBA on weekends for multi-family residential areas.[8] Furthermore, a motor, machinery, pump, such as swimming pool equipment, etc., must be sufficiently enclosed or muffled and maintained so as not to create a Noise Disturbance in accordance with Section 13.40.050 or 13.40.060. Therefore, impacts related to HVAC equipment would be less than significant, similar to the HEU.

Vehicle Activity (Delivery and Trash Hauling)

Maximum noise levels generated by movement of medium duty delivery trucks generally range from 61 to 70 dBA Leq at a distance of 25 feet, depending on the speed at which the truck is driving (Olson 1972). The average noise level for a single idling truck generally ranges from 72 to 77 dBA Leq at a distance of 25 feet. It is assumed that delivery and trash hauling trucks serving additional development in the three corridors could stop as close as 25 feet to adjacent residences. An increase of up to 4,399 units in the three corridors could result in a slightly higher volume of truck trips for delivery and trash hauling. However, truck activity would not substantially exceed existing activity in the already urbanized corridors. For example, trash and recycling trucks already visit most existing properties that could be redeveloped under the proposed project. Additionally, as discussed in the 2023 EIR, Section 23130 of the California Motor Vehicle Code establishes maximum sound levels of 86 dBA L_{eq} at 50 feet for trucks operating at speeds less than 35 miles per hour, and solid waste pick-up operations are typically scheduled during daytime hours when people tend to be less sensitive to noise. Furthermore, these noise events from trucks are typically transient and intermittent, and do not occur for a sustained period of time. Therefore, similar to the HEU, impacts related to delivery and trash hauling would be less than significant.

Outdoor Activity Areas

Addition of up to 4,399 units in the three corridors would increase the number of residents and thereby increase noise generated by conversations, music, television, or other outdoor sound-generating equipment (e.g., leaf blowers), particularly in the event future residents open their windows or such activities take place on balconies or in common outdoor amenity areas. However, these noise-generating

[8] Maximum sound levels for repetitively scheduled and relatively long term operation (period of 10 days or more) of stationary equipment.

activities would be similar to those of the existing urban environment. Further, violations of the noise ordinance would be subject to BMC Chapter 13.40. This chapter prohibits noise disturbances such as loud equipment, amplified sound not associated with a permitted event, or yelling and sets forth procedures if violations occur. Section 13.40.070 of the BMC prohibits operating or permitting the operation of a mechanically powered saw, sander, drill, grinder, lawn or garden tool, or similar tool before 7:00 a.m. on a weekday (or before 9:00 a.m. on a weekend or holiday) or after 7:00 p.m. on a weekday (or after 8:00 p.m. on a weekend or holiday) such that the sound therefrom across a residential or commercial real property line violates Section 13.40.050 or 13.40.060. Furthermore, Chapter 19.29 of the BMC includes the 2019 California Residential Code, as adopted in Title 24 Part 2.5 of the California Code of Regulations. Therefore, similar to the HEU, impacts related to outdoor activities would be less than significant.

Roadway Vehicle Noise

The proposed project would allow for up to 4,399 more units in the three corridors compared to what was anticipated under the HEU. The proposed project could affect ambient traffic noise if the proposed project facilitated development in a way that would increase vehicle trips to and from the three corridors. As stated above in the "Impacts Identified in the 2023 EIR," a doubling of mobile noise sources would increase traffic noise levels by an estimated 3 dBA, which is considered a barely perceptible noise increase. Due to the nature of the project which would facilitate development in three corridors areas in different parts of Berkeley and along various roadways in these areas, it is not anticipated that the project would double the existing mobile noise sources along any one roadway and therefore would not increase noise levels by the most conservative threshold of 3 dBA, which is considered a barely perceptible noise increase. As shown in Table 9, based on the VMT Memorandum prepared by Kittelson & Associates (Appendix C), the proposed project would increase Citywide VMT by 6.8 percent compared to buildout under the HEU without the proposed project. Therefore, overall, the project would not double the existing mobile noise source and would not increase noise levels by even the most conservative threshold of 3 dBA, which is considered a barely perceptible noise increase. Similar to the HEU, impacts related to off-site operational noise would be less than significant.

Table 9 Vehicle Miles Traveled Summary

	Total Daily VMT
2040 No Project Citywide VMT	2,088,198
2040 With Proposed Project Citywide VMT	2,230,694
Change in VMT	**142,496 (6.8% increase)**

Source: Kittelson & Associates 2026 (Appendix C)

Operational Vibration

Similar to the HEU, it is not anticipated that operation of residential development would involve activities that would result in substantial vibration levels, such as use of heavy equipment or machinery. Based on the FTA *Transit Noise and Vibration Impact Assessment* (2018) guidance document, rubber tires and suspension systems dampen vibration levels from vehicles on local roadways to a level that is rarely perceptible. Therefore, similar to the HEU, the proposed project would have a less than significant impact related to operational vibration.

Construction Vibration

The proposed project would allow for additional development in the three corridors, the construction of which could intermittently generate strong vibration. As discussed in the 2023 EIR, general construction equipment such as a vibratory roller would generate vibration levels up to 0.21 in./sec. peak particle velocity (PPV) at 25 feet, while more intensive equipment such as pile driving could generate a vibration level of approximately 0.64 in./sec. PPV at 25 feet. According to Caltrans impact criteria, the damage

threshold for historic sites (which are most sensitive to impacts from groundborne vibration) is 0.12 in./sec. PPV. Groundborne vibration from hoe rams, bulldozers, caisson drilling, loaded trucks, and jackhammers would not exceed the 0.1 in./sec. PPV threshold for sensitive historic sites. While groundborne vibration from vibratory rollers would only exceed the threshold for building damage for historic sites at 25 feet from the source, vibration levels from pile driving would exceed one or more of building damage thresholds for historic sites, general old buildings, and older and newer residential structures. Furthermore, vibration levels associated with pile driving would also exceed the threshold of 0.25 in./sec. PPV for human annoyance at various distances up to 75 feet. Future development facilitated by the proposed project would be required to comply with the City's Standard COA related to construction vibration, which would ensure groundborne vibration from vibratory rollers and vibration levels from pile driving would not occur in a manner that would damage buildings.

> **Damage Due to Construction Vibration.** The project applicant shall submit screening level analysis prior to, or concurrent with demolition building permit. If a screening level analysis shows that the project has the potential to result in damage to structures, a structural engineer or other appropriate professional shall be retained to prepare a vibration impact assessment (assessment). The assessment shall take into account project specific information such as the composition of the structures, location of the various types of equipment used during each phase of the project, as well as the soil characteristics in the project area, in order to determine whether project construction may cause damage to any of the structures identified as potentially impacted in the screening level analysis. If the assessment finds that the project may cause damage to nearby structures, the structural engineer or other appropriate professional shall recommend design means and methods of construction to avoid the potential damage, if feasible. The assessment and its recommendations shall be reviewed and approved by the Building and Safety Division and the Zoning Officer. If there are no feasible design means or methods to eliminate the potential for damage, the structural engineer or other appropriate professional shall undertake an existing conditions study (study) of any structures (or, in case of large buildings, of the portions of the structures) that may experience damage. This study shall establish the baseline condition of these structures, including, but not limited to, the location and extent of any visible cracks or spalls; and include written descriptions and photographs.

Therefore, similar to the HEU, construction vibration impacts would be less than significant.

Airport Noise

As discussed in the 2023 EIR, the closest airport to Berkeley is the Oakland San Francisco Bay Airport. The College Avenue Corridor is closest to the Oakland San Francisco Bay Airport, which is still approximately 12.4 miles north of the airport. According to the *Oakland International Airport Land Use Compatibility Plan*, Berkeley is located outside of the airport's noise contours and the airport influence area illustrated in Figure 3-1 of the Airport Land Use Compatibility Plan (Alameda County Community Development Agency 2010). Therefore, similar to the HEU, the proposed project would not expose people residing or working in the plan area to excessive noise levels, and impacts would be less than significant.

Effects and Mitigation Measures

No new or substantially more severe significant effects would occur related to noise and vibration, and no new mitigation measures are required. Berkeley's Standard COAs related to construction hours, construction noise reduction, construction noise management, noise reduction plans, and construction vibration, as referenced in the 2023 EIR, would remain applicable.

Conclusion

The City's Standard COA for construction noise reduction and management and BMC requirements would still be applicable to development under the proposed project. However, even with implementation of these conditions, impacts related to construction noise would remain significant and unavoidable, similar to the HEU. Nonetheless, no substantial changes have occurred that require major revisions to the 2023

EIR. As discussed under "Impacts of the Proposed Project" above, there is no new information indicating that the proposed project would have new significant impacts or substantially more severe significant impacts with respect to noise than were identified in the 2023 EIR. None of the conditions listed in *CEQA Guidelines* Section 15162 requiring preparation of a subsequent EIR have been met.

5.12 Population and Housing

Impacts Identified in the 2023 EIR

As discussed in Section 4.12, *Population and Housing*, of the 2023 EIR, the HEU would add housing sites with a potential for up to 19,098 additional residential units and 47,443 additional residents by the year 2031. The 2023 EIR found that the HEU would be consistent with State requirements for the RHNA and would be within the growth forecasts for Northwest Alameda County in Plan Bay Area 2050, which projected a 57 percent increase in population for Northwest Alameda County. The 2023 EIR found that the HEU would not directly or indirectly result in substantial unplanned population growth, and would not result in the displacement of substantial numbers of people or housing. Therefore, impacts were found to be less than significant.

Impacts of the Proposed Project

The proposed project would facilitate the development of up to 4,399 additional units in the Solano Avenue, North Shattuck Avenue, and College Avenue Corridors compared to the adopted HEU. Using the 2023 EIR estimate of 2.5 persons per household, the proposed project would increase the number of residents in the three corridors and in Berkeley by 10,998 people. In the unlikely event that all buildout under the 2023 EIR (47,443 residents) and the proposed project occurs, the total population of the city in 2031 (buildout year of the 2023 HEU) would be 183,004, or a population increase of approximately 47 percent[9]. Similar to the HEU, the proposed project would facilitate sufficient housing development to meet the City's RHNA and would be within the growth forecasts for Northwest Alameda County in Plan Bay Area 2050, which projects a 57 percent increase in population for Northwest Alameda County. Given that the State is currently in an ongoing housing crisis due to an insufficient housing supply, the additional units under the proposed project would also assist in addressing the existing crisis and meeting Berkeley's housing needs.

Similar to what was analyzed in the 2023 EIR, this analysis is conservative because it assumes a maximum buildout scenario. The proposed project's actual contribution to population growth may be less than estimated. In addition, the proposed project would not involve the extension of roads or other infrastructure that could indirectly lead to population growth. As discussed in Sections 4.13, *Public Services and Recreation*, and Section 4.16, *Utilities and Service Systems*, of the 2023 EIR, the city is mostly developed and is supported by existing public services and infrastructure which are sufficient to serve the additional housing units. Therefore, the proposed project would not result in substantial unplanned population growth, either directly or indirectly, and impacts would be less than significant, same as the impact analyzed in the 2023 EIR.

While the proposed project would have no direct physical effects, subsequent development allowed by the proposed project could involve the demolition of existing housing units in the three corridors. Because the addition of up to 4,399 more housing units than analyzed in the 2023 EIR would more than offset the potential loss of housing units, the proposed project would not require the construction of additional housing elsewhere. Future applicants would be required to comply with the City's Inclusionary Housing Ordinance, which would require developers of market-rate ownership housing to include affordable ownership units or pay a fee, as well as the Affordable Housing Mitigation Fee Ordinance, which would require developers of market-rate rental housing to pay a fee to the Housing Trust Fund (which is used as funding for affordable housing production) or include affordable units in developments.

[9] (47,443 (buildout of HEU) + 10,99810,998 (buildout of proposed project)) / 124,563 (current population in the 2023 EIR) x 100 = 47 percent

In addition, SB 330 would require that replacement housing be either rent-controlled or below market rate. Moreover, deed restrictions may run with individual properties to maintain long-term affordability. The BMC also places conditions on the loss of housing units and includes tenant protections for displaced residents. Projects that involve demolition or elimination of dwelling units would be subject to BMC Chapter 23.326, which includes tenant protections for displaced residents. When demolition of an occupied unit is approved, the project applicant is required to provide assistance with moving expenses and subsidize the rent differential for a comparable replacement unit. If a tenant is displaced due to the owner withdrawing the building from rent or lease or for repairs to bring the unit into compliance, BMC Section 13.77.055 and Chapter 13.84 entitle the tenant to relocation compensation and certain protections. In addition, BMC Section 13.76.130 requires landlords to have good cause for evictions and provide relocation assistance to households as specified in Section 13.76.130A(9). Therefore, similar to the HEU, the proposed project would not result in the net loss or displacement of housing, necessitating the construction of replacement housing elsewhere, and impacts would be less than significant.

Effects and Mitigation Measures

No new or substantially more severe significant effects would occur related to population and housing, and no new mitigation measures are required.

Conclusion

The proposed project would have less than significant impacts with respect to population and housing. No substantial changes have occurred that require major revisions to the 2023 EIR. There is no new information indicating that the proposed project would have new significant impacts or substantially more severe significant impacts with respect to population and housing than were identified in the 2023 EIR. None of the conditions listed in *CEQA Guidelines* Section 15162 requiring preparation of a subsequent EIR have been met.

5.13 Public Services and Recreation

Impacts Identified in the 2023 EIR

As discussed in Section 4.13, *Public Services and Recreation*, of the 2023 EIR, the HEU would increase demand for fire and police protection services, school facilities, and parks and recreational facilities. However, compliance with Government Code 65995 (b) as well as policies in the City's General Plan and BMC would reduce impacts to a less than significant level.

Impacts of the Proposed Project

Fire Protection

Fire protection in the city is provided by the Berkeley Fire Department (BFD). The proposed project would facilitate development that would increase population in the Solano Avenue, North Shattuck Avenue, and College Avenue Corridors and in Berkeley by adding the potential for up to 4,399 new units. Using the 2023 EIR estimate of 2.5 persons per household, the proposed project's changes to the HEU would result in 10,998 new residents in addition to the 47,443 new residents estimated to be added in the HEU as analyzed in the 2023 EIR. The additional increase in residents associated with the proposed project could increase demand for fire protection and emergency medical services such that additional staff, equipment or facilities would be needed to meet response time goals. However, future development would be facilitated on redevelopment sites in urbanized areas in the three corridors which are already served by existing fire stations. BFD Fire Station 4 is located approximately 840 feet southeast of the Solano Avenue Corridor; BFD Fire Station 2 is located approximately 0.3 mile south of the North Shattuck Avenue Corridor; and BFD Fire Station 3 is located immediately adjacent to the College Avenue Corridor to the east. The continued implementation of policies and actions in the Berkeley General Plan would

improve the ability of fire protection facilities to serve this additional future development and allow fire protection services to maintain response time goals. As discussed in the 2023 EIR, the BFD has an average response time of five minutes and fifteen seconds (5:15) from when the station receives the call to the first unit arriving on the scene. The median response time is 4:46. Policy S-22 in the City's Disaster Preparedness and Safety Element of the General Plan 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. Although the City's response time goal of four minutes has not been met, new residential projects would be reviewed for compliance with these requirements and compliance with other building and safety regulations several times during different phases of project development, such as the entitlement and pre-application phase, during the building permit process, and during the construction process. Future development would be required to comply with basic building designs and standards for residential buildings as mandated by the Berkeley Fire Code under BMC Chapter 19.48. In some cases, older buildings not constructed to today's more stringent levels of fire-safety regulation would be replaced by new buildings compliant with existing regulations, improving fire safety on those sites. Compliance with designs and standards and other fire safety requirements would reduce the demand for fire protection services and thereby reduce the need for new fire stations. Future development would also be required to comply with abatement of fire-related hazards and pre-fire management prescriptions as contained in the California Health and Safety Code and the California Fire Plan. The City's Measure FF, passed in November 2020, is estimated to generate $8.5 million annually, and would be used to implement a state-of-the-art 911 dispatch system to ensure rapid assistance to emergency medical calls, increase ambulance and paramedic capacity, to better meet the needs of all residents, and strengthen wildfire, earthquake and other disaster prevention and preparedness with new, expanded emergency warning systems, fire fuel reduction and evacuation planning. These funds will allow the Fire Department to address increased call volumes and emergency medical service needs that result from city-wide increases in residential density, including the anticipated increase allowed under the proposed project. Future remodeling or expansion of BFD facilities to accommodate new equipment would not be needed to specifically serve the additional residential units, which would be added incrementally in various locations in the city and served by more than one fire station. Should a new fire station be required, the environmental impacts of constructing a fire station would be consistent with the construction-related impacts discussed in other sections of this Addendum and the 2023 EIR. Should the Fire Department and the City determine that additional facilities are needed to provide fire protection services to the three corridors, it is not known whether such facilities would be located within the three corridors or elsewhere in the city. If and when the BFD proposes a new station and identifies an appropriate site and funding, the City will conduct a site-specific evaluation of the station's environmental impacts under CEQA. Therefore, impacts to fire services would be less than significant, similar to the HEU.

Police Protection

Police protection in the city is provided by the Berkeley Police Department (BPD). Although the proposed project would increase potential buildout in the three corridors compared to what was analyzed in the 2023 EIR by up to 4,399 units, future development would be facilitated on redevelopment sites in urbanized areas which are already served by the BPD. Nonetheless, the additional population growth facilitated by the proposed project could result in an increase in reported incidents, leading to longer response times unless the BPD increases staffing. The Disaster Preparedness and Safety Element, the Transportation Element and the Economic Development & Employment Element of the City's General Plan include policies that would ensure police services are adequate to accommodate an increase in population. Specifically, Policy S-1 and Action G would ensure that the City's emergency response plans are current and incorporate the latest information on hazards, vulnerability and resources; Policy T-28 and Action A would ensure emergency access be provided to all parts of the city which would not significantly increase emergency response times or hinder effective evacuation; and Policy ED-4 and Action A would ensure there are adequate levels of police presence in neighborhood and avenue commercial zones. Should the BPD and the City determine that additional facilities are needed to provide police protection services to the three corridors, it is not known whether such facilities would be located within the three

corridors or elsewhere in the city. If and when the BPD proposes a new station and identifies an appropriate site and funding, the City will conduct a complete a site-specific evaluation of the station's environmental impacts under CEQA. Therefore, similar to the HEU, impacts to police services would be less than significant.

Schools

As discussed in the 2023 EIR, in a study prepared for Berkeley Unified School District's (BUSD) 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 project would add an estimated total of 840 new students over time. However, this number is highly conservative, and it is assumed that many of the new housing units would be occupied by University students and would not house school-aged children, since one of the primary goals 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, specifically in the North Shattuck Avenue Corridor. 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. Although the proposed project would increase the number of students by 840, similar to what was discussed in the 2023 EIR, future development facilitated by the proposed project would be required to pay school impact fees pursuant to Section 65995(3)(h) of the California Government Code (Senate Bill 50, chaptered August 27, 1998), which BUSD would use to maintain the desired school capacity and the maintenance and/or development of new school facilities. Should BUSD determine that additional schools are needed, it is not known whether the schools would be located within the three corridors or elsewhere in the city. If and when BUSD proposes a new school and identifies an appropriate site and funding, the District would conduct a site-specific evaluation of the school's environmental impacts under CEQA. Therefore, impacts related to school capacity would be less than significant, similar to the HEU.

Parks and Recreation

Similar to the HEU, the proposed project would not include the provision of new parks or the physical alteration of existing parks or recreation centers. Full buildout of the proposed project would further increase the number of residents in the three corridors compared to the HEU by 10,998 people, which would increase the use of parks and recreational facilities. As discussed in the 2023 EIR, the ratio of parkland per resident is approximately 25.5 acres per 1,000 residents. Although the proposed project would decrease the ratio of parkland per resident from 25.5 acres per 1,000 residents to 24.0 acres per 1,000 residents[10], this is still substantially higher than the City's 1977 Master Plan goal of two acres per 1,000 residents (City of Berkeley 2001). Furthermore, in accordance with General Plan policies, the City continually evaluates and plans for expansion or renovations of parks and recreation facilities as needed to accommodate demand. Compliance with General Plan policies, particularly Policies OS-1, OS-2, OS-6, would ensure park facilities are kept up to date and park acreage to population ratio is maintained within Berkeley. Compliance with General Plan policies and actions would potentially result in development of new recreational opportunities including parks. Should future park or recreational facilities be identified for construction, it is not known where such facilities would be located. If and when the Parks Department proposes new facilities and identifies an appropriate site and funding, the City will conduct an evaluation of the site-specific environmental impacts of the new park or recreation facility under CEQA. In addition, it is assumed that the majority of future housing in the North Shattuck Avenue Corridor would serve University students and staff who would have access to recreational opportunities such as pools, gyms, open space, and other recreational programs associated with the University campus. Future residents in the three corridors would also be able to access existing City parks and regional recreational facilities; including the Bay Trail and Eastshore State Park and Tilden Regional Park and Claremont Canyon Regional Preserve. Therefore, the proposed project would not result in substantial overuse of existing City

[10] (4,391 acres of parkland x 1,000) / 183,004people = 24.0 acres per 1,000 residents.

parks which may cause physical deterioration of these facilities or require the construction or expansion of facilities which may have an adverse physical effect on the environment. Therefore, impacts related to parks and recreational facilities would be less than significant, similar to the HEU.

Effects and Mitigation Measures

No new or substantially more severe significant effects would occur related to public services and recreation, and no new mitigation measures are required.

Conclusion

The proposed project would have less than significant impacts with respect to public services and recreation. No substantial changes have occurred that require major revisions to the 2023 EIR. There is no new information indicating that the proposed project would have new significant impacts or substantially more severe significant impacts with respect to public services and recreation than were identified in the 2023 EIR. None of the conditions listed in *CEQA Guidelines* Section 15162 requiring preparation of a subsequent EIR have been met.

5.14 Transportation

Impacts Identified in the 2023 EIR

As discussed in Section 4.14, *Transportation*, of the 2023 EIR, the HEU would not conflict with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities. Although the HEU would increase ridership for AC Transit and BART, AC Transit and BART monitor and plan for anticipated changes in local and regional ridership levels and increased demand through their ongoing evaluation of routes, schedules, ridership, and capacity availability. The HEU would also be consistent with the City's 2017 Bicycle Plan and development would be required to provide long-term and short-term bicycle parking in accordance with BMC Section 23.322.090 as well as meet applicable requirements for pedestrian access under BMC Section 23.304.100.

The 2023 EIR found that the HEU would decrease VMT per capita by 3 percent, from 11.22 to 10.86, which would be below the City of Berkeley VMT threshold of 19.38 (15 percent below regional average household VMT per capita of 22.80). Therefore, VMT impacts were found to be less than significant.

As found in the 2023 EIR, the HEU would not include hazardous geometric design features or incompatible uses, and circulation components and geometric design features for individual projects would be reviewed by the City Engineering division and would be in accordance with all applicable City standards and the building plan check process to minimize design hazards. Therefore, this impact was determined to be less than significant.

The HEU also would not result in inadequate emergency access. The 2023 EIR determined that development under the HEU would be required to comply with basic building designs and standards for residential buildings as mandated by the Berkeley Fire Code, under BMC Chapter 19.48. As a part of development review, representatives from several City departments and representatives, including the Building and Safety Division, the Transportation Division, and the Fire Department, would review the entitlement plan set to ensure compliance with egress requirements and other fire safety features. Individual projects would be required to incorporate all applicable design and safety requirements as set forth in the most current adopted building codes and fire and life safety standards. Compliance with these standards is ensured through the City review and building plan check process. Based on the preceding, impacts related to emergency access were found to be less than significant.

Impacts of the Proposed Project

The proposed project would allow for up to 4,399 more units in the Solano Avenue, North Shattuck Avenue, and College Avenue Corridors, which are areas served by AC Transit, and therefore would increase the transit ridership for AC Transit and BART. However, AC Transit and BART monitor and plan for anticipated changes in local and regional ridership levels and increased demand through their ongoing evaluation of routes, schedules, ridership, and capacity availability. Therefore, similar to the HEU, the proposed project would not conflict with AC Transit's or BART's ongoing efforts for facility improvement or capital improvement project planning.

The proposed project would concentrate development in the three corridors which are TPAs, and would place residents in proximity to jobs, services, and transit, which would encourage walking, bicycling, and the use of alternative modes of transportation. Future development would be reviewed in accordance with the City's Public Works Department Transportation Program standards, which would provide oversight engineering review to ensure that the project is constructed according to City standards. Thus, the proposed project would also be consistent with the City's 2017 *Bicycle Plan*. The proposed project does not include modifications to the public right-of-way and, therefore, would not preclude the installation of the planned or proposed bicycle facilities on the streets in the city. Development facilitated by the proposed project would provide long-term and short-term bicycle parking in accordance with BMC Section 23.322.090 requirements to accommodate the bicycle parking demand generated by the project residents and would also be required to meet applicable requirements for pedestrian access under BMC Section 23.304.100 or other requirements as applicable. Therefore, the proposed project would not conflict with the City's Bicycle Master Plan or the City's Pedestrian Plan, and impacts would be less than significant, similar to the adopted HEU.

As discussed in the 2023 EIR, the City of Berkeley has adopted thresholds to evaluate significant impacts for VMT. For residential uses, the City of Berkeley adopted a threshold of significance for VMT analysis based on the guidance from OPR that a residential project's VMT impact is considered less than significant if its household VMT per capita is at least 15 percent below the regional average household VMT per capita. Therefore, an increase in VMT per capita above 16.72 VMT (15 percent below the regional average of 19.67) would be considered a significant impact. As discussed in the VMT Memo prepared by Kittelson & Associates (see Appendix C), all three corridors would satisfy the City's VMT screening criteria since all three are located within a TPA and are proximate to high-quality transit. Therefore, VMT calculations were provided for informational purposes only. Table 10 summarizes the VMT for the applicable threshold, 2020 baseline, the adopted HEU, and the proposed project. As shown in Table 10, the proposed project would result in a decreased VMT per capita in comparison to the baseline 2020 condition and a slightly increased VMT per capita in comparison to the adopted HEU. Residential VMT per capita would decrease by 2.4 percent, from 11.22 to 10.95, compared to the baseline 2020 condition, and increase slightly by 1 percent, from 10.84 to 10.95, compared to the HEU. This indicates that the future residential development would provide more opportunities for residents and employees to access jobs and services within the City within shorter distances and by modes other than vehicle. Although the VMT per capita increases slightly compared to the adopted HEU, the overall VMT per capita for the proposed project is still below the 15 percent below regionwide baseline average threshold of 16.72. Therefore, the proposed project would result in VMT per capita below applicable thresholds and impacts would be less than significant, similar to the HEU.

Furthermore, as shown in Table 10, the proposed project would reduce VMT per employee by 5.9 percent, from 12.41 to 11.68, compared to the 2020 baseline, and by 0.2 percent from 11.70 to 11.68, compared to the adopted HEU. The resulting VMT per employee from the proposed project would remain below the regional significance threshold of 15.06 (15 percent below the regional average of 17.72). Therefore, VMT per employee impacts would be less than significant.

Table 10 VMT Results Summary

Units	Bay Area Region 2020	Berkeley 2020	Adopted HEU (2040)	Proposed Project (2040)
VMT per Capita				
Population	7,915,267	128,004	192,641	203,785
Residential VMT	155,707,636	1,436,244	2,088,198	2,230,694
Household VMT Per Capita	19.67	11.22	10.84	10.95
VMT per Employee				
Employment	4,193,411	115,388	121,710	121,488
Employment VMT	73,353,557	1,432,159	1,423,654	1,418,564
VMT per Employee	17.72	12.41	11.70	11.68

Source: Kittelson & Associates, Inc. 2026 (Appendix C)

Similar to the HEU, the proposed project's changes would only include residential development, and would not include hazardous geometric design features or incompatible uses. Each housing application would be evaluated at the project-specific level. Circulation components and geometric design features would be reviewed by the City Engineering division and would be in accordance with all applicable City standards and the building plan check process to minimize design hazards. Design review standards include standards for project access points, location, design, sight lines, roadway modifications, provisions for bicycle and pedestrian transportation connections, and emergency access. Future development facilitated by the proposed project would be required to comply with basic building designs and standards for residential buildings as mandated by the Berkeley Fire Code, pursuant to BMC Chapter 19.48. As part of the development review process, representatives from several City departments and representatives, including the Building and Safety Division, the Transportation Division, and the Fire Department, would review the proposed development plan set to ensure compliance with emergency access requirements and other fire safety features. Future projects would be required to incorporate all applicable design and safety requirements as set forth in the most current building codes and fire and life safety standards, which would reduce impacts related to emergency access. Therefore, as was found in the 2023 EIR, the proposed project would have less than significant impacts related to safety hazards and emergency access.

Effects and Mitigation Measures

No new or substantially more severe significant effects would occur to transportation and circulation, and no new or revised mitigation measures are required.

Conclusion

The proposed project would have less than significant impacts with respect to transportation. No substantial changes have occurred that require major revisions to the 2023 EIR. There is no new information indicating that the proposed project would have new significant impacts or substantially more severe significant impacts with respect to transportation than were identified in the 2023 EIR. None of the conditions listed in *CEQA Guidelines* Section 15162 requiring preparation of a subsequent EIR have been met.

5.15 Tribal Cultural Resources

Impacts Identified in the 2023 EIR

As discussed in Section 4.15, *Tribal Cultural Resources*, of the 2023 EIR, ground-disturbing activities associated with the HEU could expose and adversely affect previously unidentified subsurface

archaeological resources that may qualify as tribal cultural resources. However, impacts would be less than significant with adherence to the City's Standard COAs related to archaeological resources and human remains set forth above under Section 4.4, *Cultural Resources*, as well as Mitigation Measure TCR-1, which was adopted and incorporated into the HEU and would require tribal cultural monitoring.

Impacts of the Proposed Project

Based on the results of AB 52 and SB 18 consultation conducted as part of preparation of the 2023 EIR, tribal cultural resources were found to be potentially present in areas near the waterfront and near Indian Rock. Although the proposed project would increase potential buildout in the Solano Avenue, North Shattuck Avenue, and College Avenue Corridors compared to what was analyzed in the 2023 EIR by up to 4,399 units, development facilitated by the proposed project would be concentrated on redevelopment sites and would not be within the areas determined by consulting tribes to be sensitive for tribal cultural resources. The project includes amendments to the General Plan, and therefore required Tribal Consultation, pursuant to AB 52. The California Native American Heritage Commission provided contact information for tribes potentially affected by the project, and the City sent letters to these tribes. No tribes requested consultation within the deadline. Similar to what was concluded in the 2023 EIR, it can be assumed that no tribal cultural resources have been identified. Nonetheless, similar to the HEU, ground-disturbing activities associated with individual development projects under the proposed project could expose previously unidentified subsurface archaeological resources that may qualify as tribal cultural resources and could be adversely affected by construction. Additionally, the proposed project would allow increased building heights as described in Appendix A, which could require increased subgrade excavation due to deeper foundations and thereby increase the likelihood of encountering tribal cultural resources. Nonetheless, although the proposed project could facilitate development of up to a projected 8 stories as outlined in Appendix A, the building footprint and area of ground disturbance would stay the same as analyzed under the 2023 EIR, and the geographic extent of subsurface disturbance would not expand into new areas that have not already been evaluated. Furthermore, future projects subject to CEQA and SB 35 would require project-specific tribal cultural resource identification and consultation and incorporation of the appropriate avoidance, minimization, or mitigation identified through the consultation process. In addition, the City's Standard COA related to the protection of archaeological resources and human remains (including remains that are determined to be of Native American origin) would apply to future development. In addition to the City's Standard COAs related to the protection of archaeological resources and human remains set forth in full in Addendum Section 5.4, *Cultural Resources*, previously adopted Mitigation Measure TCR-1 would be required to be implemented and would reduce impacts to tribal cultural resources to a less than significant level.

Effects and Mitigation Measures

No new or substantially more severe significant effects would occur to tribal cultural resources, and no new mitigation measures are required. Berkeley's Standard COAs related to archaeological resources and human remains, set forth above in Section 5.4, *Cultural Resources*, which apply to the HEU as a whole, would remain applicable. Previously adopted 2023 EIR Mitigation Measure TCR-1 also would remain applicable and would continue to be implemented and monitored.

TCR-1 Tribal Cultural Monitoring

For future projects that are determined through tribal consultation to potentially affect tribal cultural resources, in order to mitigate potential adverse impacts to Native American cultural objects and human remains discovered during construction, tribal cultural monitors will be retained to monitor work done in areas of Tribal concern, as determined through tribal consultation. If Native American cultural objects and/or human remains are discovered during construction, work shall be halted within 100 feet of the discovery until the objects have been inspected and evaluated by tribal cultural monitors and a qualified archaeologist meeting the Professional Qualifications Standards of the Secretary of the Interior (36 CFR Part 61). The archaeologist shall, in accordance with the appropriate Guidelines, identify and evaluate the

significance of the discovery and develop recommendations for treatment in consultation with the affected Tribe to ensure any impacts to the cultural resource are less than significant. The preferred mitigation is avoidance. If avoidance is not feasible, project impacts shall be mitigated in consultation with the affected Tribe consistent with the *CEQA Guidelines for Determining the Significance of and Impacts to Cultural Resource, Archaeological Historic and Tribal Cultural Resources*. Such mitigation may include, but is not limited to, additional archaeological testing, archaeological monitoring and/or an archaeological data recovery program. A Native American monitor shall be retained to monitor the ground disturbance when it is suspected that a TCR might be encountered.

Conclusion

The proposed project would have less than significant impacts with mitigation with respect to tribal cultural resources. No substantial changes have occurred that require major revisions to the 2023 EIR. There is no new information indicating that the proposed project would have new significant impacts or substantially more severe significant impacts with respect to tribal cultural resources than were identified in the 2023 EIR. None of the conditions listed in *CEQA Guidelines* Section 15162 requiring preparation of a subsequent EIR have been met.

5.16 Utilities and Service Systems

Impacts Identified in the 2023 EIR

As discussed in Section 4.16, *Utilities and Service Systems*, of the 2023 EIR, development under the HEU would increase water demand in the City by an estimated 0.96 million gallons per day (mgd), or approximately 0.5 percent, above the 2030 East Bay Municipal Utility District (EBMUD) water service area demand estimate of 190 mgd. The increase of 0.5 percent from the projected 2030 water demand in EBMUD's Urban Water Management Plan (UWMP) would also increase the gallons per capita per day (GPCD) from 121 GPCD to 127 GPCD. However, this would still be well below the EBMUD service area water reduction goal of 153 GPCD by 2020. Therefore, EBMUD infrastructure and facilities would have adequate capacity to service the HEU, and construction and operation of development facilitated by the HEU would not require new or expanded water supply facilities. With demand management during multi-year droughts, as required by EBMUD, impacts of HEU related to water supply would be less than significant.

As discussed in Section 4.16, *Utilities and Service Systems*, of the 2023 EIR, the HEU existing stormwater infrastructure, electricity and natural gas facilities, and telecommunications infrastructure would be able to accommodate the increased demand under the HEU, and the construction or relocation of facilities would not be required.

Lastly, the 2023 EIR found that the HEU would generate 23.7 cubic yards of solid waste per day or 8,651 cubic yards of solid waste per year, which would be 0.013 percent of the total remaining capacity of 65.4 million cubic yards of the Altamont Landfill. Therefore, impacts to solid waste were found to be less than significant.

Impacts of the Proposed Project

Similar to the HEU, the proposed project would facilitate development on redevelopment sites within the city that are already served by existing utility infrastructure. New water service connections would be consistent with utility connections in urbanized areas, such that minimal areas of new disturbance would occur. Although virtually all parcels in Berkeley have access to public utility infrastructure, in some cases the infrastructure is older and in need of replacement or insufficient to meet the needs of a particular project. Future developers would be responsible for funding infrastructure improvements that are required to serve future projects and have not been previously identified as part of a capital improvement program covered by development impact fees. Consistent with applicable State law, the City's development fees ensure that the developers pay the cost attributable to the increased demand for the

affected public facilities reasonably related to the development project in order to ensure that existing facilities are able to maintain the existing level of service and achieve an adopted level of service that is consistent with the City's General Plan (California Government Code Section 66001(g)). The proposed project could increase the number of units in the Solano Avenue, North Shattuck Avenue, and College Avenue Corridors by up to 4,399 units compared to the HEU, which could result in increased demands on water supply. As discussed in the 2023 EIR, the adopted HEU has a projected 2031 water demand of 0.96 mgd. Based on the water generation factor of 50 gpd per unit for multi-family residential uses used in the 2023 EIR, the proposed project would result in an increase in projected water demand by 219,950 gpd, or 0.2 mgd, resulting in a total projected 2031 water demand of 1.16 mgd.[11] The 0.2 mgd increase in water demand would result in a 0.6 percent increase from the 2030 EBMUD service area demand estimate of 190 mgd, which would be a small increase above the 0.5 percent increase from the HEU. As discussed in the 2023 EIR, the EBMUD service area has a water reduction goal of 153 gallons per capita per day (GPCD) by 2020. Based on the increase of approximately 0.5 percent from the projected 2030 water demand in EBMUD's UWMP, estimated GPCD with implementation of the proposed project would be 127 GPCD, which would still be well below the targeted 153 GPCD. Future development facilitated by the project would be required to comply with water conservation regulations and policies which would help maintain sufficient supplies, such as California Code of Regulations (CCR) Title 24, Part 11 (CALGreen), the State's Water Efficient Landscaping Ordinance (WELO) and EBMUD's Section 31. Therefore, similar to the HEU, there would be sufficient water supplies available to serve development facilitated by the proposed project, and impacts would be less than significant.

EBMUD's Main Wastewater Treatment Plant (MWWTP) provides wastewater collection and treatment to Berkeley, currently treating an average daily flow of approximately 63 mgd. As discussed in the 2023 EIR, EBMUD projects that 61 mgd of wastewater will be collected and treated in the EBMUD Special District No.1 by 2040. Applying the same wastewater generation factor for multi-family residential development of 40 gpd per unit as the 2023 EIR, the proposed project would generate an additional 175,960 gpd of wastewater, for a total of 941,678 gpd of wastewater when combined with the adopted HEU.[12] This would be approximately 0.3 percent of the wastewater collected and treated in the district by 2040, which would be a negligible increase from the 1.3 percent increase projected in the 2023 EIR for the adopted HEU as a whole. New development would be required to comply with the City's Private Sewer Lateral Ordinance, by eliminating wet-weather infiltration and inflow to private sewer laterals, which would regulate wet-weather contribution from the proposed project. Although construction of new or expanded sewer mains may be necessary to accommodate additional wastewater flow, the precise sizing of new wastewater conveyance pipes would be determined at the time of installation and would be subject to the approval of the City to ensure that the system would be adequate. The impacts of sewer main construction projects would be less than significant due to their temporary nature, adherence to existing requirements, and the already developed nature of wastewater conveyance corridors. Impacts of construction of projects facilitated by the proposed project are analyzed comprehensively throughout this Addendum and the 2023 EIR (within Section 5.2, *Air Quality*; 5.3, *Biological Resources*; 5.4, *Cultural Resources*; 5.6, *Geology and Soils;* 5.8, *Hazards and Hazardous Materials*; 5.9, *Hydrology and Water Quality*; 5.11, *Noise*; and 5.14, *Transportation*, 5.15, *Tribal Cultural Resources*). Future development facilitated by the proposed project would also be required to comply with BMC Title 17 which establishes City standards related to wastewater discharge, peak flow, and sewer capacity, and future applicants desiring to construct a new connection to the City's sanitary sewer system would be required to pay a connection fee in the amount as established by City Council resolution. Therefore, similar to the HEU, impacts related to wastewater would be less than significant.

Impacts regarding stormwater drainage facilities are discussed in Section 5.9, *Hydrology and Water Quality*, of this Addendum. As discussed in that section, the proposed project would be required to comply with existing State and local laws and regulations, which would not result in the relocation or construction of new or expanded storm water drainage facilities, and impacts would be less than significant, similar to the HEU. Although the proposed project would allow for up to 4,399 more units in

[11] 0.96 mgd (adopted HEU) + 0.2 mgd (proposed project) = 1.16 mgd (total water demand)
[12] 765,688 gpd (adopted HEU) + 175,960 gpd (proposed project) = 941,648 gpd

the three corridors compared to the adopted HEU, new development would be served by existing electrical, natural gas, and telecommunications infrastructure, and impacts would be less than significant.

As discussed in the 2023 EIR, the Altamont Landfill is an active landfill that can accommodate solid waste from Berkeley. This landfill has a combined remaining capacity of approximately 65.4 million cubic yards. Using the same waste generation rate of 4 pounds per unit per day as the 2023 EIR, the proposed project would generate an estimated 17,596 pounds per day of waste (4,399 units * 4 pounds per day = 17,596 pounds), or 17.6 cubic yards per day of waste. Assuming a 69 percent diversion rate, which the City of Berkeley has achieved and that exceeds the State requirement of 50 percent diversion, the proposed project would generate an estimated 5,455 pounds per day of waste, or 5.5 cubic yards per day of waste. This would equate to a total of 29,137 pounds per day of waste,[13] or 29.2 cubic yards per day of waste[14] when combined with the adopted HEU. The increase in waste generated by the proposed project per year would account for approximately 0.00003 percent of the current total remaining landfill capacity, which is an insignificant increase compared to the 0.013 percent as analyzed in the 2023 EIR for the adopted HEU. Therefore, impacts related to solid waste would be less than significant, similar to the HEU.

Effects and Mitigation Measures

No new or substantially more severe significant effects would occur to utilities and service systems, and no new mitigation measures are required.

Conclusion

The proposed project would have less than significant impacts with respect to utilities and service systems. No substantial changes have occurred that require major revisions to the 2023 EIR. There is no new information indicating that the proposed project would have new significant impacts or substantially more severe significant impacts with respect to utilities and service systems than were identified in the 2023 EIR. None of the conditions listed in *CEQA Guidelines* Section 15162 requiring preparation of a subsequent EIR have been met.

5.17 Wildfire

Impacts Identified in the 2023 EIR

As discussed in Section 4.17, *Wildfire*, of the 2023 EIR, 82 units of the HEU would be located in Fire Zones 2 and 3, which are considered Very High Fire Hazard Severity Zones (VHFHSZ). The HEU would also facilitate increased residential development in the R-1, R-2, and R-2A districts, which include portions within the VHFHSZ. Development facilitated by the HEU would be subject to the City's Standard COA to prepare a Transportation Construction Plan, which would limit the extent to which development would impair or physically interfere with adopted emergency response or evacuation procedures. Development also would be required to comply with existing City regulations and prepare a Fire Protection Plan for housing projects in the Wildland-Urban Interface Fire Area, which would reduce the potential to exacerbate wildfire risk during construction and after projects are constructed. This would also reduce the severity of potential impacts related to exposure to pollutant concentrations from a wildfire or the likelihood of wildfire ignition. Furthermore, as required by the Public Resources Code (PRC) Section 2690-2699.6, *Seismic Hazards Mapping Act* and CBC requirements as adopted in Chapter 19.28 of the BMC, site-specific geotechnical investigations would be required which would reduce potential impacts related to landslides, post-fire slope instability, or drainage changes following a potential wildfire for individual future development projects. Nonetheless, for some development projects, impacts may result from the

[13] 23,682 pounds per day (HEU) + 5,455 pounds per day (proposed project) = 29,137 pounds per day
[14] 23.7 cubic yards per day (HEU) + 5.5 cubic yards per day (proposed project) = 29.2 cubic yards per day

potential for unusual site-specific or road conditions, project characteristics, and the general ongoing fire risk in the Berkeley Hills; therefore, impacts were found to be significant and unavoidable.

The 2023 EIR found that new development could require the installation and maintenance of new or improved roads, emergency water sources, power lines or other utilities, the construction and operation of which could introduce potential sources of wildfire ignition, such as the sparking of an overhead power line or construction equipment or the operation of resident vehicles. Although Mitigation Measure W-1, which was adopted and incorporated into the HEU and would reduce potential risks by requiring power lines to be placed underground in areas subject to wildfire risk, it may not be feasible to impose the requirement on all projects. Potentially unusual site-specific conditions or aspects of a specific infrastructure project, including power line installation, may result in wildfire impacts from the installation or maintenance of infrastructure required by buildout of the HEU. Therefore, this impact was also found to be significant and unavoidable.

Impacts of the Proposed Project

As outlined under Ordinance 7958 N.S., none of the three corridors are located within a VHFHSZ. The North Shattuck Corridor is located approximately 0.1 mile west of a HFHSZ (City of Berkeley 2026).

Compared to the HEU, the proposed project would allow up to 4,399 additional units in the three corridors and could facilitate building heights of up to an estimated 8 stories, which could increase the number of residents exposed to wildfire risk and the number of evacuees on City streets during a citywide wildfire event. However, there are several streets in the three corridors that are designated as emergency access routes such as College Avenue, Cedar Street, Shattuck Avenue, Rose Street, and Ashby Avenue to move people and emergency response equipment in a disaster, and the traffic increase that would result from new development in the three corridors would not substantially impact one route and would be distributed among existing routes (City of Berkeley 2011). 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 Chapter 19.49 prohibits storage of materials or structures, including construction equipment, at public access roads within the VHFHSZ. Similar to the HEU, the proposed project would also be subject to the City's Standard COA related to preparation of a Transportation Construction Plan which would limit the extent to which development would impair or physically interfere with adopted emergency response or evacuation procedures.

> Transportation Construction Plan. The applicant and all persons associated with the project are hereby notified that a Transportation Construction Plan (TCP) is required for all phases of construction, particularly for the following activities:
>
> - Alterations, closures, or blockages to sidewalks, pedestrian paths or vehicle travel lanes (including bicycle lanes);
> - Storage of building materials, dumpsters, debris anywhere in the public ROW;
> - Provision of exclusive contractor parking on-street; or
> - Significant truck activity.
>
> The applicant shall secure the City Traffic Engineer's approval of a TCP. Please contact the Office of Transportation at 981-7010, or 1947 Center Street, and ask to speak to a traffic engineer. In addition to other requirements of the Traffic Engineer, this plan shall include the locations of material and equipment storage, trailers, worker parking, a schedule of site operations that may block traffic, and provisions for traffic control. The TCP shall be consistent with any other requirements of the construction phase.
>
> Contact the Permit Service Center (PSC) at 1947 Center Street or 981-7500 for details on obtaining Construction/No Parking Permits (and associated signs and accompanying dashboard permits). Please note that the Zoning Officer and/or Traffic Engineer may limit off-site parking of construction-related vehicles if necessary to protect the health, safety or convenience of the surrounding

neighborhood. A current copy of this Plan shall be available at all times at the construction site for review by City Staff.

Therefore, while traffic increases associated with buildout facilitated by the proposed project would affect streets within the three corridors, designated access routes would still serve as evacuation routes in case of emergency. Future development would also be required to conform to the latest fire code requirements, including provisions for emergency access. Since none of the three corridors are located within a VHFHSZ, impacts would be less than significant and reduced compared to the HEU.

The three corridors are urbanized, largely consisting of concrete roads, driveways, parking lots, and structures. Existing vegetation within the three corridors that could provide fuel for a wildfire is minimal. However, wildfires may potentially occur in wildland and open space areas east of the three corridors and spread to the three corridors. In addition, the new housing allowed under the proposed project would replace existing ignition sources in the form of new 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 occupants to pollutant concentrations or the uncontrolled spread of wildfire. However, new development facilitated by the proposed project would be required to comply with the California Fire Code, as well as BMC Chapter 19.49, which requires that all new utilities serving new construction, including electrical, telephone, and cable television, be installed underground. Moreover, development facilitated by the proposed project would be subject to review by the 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 three corridors. Therefore, with adherence to State and local regulations, impacts would be less than significant and reduced compared to the HEU.

Because the three corridors are highly urbanized, development facilitated by the proposed project would not introduce new impervious areas to the extent that the rate or amount of surface runoff would substantially increase. In addition, the three corridors are relatively flat and are not located within a VHFHSZ. Therefore, the proposed project would not expose people and structures to significant risks, including landslides, as a result of runoff, post-fire slope instability, or drainage changes. Impacts would be less than significant and reduced compared to the HEU.

Effects and Mitigation Measures

No new or substantially more severe significant effects would occur to wildfire, and no new mitigation measures are required.

Conclusion

The proposed project would have less than significant impacts with respect to wildfire. No substantial changes have occurred that require major revisions to the 2023 EIR. There is no new information indicating that the proposed project would have new significant impacts or substantially more severe significant impacts with respect to wildfire than were identified in the 2023 EIR. None of the conditions listed in *CEQA Guidelines* Section 15162 requiring preparation of a subsequent EIR have been met.

6 Cumulative Impacts

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

CEQA Guidelines Section 15130 requires cumulative impact analysis in EIRs to consider either a list of planned and pending projects that may contribute to cumulative effects or a summary of projections contained in an adopted planning document such as a general plan.

6.1 Impacts Identified in the 2023 EIR

The cumulative setting for the analysis in the 2023 EIR is explained in Section 3, *Environmental Setting,* of the 2023 EIR. As stated in that section, some analyses including air quality, energy, greenhouse gas emissions, transportation, and population and housing rely on larger geographic areas, such as the Bay Area region. For issues that may have regional cumulative effects, the cumulative impact analysis in the 2023 EIR was based on Plan Bay Area 2040, the Bay Area's most recent Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS). Based on the forecasts in Plan Bay Area 2040, in 2040 Berkeley is estimated to have a population of 140,900, 55,400 housing units, and 121,700 jobs. Development under the HEU in conjunction with development forecasted in Plan Bay Area 2040 is accounted for in the cumulative impacts analysis.

For analyses that may have more localized or neighborhood implications (biological resources, cultural resources, noise, public services, utilities, wildfire), the cumulative impact analysis includes development proposed under UC Berkeley's LRDP and Housing Projects #1 and #2 as described in the University's Draft EIR dated March 8, 2021 (University of California, Berkeley 2021). The 2021 LRDP planning assumption for the campus population is 48,200 students and 19,000 faculty and staff in the 2036-37 academic year compared to 39,300 students and 15,400 faculty and staff in the 2018-19 academic year. The LRDP also assumes 9,325,88 square feet of development on non-campus University properties throughout Berkeley (including Housing Projects #1 and #2) compared to 4,640,769 square feet of development in 2018-2019.

Cumulative impacts associated with the HEU in combination with cumulative development were analyzed in Sections 4.1 through 4.17 of the 2023 EIR. The 2023 EIR found that cumulative development pursuant to the HEU and the LRDP would have the potential to impact historical resources. Historic-period resources could be vulnerable to development activities that could result in damage to or demolition of cultural resources. The HEU would result in significant and unavoidable impacts to historical resources. Implementation of previously-adopted Mitigation Measures CUL-1 and CUL-2, which were adopted and incorporated into the HEU, would reduce or avoid some but not all potential impacts to historical resources in Berkeley. Therefore, cumulative impacts to historical resources would be significant, and the HEU's contribution would be cumulatively considerable.

According to the Berkeley General Plan Environmental Management Element, noise-sensitive uses include but are not limited to residences, child-care centers, hospitals, and nursing homes (City of Berkeley 2001). The 2023 EIR found that construction of future development projects in Berkeley would produce temporary noise impacts that would be localized to a project site and could affect noise-sensitive receptors within the immediate vicinity. Therefore, only sensitive receptors located in proximity to each

construction site would be potentially affected by each activity. However, construction activities associated with individual housing development projects accommodated under the HEU may overlap for some time with construction activities for other development projects. Based on the locations of the potential housing sites included in the HEU and shown in Figure 2-4 of Section 2, *Project Description*, of the 2023 EIR this could substantially increase noise levels at specific neighboring noise-sensitive receivers since many sites are located in proximity to each other. Therefore, concurrent construction of development projects facilitated by the HEU could result in cumulatively considerable impacts. This impact would be cumulatively considerable and cumulative impacts would be significant and unavoidable.

The 2023 EIR also found that in and near Berkeley, the VHFHSZs are located largely along the WUI borders within the hilly northwestern areas. Within the geographic scope for this cumulative analysis wildfire-related impacts could be significant if development is in or near Berkeley's VHFHSZ. The University's proposed LRDP update would involve improvements and development in Campus Park, the Hill Campus West, the Hill Campus East, the Clark Kerr Campus, and the City Environs Properties, areas of which fall within the VHFHSZ. Development within this area could exacerbate wildfire risks. Like development under the HEU, new development under the LRDP would be subject to statewide standards for fire safety in the California Fire Code. Nonetheless, because the proposed HEU could exacerbate wildfire risk in a VHFHSZ and development under the proposed LRDP update could also exacerbate such risks, a cumulative impact would occur and the proposed projects' contribution would be cumulatively considerable.

For all other impact areas, the 2023 EIR found that the HEU would not result in cumulatively considerable impacts.

6.2 Impacts of the Proposed Project

Because the conditions in the 2023 EIR are substantially the same as the current conditions in the city and region, the cumulative setting in the 2023 EIR has not changed and remains the same for the purposes of this analysis. Projects proposed, pending, and completed since adoption of the 2023 EIR generally fall within the cumulative setting evaluated in the 2023 EIR. The proposed project would not result in new impacts compared to the HEU as analyzed in the 2023 EIR. Like the HEU, the proposed project would result in impacts related to historical resources and construction noise. As discussed in Section 5.4, *Cultural Resources*, existing and eligible historical resources could be materially impaired by future development that would be facilitated by the proposed project, which could occur when specific actions intended for the reduction of impacts to historical resources are determined to be infeasible, or when future projects that are not subject to discretionary review on sites with structures that have not been previously evaluated to initiate a landmark or structure-of-merit designation result in the demolition of potential but unknown historic resources. As discussed in Section 5.11, *Noise*, construction noise levels could still exceed the City's standards for stationary equipment in both multi-family residential and commercial zones, and could exceed the City's standards at multiple sites where the proposed project would facilitate development in the Solano Avenue, North Shattuck Avenue, and College Avenue Corridors. Therefore, the proposed project would result in cumulatively considerable impacts related to historical resources and construction noise, even with implementation of previously adopted Mitigation Measures CUL-1 and CUL-2, as well as the City's Standard COAs related to historical resources and construction noise.

As discussed above under Section 5.17, *Wildfire*, since none of the three corridors are located within a VHFHSZ, impacts related to wildfire would be less than significant and reduced compared to the HEU. Similar to the HEU, the proposed project would result in less than significant cumulative impacts related to all other impact areas with adherence to State and local regulations as well as the City's Standard COAs; therefore, the proposed project would not result in a cumulatively considerable contribution to a cumulative impact.

6.3 Effects and Mitigation Measures

No new or substantially more severe significant effects would occur to cumulative impacts, and no new mitigation measures are required.

6.4 Conclusion

The proposed project would have cumulatively considerable impacts related to historical resources and construction noise, and less than significant cumulative impacts with respect to all other impact areas. No substantial changes have occurred that require major revisions to the 2023 EIR. There is no new information indicating that the proposed project would have new significant impacts or substantially more severe significant impacts with respect to cumulative impacts than were identified in the 2023 EIR. None of the conditions listed in *CEQA Guidelines* Section 15162 requiring preparation of a subsequent EIR have been met.

7 Conclusion

As discussed in detail in the preceding sections, potential impacts associated with the proposed project are consistent with potential impacts disclosed in the 2023 EIR. Major revisions to the 2023 EIR are not required, because no new significant impacts or significant impacts of substantially greater severity than previously described would occur because of the proposed project. Therefore, the conditions outlined in *CEQA Guidelines* Section 15162(3)(A) and (D) for preparation of a subsequent EIR would not be met.

Based on the analysis contained in this Addendum, the following determinations are applicable:

- No further evaluation of environmental impacts is required for the proposed project.
- No subsequent EIR is required pursuant to *CEQA Guidelines* Section 15162.
- This Addendum is the appropriate level of environmental analysis and documentation for the proposed project pursuant to *CEQA Guidelines* Section 15164.

Pursuant to *CEQA Guidelines* Section 15164(c), the decisionmaking body of the City will consider this Addendum along with the 2023 EIR prior to making a decision on the proposed project. Documents related to this Addendum will be available at the City of Berkeley Planning & Development Department, located at 1947 Center Street in Berkeley, California 94704.

8 References and Preparers

8.1 References

Alameda County Community Development Agency. 2010. Oakland International Airport Land Use Compatibility Plan. https://www.acgov.org/cda/planning/generalplans/documents/OAK_ALUCP_122010_FULL.pdf

Bay Area Air Quality Management District (the Air District). 2023. California Environmental Quality Act Air Quality Guidelines. https://www.baaqmd.gov/~/media/files/planning-and-research/ceqa/ceqa-guidelines-2022/ceqa-guidelines-chapter-0-cover-page-pdf.pdf?la=en

Berkeley, City of. 2001. General Plan. https://berkeleyca.gov/your-government/our-work/adopted-plans/general-plan

_____. 2011. Berkeley Emergency Access and Evacuation Routes. https://berkeleyca.gov/sites/default/files/documents/Berkeley-Emergency-Access-Evacuation-Routes-06-2011.pdf

_____. 2019. 2019 Local Hazard mitigation Plan. Adopted December 10, 2019. https://berkeleyca.gov/sites/default/files/2022-01/Local-Hazard-Mitigation-Plan-2019.pdf

_____. 2023a. City of Berkeley 2023-2031 Housing Element Update Environmental Impact Report. https://berkeleyca.gov/construction-development/land-use-development/general-plan-and-area-plans/housing-element-update

_____. 2023b. Hazardous Materials Business Plan website. https://berkeleyca.gov/doing-business/operating-berkeley/hazardous-materials-business-plan

_____. 2023c. Private Sewer Lateral website. https://berkeleyca.gov/city-services/streets-sidewalks-sewers-and-utilities/private-sewer-lateral

_____. 2025. List of Designated City Landmarks, Structures of Merit, and Historic Districts. Updated October 6, 2025. https://berkeleyca.gov/sites/default/files/documents/COB%20Landmarks%20Updated%20Jan%202023_0.pdf

_____. 2026. City of Berkeley Community GIS Portal. https://berkeley.maps.arcgis.com/apps/webappviewer/index.html?id=2c7dfafbb1f64e159f4fdf28a52f51c6&showLayers=Berkeley%20Parcels;Environment

Berkeley Unified School District (BUSD). 2016. School Facility Fee Justification Report for Residential, Commercial & Industrial Development Projects for the Berkeley Unified School District. Berkeley, CA. September 2016. https://www.berkeleyschools.net/wp-content/uploads/2016/11/Berkeley-USD-Level-I-2016-FINAL-10-10-2016.pdf

California Air Resources Board (CARB). 2005. Air Quality and Land Use Handbook: A Community Health Perspective. April 2005.

California Department of Transportation (Caltrans). 2023. Traffic Volumes. https://dot.ca.gov/programs/traffic-operations/census

California Environmental Protection Agency (Cal EPA). 2023. California Accidental Release Prevention Program. https://calepa.ca.gov/california-accidental-release-prevention/

Ed-data.org. 2022. “District Summary, Berkeley Unified.” https://www.ed-data.org/district/Alameda/Berkeley-Unified

Federal Transit Administration (FTA). 2018. *Transit Noise and Vibration Impact Assessment Manual*. https://www.transit.dot.gov/sites/fta.dot.gov/files/docs/research-innovation/118131/transit-noise-and-vibration-impact-assessment-manual-fta-report-no-0123_0.pdf

Graymer, R.W. 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 Map MF-2342, scale 1:50,000.

Illingworth & Rodkin, Inc. 2019. Noise and Vibration Impacts from Residences Proposed at 325 Yolanda Avenue, Santa Rosa, CA. January 2019. https://files.ceqanet.opr.ca.gov/251916-2/attachment/m3VESve0Ky6z2njk58vk2yOfZP3inTgJtvC2_VPKqE0Ple__ZYeJyIgz1Vy_7PGcsn5TXsIqZP49OpMG0

Metropolitan Transportation Commission (MTC). 2021. Transit Priority Area map viewer. https://www.arcgis.com/home/item.html?id=370de9dc4d65402d992a769bf6ac8ef5

Office of Environmental Health Hazard Assessment (OEHHA). 2015. Air Toxics Hot Spots Program Guidance Manual for Preparation of Health Risk Assessments. https://oehha.ca.gov/air/crnr/notice-adoption-air-toxics-hot-spots-program-guidance-manual-preparation-health-risk-0

Society of Vertebrate Paleontology (SVP). 2010. Standard Procedures for the Assessment and Mitigation of Adverse Impacts to Paleontological Resources. Society of Vertebrate Paleontology Impact Mitigation Guidelines Revision Committee.

State Water Resources Control Board (SWRCB). 2026a. Former Norge Laundry and Dry Cleaning Village. https://geotracker.waterboards.ca.gov/profile_report.asp?global_id=SL0600118651

_____. 2026b. Former College Cleaners. https://geotracker.waterboards.ca.gov/profile_report.asp?global_id=SL0600115988

U.S. Department of Agriculture (USDA). 2025. Natural Resources Conservation Service (NRCS), Web Soil Survey of Alameda County, California. https://websoilsurvey.sc.egov.usda.gov/App/WebSoilSurvey.aspx

U.S. Fish and Wildlife Service (USFWS). 2025. National Wetlands Inventory. https://fwsprimary.wim.usgs.gov/wetlands/apps/wetlands-mapper/

8.2 List of Preparers

Persons and firms involved in data gathering, analysis, project management, and quality control include:

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Appendix A

Buildout Assumptions

Memo: Appendix A

May 29, 2026

To: Uttara Ramakrishnan, City of Berkeley
Karly Kaufman, Rincon Consultants
Damian Stefanakis, Kittelson & Associates

From: Chris Sensenig, Raimi + Associates, an Alta Company

Subject: **Berkeley Corridors Zoning Update: CEQA Build-Out Housing Element EIR Addendum Appendix A**

I. Purpose of this Memo

The Berkeley Corridors Zoning Update project will adopt new zoning for three priority corridors designated in the City's 6th Cycle Housing Element: Solano Avenue, North Shattuck, and College Avenue. The purpose of this memo is to describe the estimated buildout scenario across the three project areas and outline the methodology for calculating the estimated buildout numbers for the purposes of CEQA. In response to public comments, the CEQA estimated buildout numbers have been updated and increased to analyze a 100% build-out of sites seen as having high and modest redevelopment potential.

II. Purpose of the Project

The purpose of the Berkeley Corridors Zoning Update is to explore zoning changes to increase housing development in the city's highest-resource areas, specifically along Solano Avenue, North Shattuck, and College Avenue. These areas have been identified as priority corridors by Berkeley City Council and Program 27 of the City's Housing Element 2023-2031 to address housing scarcity, promote fair housing, and overcome barriers to development.

The Berkeley Corridors Zoning Update will change zoning standards to encourage mixed-use and residential development along the three corridors. The Berkeley Corridors Zoning Update does not include redesigning streets, sidewalks, or the public right-of-way along the three corridors nor propose new parks and public open spaces in those areas.

III. CEQA Buildout Methodology

The CEQA analysis assumes new zoning development standards would allow a maximum height of 7stories and a maximum density of 165 dwelling units per acre (du/a) for all parcels within the Solano Avenue (C-SO), North Shattuck (C-NS), and College Avenue (C-E) zoning districts.

The team reviewed the redevelopment potential of parcels within the C-SO, C-NS, and C-E districts based on a number of factors, described below in Section IV, and assumed 100% of parcels analyzed as High and Modest Redevelopment Potential would be redeveloped.

The CEQA buildout scenario looks at projects using the State Density Bonus program to increase density and height. For most of the parcels, the analysis assumes projects will utilize a 50% bonus to maximize mid-rise construction building type up to 8 stories. The density at 8 stories assumes 1,000 gross square feet per unit and 1.5 times the maximum allowable density of 165 du/a for a density of 247 du/a. With a 100% density bonus, projects would be allowed up to 14-17 stories depending on site conditions. At this height, some high-rise projects may be feasible, particularly for larger sites that allow for more efficient buildings. The analysis assumes that sites greater than 12,000 square feet would utilize the 100% bonus up to 330 du/a.

For ground floor commercial, the analysis assumed the Modest Redevelopment Potential sites would be replaced at a 0.2 commercial floor area ratio (FAR). For larger sites, the High Redevelopment Potential sites and the Grocery Stores, ground floor commercial would be replaced at a 0.3 commercial FAR.

Table 1 below summarizes base zoning, height and density assumptions for the purposes of calculating the CEQA buildout. Table 2 outlines the resulting residential and commercial buildout studied in CEQA.

Table 1: Base Zoning, Height and Density Assumptions for CEQA

Assumption	Base Zoning	CEQA Buildout Scenario with Density Bonus		
		Parcels less than 12,000 sf with High and Modest Redevelopment Potential (50% Density Bonus)	Parcels greater than 12,000 sf with High and Modest Redevelopment Potential (100% Density Bonus)	Grocery Stores (100% Density Bonus)
Height Maximum	7 stories	8 stories	14-17 stories	14-17 stories
Density Maximum	165 du/a	247 du/a	330 du/a	330 du/a

Table 2: CEQA Buildout with State Density Bonus

Corridor	Residential			Commercial		
	Existing Residential (units)	Estimated Net New Residential with Proposed Project (units)	Total Residential with Project (units)	Existing Commercial (sf)	Estimated Net Reduction in Commercial with Proposed Project (sf)	Total Commercial with Project (sf)
Solano Avenue	91	1,667	1,758	188,278	(63,582)	124,696
North Shattuck	174	2,638	2,812	343,458	(35,737)	307,721
College Avenue	17	372	389	125,166	(11,468)	113,698
Total	**282**	**4,677**	**4,959**	**656,902**	**(110,788)**	**546,114**
sf = square feet, ( ) denotes subtraction						

Update in Methodology

This memo is an update to an earlier version where an estimate of 1,814 net new units was projected within the project area using a methodology of projecting a likely build-out scenario that assumed a percentage of parcels will redevelop at or below the maximum density for a mid-rise building type. This scenario was considered conservative or overestimate of the expected build-out. After consultation with the City, the new analysis uses a methodology that estimates a 100% build-out of parcels with redevelopment potential at densities that maximize density for mid-rise building types and considers the potential for high-rise building types for certain parcels. This scenario is unlikely to materialize in the near or even long-term future of the corridors but is being used to study the highest density scenario that may be possible under the proposed zoning.

IV. Redevelopment Potential Methodology

To calculate the estimated buildout, parcels in the three project areas were sorted into five categories based on their potential for redevelopment. Category 1 includes parcels with high redevelopment potential and category 5 includes parcels with no redevelopment potential. Below are descriptions of the five categories. The new estimated buildout calculation assumes all of the high and modest redevelopment potential parcels and three grocery store parcels in the project areas will redevelop.

1. High Redevelopment Potential

***1A** Vacant or Corporate Ownership*

This classification includes vacant lots or lots that are owned by corporate owners, such as the bank sites and the CVS pharmacy. These lots have the highest potential to redevelop, as they either don't have an existing use on them, or they are owned by corporations that have the financial capacity to invest in their redevelopment. The sites are favorable for redevelopment, generally about 10,000 square feet or greater parcel size.

***1B** Real Estate Asset*

This classification includes lots that are considered a real estate asset. These include retail centers with established businesses such as the 7-Eleven and Post Office on College and the Virginia Bakery site on Shattuck. The retail centers are on large sites, generally about 10,000 square feet or greater. These lots have a high potential to redevelop as they have a large lot size and capacity for financially feasible building types and don't currently have the highest and best use on them.

2. Modest Redevelopment Potential with Challenges

***2A** Corner and Large Infill Sites*

This classification includes corner lots and large infill sites with 1 to 2 story older buildings on them. Corner lots are more likely to redevelop than infill mid-block parcels due to their ability to provide on-site parking with access from side streets. Infill lots in this classification have the possibility to allow curb cuts for parking access from the corridor. Parcels may have a greater

redevelopment potential if adjoining lots are assembled into larger parcels, particularly with corner lots.

***2B** Small Infill Sites*

This classification includes small infill lots with older buildings on them. These lots have potential to redevelop but are less likely than corner lots due to their inability to provide on-site parking because of a lack of access from side streets. Large and corner lots with rent-controlled units on them have been included in this classification because of complications and costs of relocation of existing residents.

3. Special Conditions for Redevelopment

***3A** Grocery Store*

This classification includes lots with big box grocery stores with surface parking on them. The large sites are ideal for redevelopment, if the grocery store companies decide one or more store locations are no longer viable as grocery stores.

***3B** City-Owned*

This classification includes city-owned lots, including a surface parking lot and a Fire Station. These lots have redevelopment potential, if the City of Berkeley decides to leverage City-owned property for additional housing. These parcels were not considered likely to redevelop because of City need for services and the small size and access issues for the surface parking lot in Elmwood.

4. Very Low Potential, Unlikely to Redevelop

***4A** Sites with Thriving Businesses, Construction Staging Challenges, or Potential Historic Significance*

This classification includes infill or corner lots with older buildings and thriving businesses, construction staging challenges, or potential historic significance. These lots are seen as unlikely to redevelop due to existing successful commercial uses, challenges posed for construction due to street width, and/or potential need for historic mitigation.

***4B** Challenging Site Conditions*

This classification includes infill or corner lots with older buildings on them that have challenging site conditions, such as narrow or shallow lots and may have construction staging challenges. These lots are seen as unlikely to redevelop due to their dimensions. Infill lots with rent-controlled units on them have been included in this classification because of complications and the costs of relocation of existing residents.

5. No Redevelopment Potential

***5** Recent Development, Pipeline Development, Historic Resource, or High-Utilization Sites*

This classification includes lots that have pipeline developments, recent developments, existing historic resources, or lots with high-density and high utilization.

Appendix B

State Density Bonus Analysis

Planning and Development Department

From: Justin Horner, Principal Planner

Date: April 14, 2026

Subject: Analysis of State Density Bonus Projects in Berkeley

INTRODUCTION

The *Berkeley Corridors Zoning Update Project Addendum to the 2023-2031 Housing Element Update Final Environmental Impact Report* (Addendum) incorporates development projections associated with the proposed rezoning of the College Avenue, North Shattuck, and Solano Avenue corridors. These projections account for additional residential capacity that could be realized with the use of the State Density Bonus Law (SDBL).

The assumptions underlying this analysis anticipate that most projects would utilize the SDBL to construct buildings in the 6-8 story range. This memorandum reviews recent SDBL projects in Berkeley to evaluate this assumption, suggests key construction cost factors associated with mid-rise and taller buildings, and summarizes a recent study on the marginal costs of increased building height.

DENSITY BONUS PROJECTS IN BERKELEY

Pursuant to State law, the City prepares an Annual Progress Report (APR) each year on implementation of its General Plan, which is submitted to the State Department of Housing and Community Development. Each APR includes a list of all SDBL projects that received an entitlement, building permit, or Certificate of Occupancy during the prior year.

Attachment 1 compiles all SDBL projects reported in the City's APRs from 2020 to 2025. For each project, it identifies the address, total number of units, building height, zoning district, and the applicable maximum height limit for that district. Attachment 1 shows:

- Of the 82 SDB projects captured in the 2020-2025 APRs, **91%** of them (75 of 82) were 8 stories or fewer.

- Because the Addendum assumes a proposed maximum base height standard of 7 stories for the Corridors, Attachment 1 indicates in bold those SDB projects that are located on sites that allow 7 stories in their zoning district.

  Of the 29 SDB projects on sites that allow 7 stories for the base project, **80%** (or 22 out of 26) were 8 stories or fewer.

- Of the 29 SDB projects on sites that allow 7 stories for the base project, three of them are located in the downtown core and were approved under special Zoning Ordinance provisions that permit an increased height allowance that applies only to a total of five buildings in the downtown core.

  The proposed rezoning does not apply to the downtown and does not include provisions that would include an increased height allowance. Excluding those three special downtown projects leaves a total of 23 SDB projects on sites that allow 7 stories for the base project, 22 of which, or **96**%, of which are 8 stories or fewer.

FACTORS IN CONSTRUCTION

Several factors help explain why many projects tend to top out at approximately 8 stories, most of which relate to construction requirements and associated costs.

- Beyond roughly 6-8 stories, projects typically can no longer rely on wood-frame construction (like Type V construction) and instead must transition to steel or reinforced concrete systems (Type I construction) which increase per square foot material costs. On average, Type 1 constructions costs approximately $65 more per square foot than Type V construction.[1]
- Under the California Health and Safety Code and the California Building Code (CBC), a high-rise structure is defined as a building with an occupied floor located more than 75 feet above the lowest level of fire department vehicle access (Health & Safety Code §13210; CBC §202). Buildings meeting this definition are subject to the additional provisions of CBC §403 (High-Rise Buildings), which includes additional life-safety requirements that are not required for non-high-rise construction.

Together, these factors create meaningful cost and design constraints that can limit the feasibility of construction above the mid-rise range.

The chart on the following page, excerpted from Hannah Hoyt's 2020 paper *More for Less? An Inquiry into Design and Construction Strategies for Addressing Multifamily Housing Costs*,[2] summarizes findings from interviews with more than 30 building industry professionals and illustrates the increase in per square foot construction costs for projects exceeding approximately 6 to 7 stories

[1] Terner Center for Housing Innovation, *The Hard Costs of Construction: Recent Trends in Labor and Materials Costs for Apartment Buildings in California,* March 2020. https://ternercenter.berkeley.edu/wp-content/uploads/2020/08/Hard_Construction_Costs_March_2020.pdf

[2] Hannah Hoyt, *More for Less? An Inquiry into Design and Construction Strategies for Addressing Multifamily Housing Costs*, Harvard Joint Center for Housing Studies, 2020. https://www.jchs.harvard.edu/sites/default/files/media/imp/harvard_jchs_gramlich_design_and_construction_strategies_multifamily_hoyt_2020_3.pdf



	Infill	Low-rise	Mid-rise	High-rise
Names	Duplex, two, three or four-family, garden, walk-up	3-over-1	5-over-1, 5-over-2, 4-over-2	Tower
Construction type	Typically wood	Typically wood	Wood on concrete or steel podium	Concrete or steel
# of Floors	3 stories, up to 6 in older buildings	1-3 stories	4-7 stories	Unlimited by IBC, dictated by zoning, usually 12 + stories
# of Units	~1-4 units	~5-50 units	~50-200 units	~4-20+ units/floor
Circulation	Typically single stair, no corridor	Typically double-loaded corridor, multiple stair, sometimes elevator	Typically double-loaded corridor, multiple stairs and egress, elevator	Typically smaller floor plate, double-loaded corridor, elevator, egress stairs
Location	Rural, suburban, urban	Rural, suburban, urban	Suburban, urban	Urban
Cost PSF	Varied	$150-225	$175-250	$225-400+

EMPIRICAL ANALYSIS

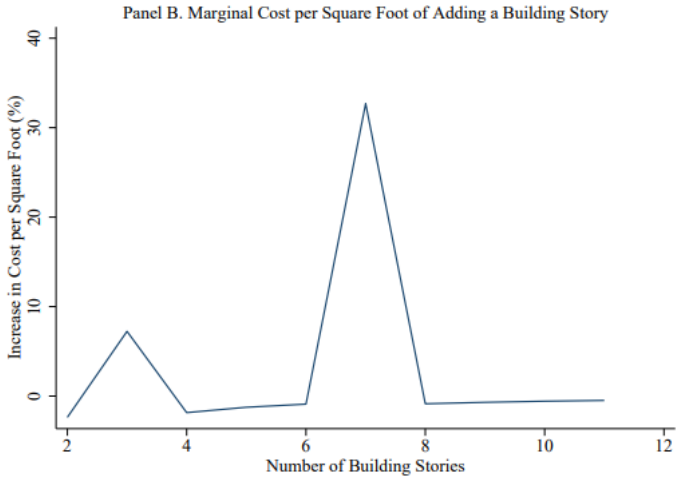
These observations are consistent with findings by Michael Eriksen and Anthony Orlando in their 2021 paper *Returns to Scale in Residential Construction: The Marginal Impact of Building Height*.[3] Based on a survey of construction costs across the 50 largest U.S. cities, the authors estimate the marginal costs of developing multifamily housing at increasing heights.

Panel A of their study illustrates the non-linear relationship between building height and per-square-foot construction costs, while Panel B presents the marginal cost of adding each additional story. The analysis identifies a notable increase in marginal costs beginning at seven stories, with continued cost escalation for additional height.

[3] Michael Eriksen and Anthony Orlando in their 2021 paper *Returns to Scale in Residential Construction: The Marginal Impact of Building Height.* Real Estate Economics v. 50(2), March 2021.

These findings align with the projects summarized in Attachment 1 and reinforce the construction-related constraints described above.





CONCLUSION

The Addendum's assumption that projects developed under the proposed Corridors Zoning Update would generally top out at eight stories—even when utilizing the State Density Bonus Law —is supported by both recent development patterns in Berkeley and broader empirical research. The City's record of SDBL projects over the past five years demonstrates a consistent tendency toward mid-rise construction, while cost analyses indicate that buildings exceeding eight stories are often not economically feasible in districts with a seven-story base height limit. Together, this evidence supports the reasonableness of the Addendum's development assumptions.

ATTACHMENT 1

State Density Bonus Law Projects in the City of Berkeley

	Units	Height	Zoning District	Zoning Height Max
2025 APR (17 projects)				
1701 San Pablo	110	6 stories	C-W	40 ft
1740 San Pablo	54	6 stories	C-W	40 ft
1752 Shattuck	68	7 stories	C-C	40 ft
2300 Ellsworth	**69**	**7 stories**	**R-SMU**	**85 ft**
2902 Adeline Street	**50**	**6 stories**	**C-AC**	**6-8 stories**
2650 Telegraph	72	7 stories	C-C	40 ft
2000 Dwight	45	5 stories	R-4	35 ft
2001 Ashby Ave	**86**	**8 stories**	**C-AC**	**6-8 stories**
2440 Shattuck	40	8 stories	C-DMU Corridor	60 ft max (75 ft with UP)
2480 Bancroft	**28**	**8 stories**	**C-T**	**85 ft**
2555 College	11	4 stories	R-3	35 ft
2680 Bancroft	**79**	**8 stories**	**R-SMU**	**85 ft**
1975 Shattuck	**599**	**28 stories***	**C-DMU Outer Core**	**60 ft max (75 ft with UP)**
2274 Shattuck	**227**	**17 stories**	**C-DMU Corridor**	**60 ft max (75 ft with UP)**
2442 Haste	**38**	**8 stories**	**C-T**	**85 ft**
2138 Kittredge St	66	8 stories	C-DMU Outer Core	60 ft max (75 ft with UP)
2100 Milvia	201	8 stories	C-DMU Buffer	50 ft max (60 ft with UP)

Base zoning that allows 7 stories

Increased Height Allowance Proj.

2024 APR (21 projects)				
1598 University	207	8 stories	C-U	30 ft
1750 Sacramento	**739**	**8 stories**	**R-BMU**	**8 stories**
1752 Shattuck Ave	74	7 stories	C-C	40 ft
2000 University	**81**	**8 stories**	**C-DMU Core**	**60 ft max (75 ft with UP)**
2037 Durant Ave	74	8 stories	C-DMU Buffer	50 ft max (60 ft with UP)
2099 Martin Luther King Jr Way	72	7 stories	C-DMU Buffer	50 ft max (60 ft with UP)
2115 Kittredge St	**214**	**15 stories**	**C-DMU Core**	**60 ft max (75 ft with UP)**
2128 Oxford St	**485**	**26 stories***	**C-DMU Core**	**60 ft max (75 ft with UP)**
2136 San Pablo Ave	126	6 stories	C-W	40 ft
2137 Dwight Way	58	6 stories	C-SA	36 ft
2300 Ellsworth St	69	7 stories	R-SMU	85 ft
2427 San Pablo Ave	78	5 stories	C-W	40 ft
2462 Bancroft Way	**66**	**8 stories**	**C-T**	**85 ft max**
2527 San Pablo Ave	63	6 stories	C-W	40 ft
2530 Bancroft Ave	**110**	**12 stories**	**C-T**	**85 ft max**
2538 Durant Ave	**83**	**8 stories**	**C-T**	**85 ft max**
2555 College Ave	11	4 stories	R-3	35 ft
2587 Telegraph Avenue	**52**	**8 stories**	**C-T**	**85 ft max**
2701 Shattuck Ave	**57**	**5 stories**	**C-AC**	**6-8 stories**
3030 Telegraph Ave	144	5 stories	C-C	40 ft
805 Jones St	6	2 stories	MU-R	35 ft
			Base zoning that allows 7 stories	
			Increased Height Allowance Proj.	

2023 APR (21 projects)				
1598 University Ave	207	8 stories	C-U	30 ft
1717 University Ave	28	5 stories	C-U	30 ft
1752 Shattuck Ave	68	7 stories	C-C	40 ft
1773 Oxford St	24	5 stories	R-4	35 ft
1820 San Pablo Ave	44	5 stories	C-W	40 ft
2023 Shattuck Ave	**48**	**7 stories**	**C-DMU Core**	**60 ft max (75 ft with UP)**
2028 Bancroft Way	37	7 stories	C-DMU Buffer	50 ft max (60 ft with UP)
2065 Kittredge St	**187**	**8 stories**	**C-DMU Core**	**60 ft max (75 ft with UP)**
2067 University Ave	**50**	**7 stories**	**C-DMU Outer Core**	**60 ft max (75 ft with UP)**
2147 San Pablo Ave	128	6 stories	C-W	40 ft
2190 Shattuck Ave	**326**	**25 stories***	**C-DMU Core**	**60 ft max (75 ft with UP)**
2650 Telegraph Ave	45	5 stories	C-C	40 ft
2712 Telegraph Ave	40	6 stories	C-C	40 ft
2800 Telegraph Ave	16	6 stories	C-C	40 ft
3000 San Pablo Ave	16	6 stories	C-W	40 ft
3030 Telegraph Ave	144	5 stories	C-C	40 ft
3031 Telegraph Ave	127	6 stories	C-C	40 ft
3000 Shattuck Ave	166	10 stories	C-SA	36 ft
2590 Bancroft Way	**87**	**8 stories**	**C-T**	**85 ft**
2532 Shattuck Ave	**204**	**8 stories**	**C-AC**	**6-8 stories**
2440 Shattuck Ave	40	8 stories	C-DMU Corridor	60 ft max (75 ft with UP)
			Base zoning that allows 7 stories	
			Increased Height Allowance Proj.	

2022 APR (10 projects)				
1201 San Pablo Ave	66	6 stories	C-W	40 ft
1601 Oxford	34	5 stories	R-3	35 ft
1950 Addison	107	7 stories	C-DMU Buffer	50 ft max (60 ft with UP)
2000 Dwight St	113	6 stories	R-4	35 ft
2000 University Ave	82	8 stories	C-DMU Buffer	50 ft max (60 ft with UP)
2012 Berkeley Way	142	5 stories	C-DMU Buffer	50 ft max (60 ft with UP)
2018 Blake	12	6 stories	R-4	35 ft
2435 Haste St	**37**	**8 stories**	**R-SMU**	**85 ft**
2590 Bancroft	**87**	**8 stories**	**C-T**	**85 ft**
2352 Shattuck Ave	204	8 stories	C-DMU Buffer	50 ft max (60 ft with UP)
			Base zoning that allows 7 stories	

2021 APR(6 projects)				
2597 Telegraph Ave	**10**	**4 stories**	**C-T**	**85 ft**
3020 San Pablo Ave	29	5 stories	C-W	40 ft
2023 Shattuck Ave	**48**	**8 stories**	**C-DMU Core**	**60 ft max (75 ft with UP)**
3000 San Pablo Ave	78	6 stories	C-W	40 ft
3031 Telegraph Ave	110	6 stories	C-C	40 ft
2015 Blake St	155	7 stories	R-4	35 ft
			Base zoning that allows 7 stories	

2020 APR (7 projects)				
1367 University	39	4 stories	C-U	30 ft
1200 San Pablo Ave	104	6 stories	C-W	40 ft
2720 San Pablo Ave	25	6 stories	C-W	40 ft
2000 Dwight	113	6 stories	R-4	35 ft
1500 San Pablo Ave	170	5 stories	C-W	40 ft
2352 Shattuck Ave	**204**	**8 stories**	**C-AC**	**6-8 stories**
2590 Bancroft	**87**	**8 stories**	**C-T**	**85 ft**
			Base zoning that allows 7 stories	

Appendix C

Vehicle Miles Traveled Impact Assessment Memorandum

KITTELSON & ASSOCIATES
155 Grand Avenue, Suite 505
Oakland, CA 94612
P 510.839.1742

Technical Memorandum

June 26, 2026

Project# 30213

To: Karly Kaufman
Rincon Consultants
449 25th Street, Suite 303
Oakland, CA 94612

From: Damian Stefanakis, Kittelson & Associates, Inc.

CC: Chris Sensenig, Raimi + Associates

RE: **City of Berkeley – Corridors Buildout Zone Project Addendum - Vehicle Miles Traveled (VMT) Memorandum**

INTRODUCTION

Kittelson and Associates (Kittelson) has prepared this vehicle-miles traveled (VMT) assessment for the City of Berkeley Corridors Buildout Zoning Project (proposed project). The proposed project involves zoning text and map amendments to build out the three corridors: Solano Avenue, North Shattuck, and College Avenue, beyond the housing element estimates in the City's 2023-2031 Housing Element Program 27. This zoning involves increased density, height, and bulk to allow for mixed-use and residential development. Similar to the 2023-2031 Housing Element Update Environmental Impact Report (EIR), Kittelson conducted the travel demand modeling of the three Zoning Corridors using the Alameda County Transportation Commission (CTC) Countywide Model as adapted for the Berkeley Housing Element.

The total parcel area across the three project areas is 34 acres within 11 traffic analysis zones (TAZs), as shown in **Figure 1**. There is a total of 282 existing residential units and 659,902 square feet of existing commercial area across the three project areas. The estimated redevelopment area covers 10.6 acres, which comprises about one third of the total parcel area. Estimated redevelopment is anticipated to yield 4,677 net new units and a reduction of 110,788 square feet of commercial area. Detailed land use estimates for existing and proposed by TAZ are shown in **Table 1**.

The VMT assessment is based on the SB 743 requirements as applied through the City of Berkeley VMT Guidelines.

The buildout estimates were converted into model inputs with residential converted into housing units and population, and commercial into jobs. Travel forecasts were prepared by Kittelson for future 2040 cumulative buildout model year conditions. The 2040 cumulative buildout model assumes the full buildout of the City Housing Element and Southside development. These were previously evaluated under separate studies as an EIR in 2022, and an Addendum to the EIR in 2023.

VMT results were extracted at the project TAZ and citywide level based on the efficiency metrics, VMT per Capita, VMT per Employee, and total VMT. Per SB 743 and City VMT guidelines, the results were compared to the Bay Area regionwide average to determine if the new Zoning would contribute to any more VMT impacts beyond those disclosed under the Housing Element Update Addendum EIR.

Table 1: Zoning Corridors Existing Development And Buildout Redevelopment by TAZ

TAZ	Corridor	Residential			Commercial		
		Existing Residential (units)	Estimated Net New Residential with Proposed Project (units)	Total Residential with Project (units)	Existing Commercial (sf)	Estimated Net Reduction in Commercial with Proposed Project (sf)	Total Commercial with Project (sf)
14	Solano Avenue	2	846	848	63,981	(12,890)	51,091
17	Solano Avenue	89	460	549	72,576	(25,895)	46,681
18	Solano Avenue	-	360	360	51,721	(24,797)	26,924
26	North Shattuck	11	1,619	1,630	91,190	10,600	101,790
27	North Shattuck	44	498	542	169,758	(29,581)	40,177
45	North Shattuck	110	259	369	36,737	(3,335)	33,402
46	North Shattuck	9	263	272	45,773	(13,421)	32,352
94	College Avenue	17	34	51	43,249	(1,220)	42,029
105	College Avenue	-	94	194	37,033	(8,715)	28,319
109	College Avenue	-	144	144	18,443	(1,534)	16,908
110	College Avenue	-	-	-	26,441	-	26,441
	Total	**282**	**4,677**	**4,959**	**656,902**	**(110,788)**	**546,114**
sf = square feet, ( ) denotes subtraction							

SOURCE: RAIMI + ASSOCIATES, 2026

City of Berkley and the former California Office of Planning and Research – OPR (now the Office of Land Use and Climate Innovation - LCI) recommend that projects may screen out from a detailed VMT assessment based on a number of criteria, including small project size, or proximity to high quality transit. While the three Zoning corridors do not screen out as a small project, they are within 0.5 miles of high-quality transit stops (less than 20 minute frequency) and therefore allow the project to screen out for VMT. Given the Corridors screen out for VMT, the VMT metrics are provided mostly for information only.

The results indicate that the project would help shorten average trip lengths, reduce auto trips by promoting mode choice to transit and non-auto modes, and contribute to reductions in both VMT per capita and VMT per Employment.

VMT THRESHOLDS

VMT thresholds are defined using recommendations from the California Office of Planning and Research (OPR) based on their final report, dated December 2018. Cities and counties could opt to develop their own methods, but the California Environmental Quality Act (CEQA) impact criteria are generally consistent with OPR recommendations. The City of Berkeley's VMT Criteria and Thresholds were developed and published on June 29, 2020.[1] This CEQA analysis is based on the City policy and supplemented with OPR recommendations (where applicable and necessary).

The City of Berkeley has opted to compare VMT to the Bay Area regionwide average. Based on City guidelines, any development that does not immediately screen out for a VMT per capita assessment should produce a VMT per capita of 15% less than the baseline Bay Area regionwide average.

In the City of Berkeley, the screening criteria used to evaluate whether a housing project could qualify for an Exemption under CEQA related to VMT impacts include the following:

1. Within ½ mile of BART and Amtrak stations,
2. Within ¼ mile of high-quality transit corridor, which has 20-minute frequency fixed-route bus service,
3. Contains 100% affordable housing,
4. All projects (housing related) expected to generate less than 836 daily VMT (usually around 20 residential units), and
5. All projects located in TAZs with household VMT per capita of 15% below the baseline regional average.

The Open data maps from MTC for the San Francisco Bay Area shown in **Figures 2 to 5** in **Appendix A** display the high-quality transit[2] in Berkeley and the high-quality transit stops[3] along each of the three corridors.

Based on these criteria, the Corridors Zoning does screen out based on proximity to high quality transit. Given that the project screens out, VMT results are provided here for information purposes only and potential use in further environmental studies.

VMT RESULTS

For the City of Berkeley, VMT metrics are compared to the Bay Area regionwide average, and an impact is assessed if the project VMT per capita (VMT/Population) or the VMT per employment (VMT/Job) is higher than the established threshold of 15% below the regionwide average.

While citywide VMT per capita does increase slightly compared to the Housing Element (the no-project), at the aggregate Project level, **Table 2** indicates that the overall VMT per capita for the Corridors Zoning buildout project is lower than 15% below the regionwide baseline average (10.95 vs 16.71), and **Table 3**

[1] City of Berkeley VMT Criteria and Thresholds, June 2020. Link: https://berkeleyca.gov/sites/default/files/2022-02/VMT-Criteria-and-Thresholds.pdf

[2] MTC Open data Transit Areas: https://opendata.mtc.ca.gov/datasets/MTC::high-quality-transit-stops/explore?location=37.863757%2C-122.262894%2C13.37

[3] MTC Open data Transit Stops: https://opendata.mtc.ca.gov/datasets/MTC::high-quality-transit-stops/explore?location=37.863757%2C-122.262894%2C13.37

indicates the overall VMT per employment is lower than 15% below the regionwide baseline average (11.68 vs 15.06).

Therefore, in aggregate the VMT results in a ***less than significant*** finding under CEQA. No mitigations for VMT are therefore recommended at the programmatic level. Tables of the VMT analysis are summarized below.

- Table 2 provides a summary of 2020/2040 (no-project and plus project) VMT per capita at the City, County, and Regionwide level.
- Table 3 provides a summary of 2020/2040 (no-project and plus project) VMT per employment at the City, County, and Regionwide level.

Table 2: 2020/2040 VMT per Capita

Scenario	Households	Population	Household VMT	VMT/Capita	Threshold 15% Below
2020 Existing Baseline					
City	52,293	128,004	1,436,244	11.22	
County	620,008	1,720,139	33,432,049	19.44	
Regionwide	2,887,140	7,915,267	155,707,636	19.67	16.72
2040 No-Project (*with HE Addendum*)					
City	*76,116*	*192,641*	*2,088,198*	*10.84*	
County	*759,505*	*2,134,294*	*37,290,458*	*17.47*	
Regionwide	*3,452,139*	*9,678,363*	183,949,465	19.01	
2040 Plus Buildout Project					
City	80,793	203,785	2,230,694	10.95	
County	764,182	2,145,438	37,680,447	17.56	
Regionwide	3,456,816	9,689,507	183,945,727	18.98	
Delta (2040 Project – 2040 No-Project)					
City	4,677	11,144	142,496	0.11	
County	4,677	11,144	389,989	0.09	
Regionwide	4,677	11,144	-3,738	-0.02	

SOURCE: KITTELSON & ASSOCIATES, INC., 2026
NOTE: 2020 BASELINE REGIONWIDE IS SELECTED AS THE VMT REGION FOR COMPARISON.
NET CHANGE IN METRICS IS ASSOCIATED WITH THE PROJECT COMPARED TO THE NO-PROJECT. SOME ROUNDING IS POSSIBLE.
2040 PLUS PROJECT VMT/CAPITA IS LOWER THAN 15% BELOW EXISTING BASELINE REGIONWIDE AVERAGE.

Table 3: 2020/2040 VMT per Employment

Scenario	Employment	Employment VMT	VMT/Employment	Threshold 15% Below
2020 Existing Baseline				
City	*115,388*	*1,432,159*	*12.41*	
County	*853,858*	*13,543,525*	*15.86*	
Regionwide	*4,193,411*	*73,353,557*	*17.72*	*15.06*
2040 No-Project (*with HE Addendum*)				
City	*121,710*	*1,423,654*	*11.70*	
County	*948,787*	*15,164,395*	*15.98*	
Regionwide	*4,694,035*	*85,673,994*	*18.25*	
2040 Plus Buildout Project				
City	*121,488*	*1,418,564*	*11.68*	
County	*948,565*	*15,204,487*	*16.03*	
Regionwide	*4,693,813*	*85,223,911*	*18.16*	
Delta (2040 Project – 2040 No-Project)				
City	-222	-5,091	-0.02	
County	-222	40,092	0.05	
Regionwide	-222	-450,083	-0.10	

SOURCE: KITTELSON & ASSOCIATES, INC., 2026
NOTE: 2020 BASELINE REGIONWIDE IS SELECTED AS THE VMT REGION FOR COMPARISON.
NET CHANGE IN METRICS IS ASSOCIATED WITH THE PROJECT COMPARED TO THE NO-PROJECT. SOME ROUNDING IS POSSIBLE.
2040 REGIONWIDE VMT FLUCTUATION DUE TO REGIONAL MODEL EFFECTS.
2040 PLUS PROJECT VMT/EMPLOYMENT IS LOWER THAN 15% BELOW EXISTING BASELINE REGIONWIDE AVERAGE

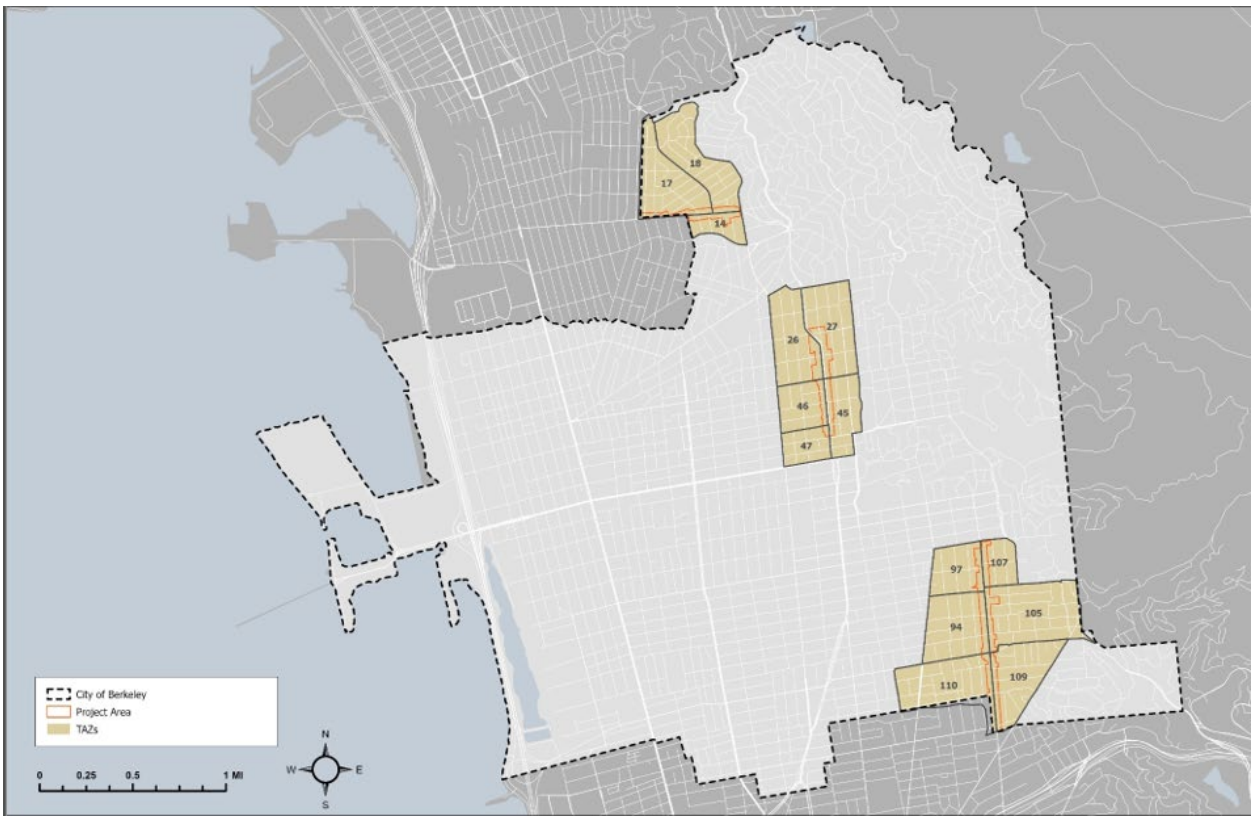
CONCLUSION

The VMT assessment for the Corridors Zoning Update project reflects the upzoning buildout potential of three priority corridors in Berkeley, Solano Avenue, North Shattuck, and College Avenue. While the three corridors do screen out for VMT based on proximity to high quality transit, the VMT results developed using the Alameda CTC Countywide model as adapted for the Berkeley Housing Element are provided for informational purposes

For the City of Berkeley, VMT metrics are compared to the Bay Area regionwide average, and an impact is assessed if the project VMT per capita (VMT/Population) or the VMT per employment (VMT/Job) are higher than the established threshold of 15% below the regionwide average. At the aggregate Project citywide level, the Corridors Zoning project overall VMT per capita is less than 15% below the regionwide average **(10.95 vs 16.71)**, and overall VMT per employment is lower than 15% below the regionwide average **(11.68 vs 15.06)**, and in aggregate, this results in a ***less than significant*** impact for VMT. No mitigations for VMT are therefore recommended at the programmatic level.

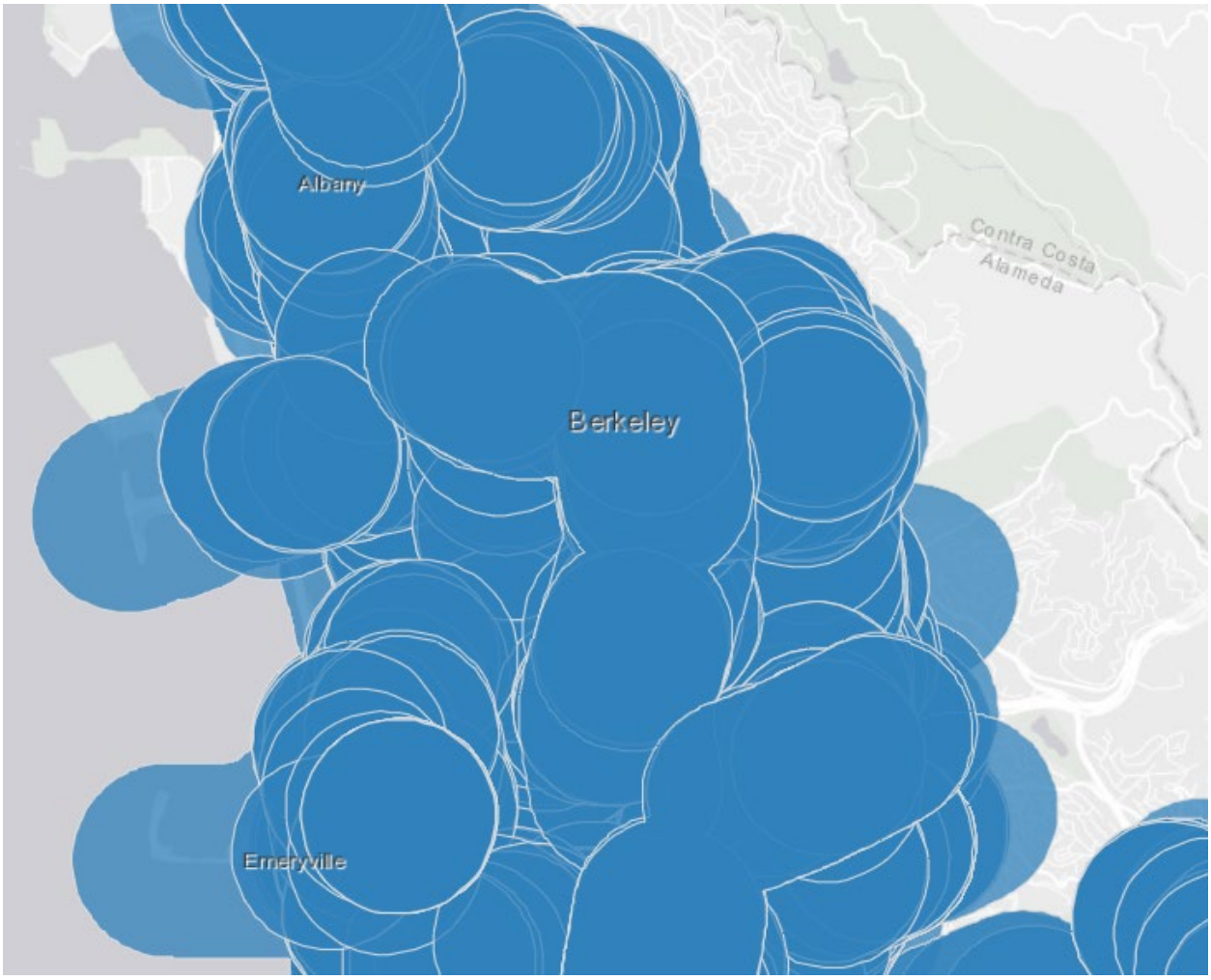
APPENDIX A

Figure 1: Zoning Corridors Model Traffic Analysis Zone (TAZs)



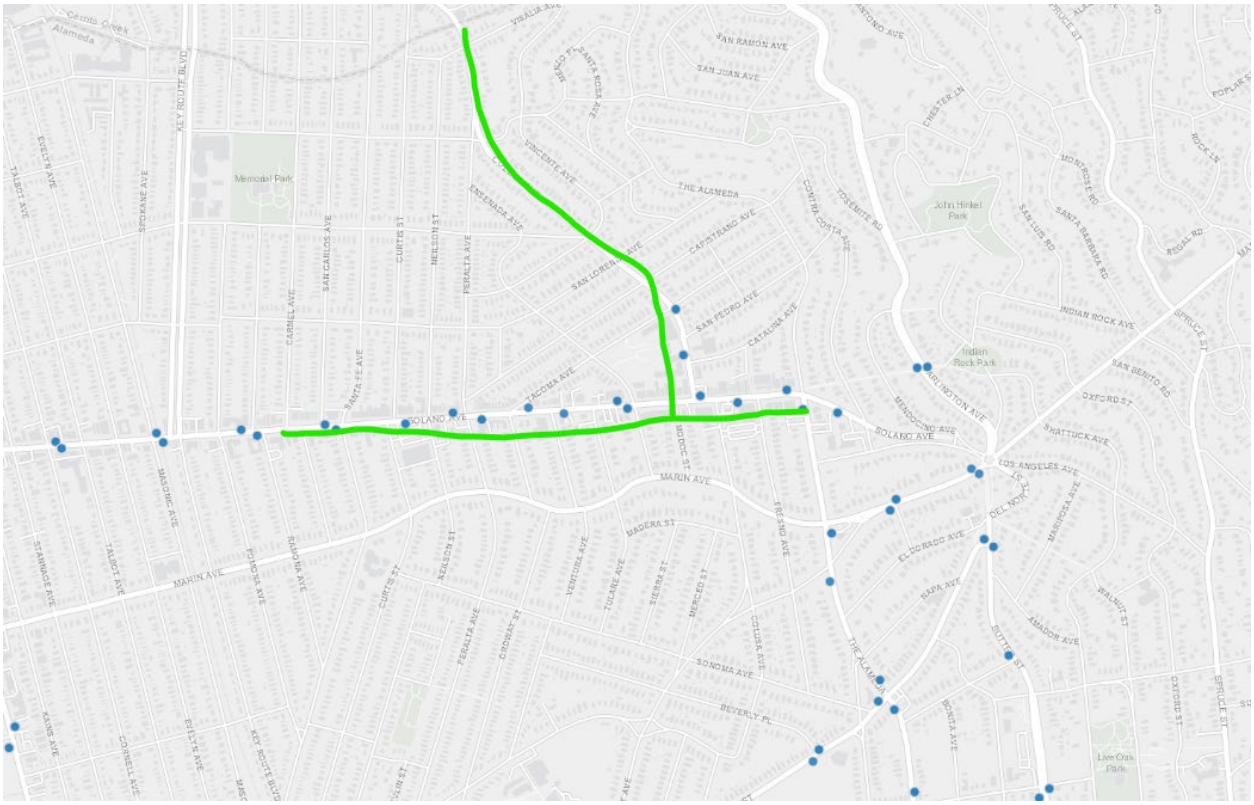
Source: City of Berkeley/ Alameda CTC Model, 2026

Figure 2: High Quality Transit Areas – Berkeley



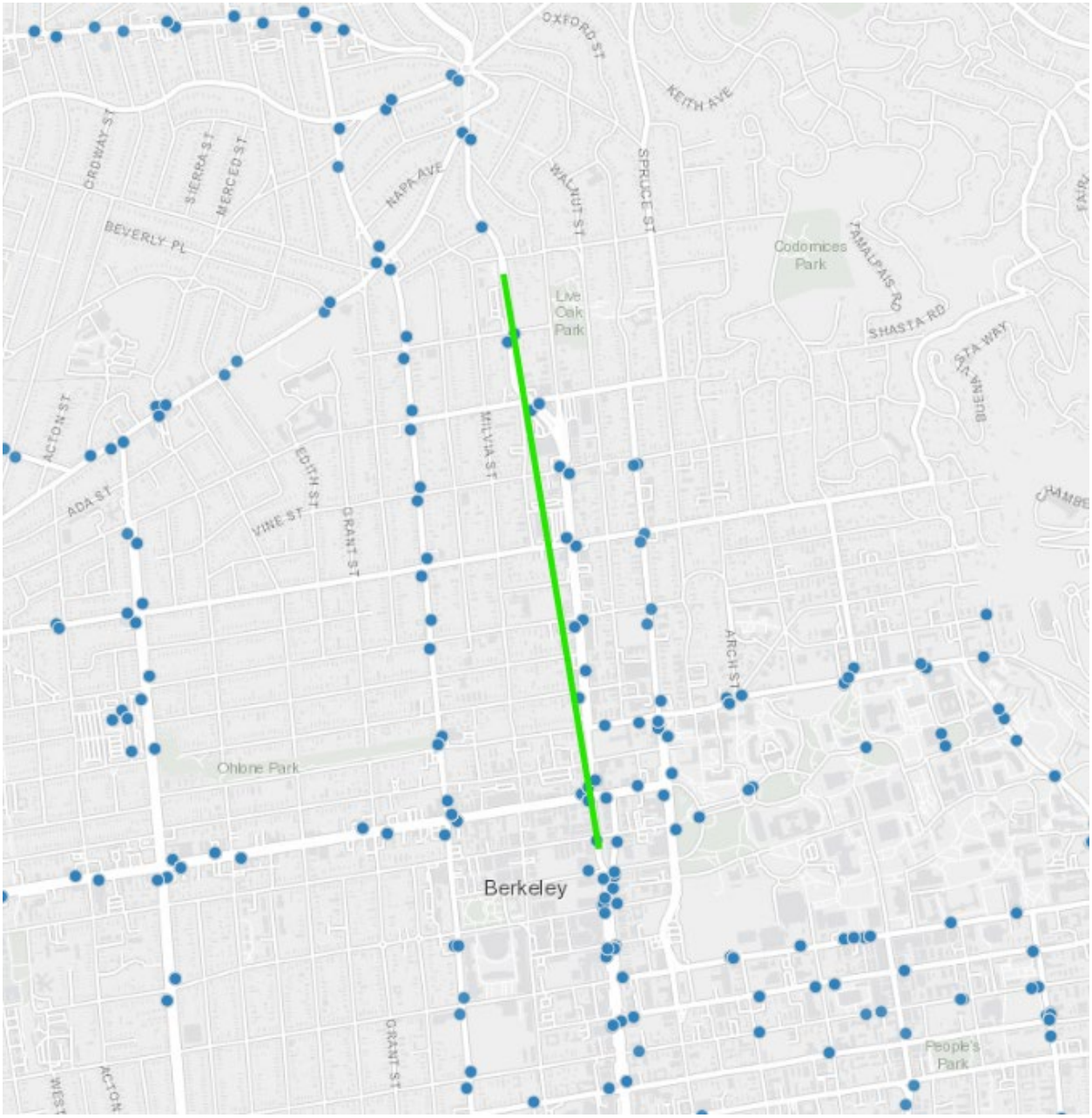
Source:https://opendata.mtc.ca.gov/datasets/MTC::high-quality-transit-areas/explore?location=37.879544%2C-122.258553%2C13.18

Figure 3: High Quality Transit Stops – Solano Avenue Corridor



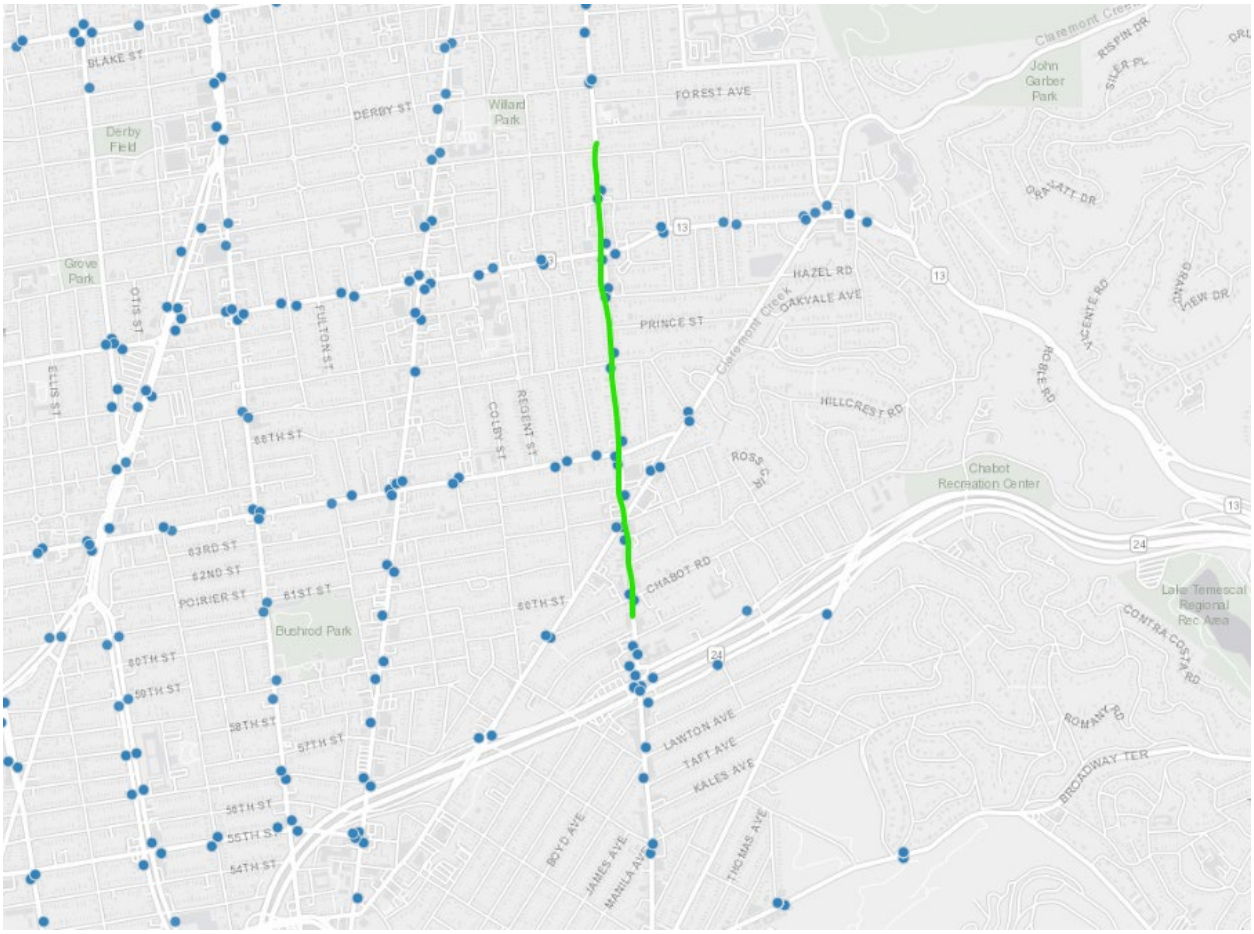
Source:https://opendata.mtc.ca.gov/datasets/MTC::high-quality-transit-areas/explore?location=37.879544%2C-122.258553%2C13.18

Figure 4: High Quality Transit Stops – Shattuck Avenue Corridor



Source:https://opendata.mtc.ca.gov/datasets/MTC::high-quality-transit-areas/explore?location=37.879544%2C-122.258553%2C13.18

Figure 5: High Quality Transit Stops – College Avenue Corridor



Source:https://opendata.mtc.ca.gov/datasets/MTC::high-quality-transit-areas/explore?location=37.879544%2C-122.258553%2C13.18

Appendix D

Greenhouse Gas Emissions Modeling Analysis for the San Pablo Specific Plan and 2023-2031 Housing Element

Rincon Consultants, Inc.
180 North Ashwood Avenue
Ventura, California 93003
805-644-4455

Date: June 24, 2025
Project No: 25-17613

Hannah Chan Smyth
Urban Planning Partners, Inc.
388 17th Street, Suite 230
Oakland, CA 94612
Via Email: hchansmyth@up-partners.com

Subject: Greenhouse Gas Emissions Modeling Analysis for the San Pablo Specific Plan and 2023-2031 Housing Element

Dear Mrs. Smyth:

This Greenhouse Gas (GHG) Emissions Letter Report was prepared by Rincon Consultants, Inc. (Rincon) to provide GHG emissions modeling scenarios for the City of Berkeley for the proposed San Pablo Avenue Specific Plan and 2023-2031 Housing Element. Rincon previously assisted the City in preparing the GHG analysis for the 2023-2031 Housing Element Update Environmental Impact Report (EIR), which assumed 90 percent of the natural gas demand would be supplied by electricity. This analysis includes adjustments to the previous modeling effort with the latest California Emissions Estimator Model (CalEEMod) version (2022) in order to evaluate a revised natural gas scenario. In addition, proposed buildout of the San Pablo Avenue Specific Plan is greater than the EIR forecast. Therefore, this analysis also includes modeling to reflect the increased buildout of the Specific Plan.

Methodology

GHG emissions for development facilitated by the City of Berkeley's 2023-2031 Housing Element EIR were previously calculated using CalEEMod version 2020.4.0. In order to provide a direct comparison between model versions, GHG emissions were remodeled using CalEEMod version 2022, the latest available version of the model. Where possible, user inputs from the previous modeling effort were replicated in version 2022 to establish an updated baseline for comparison with the scenarios described below. Consistent with the methodology used for the Housing Element EIR, emissions modeling was conducted for both single-family and multi-family land uses with an anticipated buildout year of 2031. Utility GHG intensity factors were adjusted to match the original model inputs, which reflect the supply of electricity by East Bay Community Energy under their Bright Choice Plan (40 percent renewable). CalEEMod version 2022 does not provide default values for outdoor water consumption by multi-family uses. Therefore, default consumption factors from version 2020 were replicated in the newer model.

Table 1 shows a comparison of GHG emissions between CalEEMod versions 2020 and 2022 using the original EIR's assumptions, including 90% electrification of the proposed buildout. As shown therein, the updated emissions estimate is 1.9% greater than previously calculated. Both the increased natural gas demand and increased buildout scenarios included later in this analysis were analyzed using the updated emissions estimate as a basis for comparison.

Table 1 Emissions Comparison Between CalEEMod Versions

CalEEMod Model Version	Annual Emissions (MT of CO2e)
V2020	81,985
v2022	83,568
Percent Change	1.9%

See Attachment A for CalEEMod Outputs.

Increased Natural Gas Demand Scenario

Pursuant to Chapter 12.80 of the BMC[1], which prohibited the installation of natural gas infrastructure in newly constructed buildings unless granted an exception or public interest exception, it was previously assumed that 90 percent of new development would be all-electric for estimation of the project's impacts. Since adoption of the Housing Element EIR, new building electrification data has suggested that 30 to 40 percent of new developments would include natural gas connections, resulting in approximately 60 to 70 percent electrification of development facilitated by the plan. Based on this newly available data reflecting increased natural demand than previously analyzed, GHG emissions for all units modeled as part of the Housing Element EIR were recalculated in CalEEMod with the revised assumption that up to 60 percent of new development would be all-electric and the remainder of units would include natural gas connections. Additional units proposed by the San Pablo Avenue Specific Plan were modeled separately as described in the following subsection.

Increased Buildout Scenario

In order to account for the proposed buildout facilitated by the San Pablo Avenue Specific Plan, a second GHG model was run for the portion of the buildout that was not previously analyzed under the Berkeley Housing Element EIR. According to the City, it is estimated that approximately 3,250 multifamily housing units with a population of up to 8,125 persons were not included in the Housing Element EIR's buildout assumptions. Therefore, GHG emissions modeling was conducted for the net increase in buildout facilitated by the Specific Plan. This model iteration also accounts for the revised natural gas assumptions described above under *Increased Natural Gas Demand Scenario*. All units analyzed under this scenario were modeled using the land use subtype "Apartments – Mid Rise" and associated default inputs. Where applicable, the methodology and user inputs from the previous modeling effort were replicated in this model run for consistency.

Results

Increased Natural Gas Demand Scenario

Table 2 shows GHG emissions estimates for the Housing Element with the EIR's 90% electrification assumption compared to emissions under an increased natural gas demand scenario. As shown therein, GHG emissions would be 83,568 MT CO_2e per year under the 90 percent electrification scenario and 85,759 MT CO_2e per year under the 60 percent electrification scenario for difference of 2,191 MT CO_2e.

[1] Chapter 12.80, Prohibition of Natural Gas Infrastructure in New Buildings, was repealed on June 4, 2024 by Ordinance 7907-NS.

Table 2 Increased Natural Gas Scenario GHG Emissions

Scenario	Annual Emissions (MT of CO2e)
90% Electrified	83,568
60% Electrified	85,759
Net Difference	2,191
Percent Change	2.6%

See Attachment A for CalEEMod Outputs.

Increased Buildout Scenario

Table 3 shows the net increase in GHG emissions from the addition of units proposed by the Specific Plan that were not previously analyzed as part of the Housing Element EIR. Emissions shown in Table 3 reflect the revised 60% electrification scenario. Net new emissions from the Specific Plan were combined with the adjusted Housing Element emissions from Table 2 to determine total emissions for the plan areas. As shown in Table 3, the additional 3,250 multifamily units with a population of up to 8,125 persons would result in an increase of 14,035 MT CO_2e per year, bringing total emissions to 99,794 MT CO_2e per year.

Table 3 Increased Buildout Scenario GHG Emissions

Scenario	Annual Emissions (MT of CO2e)
Berkeley Housing Element[1]	85,759[2]
San Pablo Avenue Specific Plan[1]	14,035
Total	**99,794**

See Attachment A for CalEEMod Outputs.

[1]Reflects the revised 60% electrification scenario.

[2] See Table 2

Sincerely,
Rincon Consultants, Inc.

Lucas Carneiro
Air Quality and Greenhouse Gas Specialist

Bill Vosti, MESM
Program Manager, Technical Services

Attachments

Attachment 1 CalEEMod Outputs

Attachment 1

CalEEMod Outputs

Berkeley HE Single Fam 90% Electrified v2 Detailed Report

Table of Contents

1. Basic Project Information

1.1. Basic Project Information

1.2. Land Use Types

1.3. User-Selected Emission Reduction Measures by Emissions Sector

2. Emissions Summary

2.4. Operations Emissions Compared Against Thresholds

2.5. Operations Emissions by Sector, Unmitigated

2.6. Operations Emissions by Sector, Mitigated

4. Operations Emissions Details

4.1. Mobile Emissions by Land Use

4.1.1. Unmitigated

4.1.2. Mitigated

4.2. Energy

4.2.1. Electricity Emissions By Land Use - Unmitigated

4.2.2. Electricity Emissions By Land Use - Mitigated

4.2.3. Natural Gas Emissions By Land Use - Unmitigated

4.2.4. Natural Gas Emissions By Land Use - Mitigated

4.3. Area Emissions by Source

4.3.1. Unmitigated

4.3.2. Mitigated

4.4. Water Emissions by Land Use

4.4.1. Unmitigated

4.4.2. Mitigated

4.5. Waste Emissions by Land Use

4.5.1. Unmitigated

4.5.2. Mitigated

4.6. Refrigerant Emissions by Land Use

4.6.1. Unmitigated

4.6.2. Mitigated

4.7. Offroad Emissions By Equipment Type

4.7.1. Unmitigated

4.7.2. Mitigated

4.8. Stationary Emissions By Equipment Type

4.8.1. Unmitigated

4.8.2. Mitigated

4.9. User Defined Emissions By Equipment Type

4.9.1. Unmitigated

4.9.2. Mitigated

4.10. Soil Carbon Accumulation By Vegetation Type

4.10.1. Soil Carbon Accumulation By Vegetation Type - Unmitigated

4.10.2. Above and Belowground Carbon Accumulation by Land Use Type - Unmitigated

4.10.3. Avoided and Sequestered Emissions by Species - Unmitigated

4.10.4. Soil Carbon Accumulation By Vegetation Type - Mitigated

4.10.5. Above and Belowground Carbon Accumulation by Land Use Type - Mitigated

4.10.6. Avoided and Sequestered Emissions by Species - Mitigated

5. Activity Data

5.9. Operational Mobile Sources

5.9.1. Unmitigated

5.9.2. Mitigated

5.10. Operational Area Sources

5.10.1. Hearths

5.10.1.1. Unmitigated

5.10.1.2. Mitigated

5.10.2. Architectural Coatings

5.10.3. Landscape Equipment

5.10.4. Landscape Equipment - Mitigated

5.11. Operational Energy Consumption

5.11.1. Unmitigated

5.11.2. Mitigated

5.12. Operational Water and Wastewater Consumption

5.12.1. Unmitigated

5.12.2. Mitigated

5.13. Operational Waste Generation

5.13.1. Unmitigated

5.13.2. Mitigated

5.14. Operational Refrigeration and Air Conditioning Equipment

5.14.1. Unmitigated

5.14.2. Mitigated

5.15. Operational Off-Road Equipment

5.15.1. Unmitigated

5.15.2. Mitigated

5.16. Stationary Sources

5.16.1. Emergency Generators and Fire Pumps

5.16.2. Process Boilers

5.17. User Defined

5.18. Vegetation

5.18.1. Land Use Change

5.18.1.1. Unmitigated

5.18.1.2. Mitigated

5.18.1. Biomass Cover Type

5.18.1.1. Unmitigated

5.18.1.2. Mitigated

5.18.2. Sequestration

5.18.2.1. Unmitigated

5.18.2.2. Mitigated

6. Climate Risk Detailed Report

6.1. Climate Risk Summary

6.2. Initial Climate Risk Scores

6.3. Adjusted Climate Risk Scores

6.4. Climate Risk Reduction Measures

7. Health and Equity Details

7.1. CalEnviroScreen 4.0 Scores

7.2. Healthy Places Index Scores

7.3. Overall Health & Equity Scores

7.4. Health & Equity Measures

7.5. Evaluation Scorecard

7.6. Health & Equity Custom Measures

8. User Changes to Default Data

1. Basic Project Information

1.1. Basic Project Information

Data Field	Value
Project Name	Berkeley HE Single Fam 90% Electrified v2
Operational Year	2031
Lead Agency	—
Land Use Scale	Plan/community
Analysis Level for Defaults	County
Windspeed (m/s)	3.90
Precipitation (days)	3.40
Location	37.87310585963721, -122.29377329662165
County	Alameda
City	Berkeley
Air District	Bay Area AQMD
Air Basin	San Francisco Bay Area
TAZ	1533
EDFZ	1
Electric Utility	User Defined
Gas Utility	User Defined
App Version	2022.1.1.29

1.2. Land Use Types

Land Use Subtype	Size	Unit	Lot Acreage	Building Area (sq ft)	Landscape Area (sq ft)	Special Landscape Area (sq ft)	Population	Description
Single Family Housing	113	Dwelling Unit	36.7	220,350	1,323,553	—	323	—

1.3. User-Selected Emission Reduction Measures by Emissions Sector

Sector	#	Measure Title
Water	W-7	Adopt a Water Conservation Strategy

2. Emissions Summary

2.4. Operations Emissions Compared Against Thresholds

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Un/Mit.	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—
Unmit.	49.3	4,735	4,784	4.31	0.22	10.8	4,967
Mit.	47.5	4,733	4,781	4.31	0.21	10.8	4,962
% Reduced	3%	< 0.5%	< 0.5%	< 0.5%	2%	—	< 0.5%
Daily, Winter (Max)	—	—	—	—	—	—	—
Unmit.	49.3	4,461	4,510	4.34	0.24	1.82	4,691
Mit.	47.5	4,459	4,506	4.34	0.23	1.82	4,686
% Reduced	3%	< 0.5%	< 0.5%	< 0.5%	2%	—	< 0.5%
Average Daily (Max)	—	—	—	—	—	—	—
Unmit.	49.3	4,395	4,445	4.32	0.22	5.47	4,625
Mit.	47.5	4,394	4,441	4.32	0.22	5.47	4,620
% Reduced	3%	< 0.5%	< 0.5%	< 0.5%	2%	—	< 0.5%
Annual (Max)	—	—	—	—	—	—	—
Unmit.	8.16	728	736	0.72	0.04	0.91	766
Mit.	7.87	727	735	0.72	0.04	0.91	765
% Reduced	3%	< 0.5%	< 0.5%	< 0.5%	2%	—	< 0.5%

2.5. Operations Emissions by Sector, Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Sector	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—
Mobile	—	4,507	4,507	0.20	0.20	9.21	4,580
Area	0.00	17.1	17.1	< 0.005	< 0.005	—	17.2
Energy	—	167	167	0.01	< 0.005	—	168
Water	8.58	43.2	51.7	0.03	0.02	—	58.0
Waste	40.7	0.00	40.7	4.07	0.00	—	142
Refrig.	—	—	—	—	—	1.58	1.58
Total	49.3	4,735	4,784	4.31	0.22	10.8	4,967
Daily, Winter (Max)	—	—	—	—	—	—	—
Mobile	—	4,250	4,250	0.23	0.22	0.24	4,321
Area	0.00	0.00	0.00	0.00	0.00	—	0.00
Energy	—	167	167	0.01	< 0.005	—	168
Water	8.58	43.2	51.7	0.03	0.02	—	58.0
Waste	40.7	0.00	40.7	4.07	0.00	—	142
Refrig.	—	—	—	—	—	1.58	1.58
Total	49.3	4,461	4,510	4.34	0.24	1.82	4,691
Average Daily	—	—	—	—	—	—	—
Mobile	—	4,176	4,176	0.21	0.20	3.89	4,246
Area	0.00	8.45	8.45	< 0.005	< 0.005	—	8.48
Energy	—	167	167	0.01	< 0.005	—	168
Water	8.58	43.2	51.7	0.03	0.02	—	58.0
Waste	40.7	0.00	40.7	4.07	0.00	—	142
Refrig.	—	—	—	—	—	1.58	1.58
Total	49.3	4,395	4,445	4.32	0.22	5.47	4,625
Annual	—	—	—	—	—	—	—
Mobile	—	691	691	0.04	0.03	0.64	703

Area	0.00	1.40	1.40	< 0.005	< 0.005	—	1.40
Energy	—	27.7	27.7	< 0.005	< 0.005	—	27.8
Water	1.42	7.14	8.56	< 0.005	< 0.005	—	9.61
Waste	6.74	0.00	6.74	0.67	0.00	—	23.6
Refrig.	—	—	—	—	—	0.26	0.26
Total	8.16	728	736	0.72	0.04	0.91	766

2.6. Operations Emissions by Sector, Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Sector	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—
Mobile	—	4,507	4,507	0.20	0.20	9.21	4,580
Area	0.00	17.1	17.1	< 0.005	< 0.005	—	17.2
Energy	—	167	167	0.01	< 0.005	—	168
Water	6.86	41.2	48.1	0.02	0.01	—	53.1
Waste	40.7	0.00	40.7	4.07	0.00	—	142
Refrig.	—	—	—	—	—	1.58	1.58
Total	47.5	4,733	4,781	4.31	0.21	10.8	4,962
Daily, Winter (Max)	—	—	—	—	—	—	—
Mobile	—	4,250	4,250	0.23	0.22	0.24	4,321
Area	0.00	0.00	0.00	0.00	0.00	—	0.00
Energy	—	167	167	0.01	< 0.005	—	168
Water	6.86	41.2	48.1	0.02	0.01	—	53.1
Waste	40.7	0.00	40.7	4.07	0.00	—	142
Refrig.	—	—	—	—	—	1.58	1.58
Total	47.5	4,459	4,506	4.34	0.23	1.82	4,686
Average Daily	—	—	—	—	—	—	—
Mobile	—	4,176	4,176	0.21	0.20	3.89	4,246

Area	0.00	8.45	8.45	< 0.005	< 0.005	—	8.48
Energy	—	167	167	0.01	< 0.005	—	168
Water	6.86	41.2	48.1	0.02	0.01	—	53.1
Waste	40.7	0.00	40.7	4.07	0.00	—	142
Refrig.	—	—	—	—	—	1.58	1.58
Total	47.5	4,394	4,441	4.32	0.22	5.47	4,620
Annual	—	—	—	—	—	—	—
Mobile	—	691	691	0.04	0.03	0.64	703
Area	0.00	1.40	1.40	< 0.005	< 0.005	—	1.40
Energy	—	27.7	27.7	< 0.005	< 0.005	—	27.8
Water	1.14	6.83	7.96	< 0.005	< 0.005	—	8.80
Waste	6.74	0.00	6.74	0.67	0.00	—	23.6
Refrig.	—	—	—	—	—	0.26	0.26
Total	7.87	727	735	0.72	0.04	0.91	765

4. Operations Emissions Details

4.1. Mobile Emissions by Land Use

4.1.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—
Single Family Housing	—	4,507	4,507	0.20	0.20	9.21	4,580
Total	—	4,507	4,507	0.20	0.20	9.21	4,580
Daily, Winter (Max)	—	—	—	—	—	—	—
Single Family Housing	—	4,250	4,250	0.23	0.22	0.24	4,321
Total	—	4,250	4,250	0.23	0.22	0.24	4,321

Annual	—	—	—	—	—	—	—
Single Family Housing	—	691	691	0.04	0.03	0.64	703
Total	—	691	691	0.04	0.03	0.64	703

4.1.2. Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—
Single Family Housing	—	4,507	4,507	0.20	0.20	9.21	4,580
Total	—	4,507	4,507	0.20	0.20	9.21	4,580
Daily, Winter (Max)	—	—	—	—	—	—	—
Single Family Housing	—	4,250	4,250	0.23	0.22	0.24	4,321
Total	—	4,250	4,250	0.23	0.22	0.24	4,321
Annual	—	—	—	—	—	—	—
Single Family Housing	—	691	691	0.04	0.03	0.64	703
Total	—	691	691	0.04	0.03	0.64	703

4.2. Energy

4.2.1. Electricity Emissions By Land Use - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—
Single Family Housing	—	0.00	0.00	0.00	0.00	—	0.00
Total	—	0.00	0.00	0.00	0.00	—	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—
Single Family Housing	—	0.00	0.00	0.00	0.00	—	0.00
Total	—	0.00	0.00	0.00	0.00	—	0.00

Annual	—	—	—	—	—	—	—
Single Family Housing	—	0.00	0.00	0.00	0.00	—	0.00
Total	—	0.00	0.00	0.00	0.00	—	0.00

4.2.2. Electricity Emissions By Land Use - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—
Single Family Housing	—	0.00	0.00	0.00	0.00	—	0.00
Total	—	0.00	0.00	0.00	0.00	—	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—
Single Family Housing	—	0.00	0.00	0.00	0.00	—	0.00
Total	—	0.00	0.00	0.00	0.00	—	0.00
Annual	—	—	—	—	—	—	—
Single Family Housing	—	0.00	0.00	0.00	0.00	—	0.00
Total	—	0.00	0.00	0.00	0.00	—	0.00

4.2.3. Natural Gas Emissions By Land Use - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—
Single Family Housing	—	167	167	0.01	< 0.005	—	168
Total	—	167	167	0.01	< 0.005	—	168
Daily, Winter (Max)	—	—	—	—	—	—	—
Single Family Housing	—	167	167	0.01	< 0.005	—	168
Total	—	167	167	0.01	< 0.005	—	168
Annual	—	—	—	—	—	—	—
Single Family Housing	—	27.7	27.7	< 0.005	< 0.005	—	27.8

Total	—	27.7	27.7	< 0.005	< 0.005	—	27.8

4.2.4. Natural Gas Emissions By Land Use - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—
Single Family Housing	—	167	167	0.01	< 0.005	—	168
Total	—	167	167	0.01	< 0.005	—	168
Daily, Winter (Max)	—	—	—	—	—	—	—
Single Family Housing	—	167	167	0.01	< 0.005	—	168
Total	—	167	167	0.01	< 0.005	—	168
Annual	—	—	—	—	—	—	—
Single Family Housing	—	27.7	27.7	< 0.005	< 0.005	—	27.8
Total	—	27.7	27.7	< 0.005	< 0.005	—	27.8

4.3. Area Emissions by Source

4.3.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Source	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—
Hearths	0.00	0.00	0.00	0.00	0.00	—	0.00
Consumer Products	—	—	—	—	—	—	—
Architectural Coatings	—	—	—	—	—	—	—
Landscape Equipment	—	17.1	17.1	< 0.005	< 0.005	—	17.2
Total	0.00	17.1	17.1	< 0.005	< 0.005	—	17.2
Daily, Winter (Max)	—	—	—	—	—	—	—
Hearths	0.00	0.00	0.00	0.00	0.00	—	0.00

Consumer Products	—	—	—	—	—	—	—
Architectural Coatings	—	—	—	—	—	—	—
Total	0.00	0.00	0.00	0.00	0.00	—	0.00
Annual	—	—	—	—	—	—	—
Hearths	0.00	0.00	0.00	0.00	0.00	—	0.00
Consumer Products	—	—	—	—	—	—	—
Architectural Coatings	—	—	—	—	—	—	—
Landscape Equipment	—	1.40	1.40	< 0.005	< 0.005	—	1.40
Total	0.00	1.40	1.40	< 0.005	< 0.005	—	1.40

4.3.2. Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Source	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—
Hearths	0.00	0.00	0.00	0.00	0.00	—	0.00
Consumer Products	—	—	—	—	—	—	—
Architectural Coatings	—	—	—	—	—	—	—
Landscape Equipment	—	17.1	17.1	< 0.005	< 0.005	—	17.2
Total	0.00	17.1	17.1	< 0.005	< 0.005	—	17.2
Daily, Winter (Max)	—	—	—	—	—	—	—
Hearths	0.00	0.00	0.00	0.00	0.00	—	0.00
Consumer Products	—	—	—	—	—	—	—
Architectural Coatings	—	—	—	—	—	—	—
Total	0.00	0.00	0.00	0.00	0.00	—	0.00
Annual	—	—	—	—	—	—	—
Hearths	0.00	0.00	0.00	0.00	0.00	—	0.00
Consumer Products	—	—	—	—	—	—	—
Architectural Coatings	—	—	—	—	—	—	—

Landscape Equipment	—	1.40	1.40	< 0.005	< 0.005	—	1.40
Total	0.00	1.40	1.40	< 0.005	< 0.005	—	1.40

4.4. Water Emissions by Land Use

4.4.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—
Single Family Housing	8.58	43.2	51.7	0.03	0.02	—	58.0
Total	8.58	43.2	51.7	0.03	0.02	—	58.0
Daily, Winter (Max)	—	—	—	—	—	—	—
Single Family Housing	8.58	43.2	51.7	0.03	0.02	—	58.0
Total	8.58	43.2	51.7	0.03	0.02	—	58.0
Annual	—	—	—	—	—	—	—
Single Family Housing	1.42	7.14	8.56	< 0.005	< 0.005	—	9.61
Total	1.42	7.14	8.56	< 0.005	< 0.005	—	9.61

4.4.2. Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—
Single Family Housing	6.86	41.2	48.1	0.02	0.01	—	53.1
Total	6.86	41.2	48.1	0.02	0.01	—	53.1
Daily, Winter (Max)	—	—	—	—	—	—	—
Single Family Housing	6.86	41.2	48.1	0.02	0.01	—	53.1
Total	6.86	41.2	48.1	0.02	0.01	—	53.1
Annual	—	—	—	—	—	—	—

Single Family Housing	1.14	6.83	7.96	< 0.005	< 0.005	—	8.80
Total	1.14	6.83	7.96	< 0.005	< 0.005	—	8.80

4.5. Waste Emissions by Land Use

4.5.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—
Single Family Housing	40.7	0.00	40.7	4.07	0.00	—	142
Total	40.7	0.00	40.7	4.07	0.00	—	142
Daily, Winter (Max)	—	—	—	—	—	—	—
Single Family Housing	40.7	0.00	40.7	4.07	0.00	—	142
Total	40.7	0.00	40.7	4.07	0.00	—	142
Annual	—	—	—	—	—	—	—
Single Family Housing	6.74	0.00	6.74	0.67	0.00	—	23.6
Total	6.74	0.00	6.74	0.67	0.00	—	23.6

4.5.2. Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—
Single Family Housing	40.7	0.00	40.7	4.07	0.00	—	142
Total	40.7	0.00	40.7	4.07	0.00	—	142
Daily, Winter (Max)	—	—	—	—	—	—	—
Single Family Housing	40.7	0.00	40.7	4.07	0.00	—	142
Total	40.7	0.00	40.7	4.07	0.00	—	142
Annual	—	—	—	—	—	—	—

Single Family Housing	6.74	0.00	6.74	0.67	0.00	—	23.6
Total	6.74	0.00	6.74	0.67	0.00	—	23.6

4.6. Refrigerant Emissions by Land Use

4.6.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	1.58	1.58
Total	—	—	—	—	—	1.58	1.58
Daily, Winter (Max)	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	1.58	1.58
Total	—	—	—	—	—	1.58	1.58
Annual	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	0.26	0.26
Total	—	—	—	—	—	0.26	0.26

4.6.2. Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	1.58	1.58
Total	—	—	—	—	—	1.58	1.58
Daily, Winter (Max)	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	1.58	1.58
Total	—	—	—	—	—	1.58	1.58
Annual	—	—	—	—	—	—	—

Single Family Housing	—	—	—	—	—	0.26	0.26
Total	—	—	—	—	—	0.26	0.26

4.7. Offroad Emissions By Equipment Type

4.7.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—

4.7.2. Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—

4.8. Stationary Emissions By Equipment Type

4.8.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—

4.8.2. Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—

4.9. User Defined Emissions By Equipment Type

4.9.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—

Annual	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—

4.9.2. Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—

4.10. Soil Carbon Accumulation By Vegetation Type

4.10.1. Soil Carbon Accumulation By Vegetation Type - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Vegetation	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—

4.10.2. Above and Belowground Carbon Accumulation by Land Use Type - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e

Daily, Summer (Max)	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—

4.10.3. Avoided and Sequestered Emissions by Species - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Species	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—

Subtotal	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—

4.10.4. Soil Carbon Accumulation By Vegetation Type - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Vegetation	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—

4.10.5. Above and Belowground Carbon Accumulation by Land Use Type - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—

4.10.6. Avoided and Sequestered Emissions by Species - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Species	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—

5. Activity Data

5.9. Operational Mobile Sources

5.9.1. Unmitigated

Land Use Type	Trips/Weekday	Trips/Saturday	Trips/Sunday	Trips/Year	VMT/Weekday	VMT/Saturday	VMT/Sunday	VMT/Year
Single Family Housing	1,067	1,078	966	384,698	6,240	6,306	5,652	2,250,495

5.9.2. Mitigated

Land Use Type	Trips/Weekday	Trips/Saturday	Trips/Sunday	Trips/Year	VMT/Weekday	VMT/Saturday	VMT/Sunday	VMT/Year
Single Family Housing	1,067	1,078	966	384,698	6,240	6,306	5,652	2,250,495

5.10. Operational Area Sources

5.10.1. Hearths

5.10.1.1. Unmitigated

Hearth Type	Unmitigated (number)
Single Family Housing	—
Wood Fireplaces	0
Gas Fireplaces	0
Propane Fireplaces	0
Electric Fireplaces	0
No Fireplaces	0
Conventional Wood Stoves	0
Catalytic Wood Stoves	0
Non-Catalytic Wood Stoves	0

Pellet Wood Stoves	0

5.10.1.2. Mitigated

Hearth Type	Unmitigated (number)
Single Family Housing	—
Wood Fireplaces	0
Gas Fireplaces	0
Propane Fireplaces	0
Electric Fireplaces	0
No Fireplaces	0
Conventional Wood Stoves	0
Catalytic Wood Stoves	0
Non-Catalytic Wood Stoves	0
Pellet Wood Stoves	0

5.10.2. Architectural Coatings

Residential Interior Area Coated (sq ft)	Residential Exterior Area Coated (sq ft)	Non-Residential Interior Area Coated (sq ft)	Non-Residential Exterior Area Coated (sq ft)	Parking Area Coated (sq ft)
446208.75	148,736	0.00	0.00	—

5.10.3. Landscape Equipment

Season	Unit	Value
Snow Days	day/yr	0.00
Summer Days	day/yr	180

5.10.4. Landscape Equipment - Mitigated

Season	Unit	Value

Snow Days	day/yr	0.00
Summer Days	day/yr	180

5.11. Operational Energy Consumption

5.11.1. Unmitigated

Electricity (kWh/yr) and CO2 and CH4 and N2O and Natural Gas (kBTU/yr)

Land Use	Electricity (kWh/yr)	CO2	CH4	N2O	Natural Gas (kBTU/yr)
Single Family Housing	0.00	135	0.0000	0.0000	522,308

5.11.2. Mitigated

Electricity (kWh/yr) and CO2 and CH4 and N2O and Natural Gas (kBTU/yr)

Land Use	Electricity (kWh/yr)	CO2	CH4	N2O	Natural Gas (kBTU/yr)
Single Family Housing	0.00	135	0.0000	0.0000	522,308

5.12. Operational Water and Wastewater Consumption

5.12.1. Unmitigated

Land Use	Indoor Water (gal/year)	Outdoor Water (gal/year)
Single Family Housing	4,012,726	18,378,911

5.12.2. Mitigated

Land Use	Indoor Water (gal/year)	Outdoor Water (gal/year)
Single Family Housing	3,210,181	18,378,911

5.13. Operational Waste Generation

5.13.1. Unmitigated

Land Use	Waste (ton/year)	Cogeneration (kWh/year)
Single Family Housing	75.5	—

5.13.2. Mitigated

Land Use	Waste (ton/year)	Cogeneration (kWh/year)
Single Family Housing	75.5	—

5.14. Operational Refrigeration and Air Conditioning Equipment

5.14.1. Unmitigated

Land Use Type	Equipment Type	Refrigerant	GWP	Quantity (kg)	Operations Leak Rate	Service Leak Rate	Times Serviced
Single Family Housing	Average room A/C & Other residential A/C and heat pumps	R-410A	2,088	< 0.005	2.50	2.50	10.0
Single Family Housing	Household refrigerators and/or freezers	R-134a	1,430	0.12	0.60	0.00	1.00

5.14.2. Mitigated

Land Use Type	Equipment Type	Refrigerant	GWP	Quantity (kg)	Operations Leak Rate	Service Leak Rate	Times Serviced
Single Family Housing	Average room A/C & Other residential A/C and heat pumps	R-410A	2,088	< 0.005	2.50	2.50	10.0
Single Family Housing	Household refrigerators and/or freezers	R-134a	1,430	0.12	0.60	0.00	1.00

5.15. Operational Off-Road Equipment

5.15.1. Unmitigated

Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor

5.15.2. Mitigated

Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor

5.16. Stationary Sources

5.16.1. Emergency Generators and Fire Pumps

Equipment Type	Fuel Type	Number per Day	Hours per Day	Hours per Year	Horsepower	Load Factor

5.16.2. Process Boilers

Equipment Type	Fuel Type	Number	Boiler Rating (MMBtu/hr)	Daily Heat Input (MMBtu/day)	Annual Heat Input (MMBtu/yr)

5.17. User Defined

Equipment Type	Fuel Type

5.18. Vegetation

5.18.1. Land Use Change

5.18.1.1. Unmitigated

Vegetation Land Use Type	Vegetation Soil Type	Initial Acres	Final Acres

5.18.1.2. Mitigated

Vegetation Land Use Type	Vegetation Soil Type	Initial Acres	Final Acres

5.18.1. Biomass Cover Type

5.18.1.1. Unmitigated

Biomass Cover Type	Initial Acres	Final Acres

5.18.1.2. Mitigated

Biomass Cover Type	Initial Acres	Final Acres

5.18.2. Sequestration

5.18.2.1. Unmitigated

Tree Type	Number	Electricity Saved (kWh/year)	Natural Gas Saved (btu/year)

5.18.2.2. Mitigated

Tree Type	Number	Electricity Saved (kWh/year)	Natural Gas Saved (btu/year)

6. Climate Risk Detailed Report

6.1. Climate Risk Summary

Cal-Adapt midcentury 2040–2059 average projections for four hazards are reported below for your project location. These are under Representation Concentration Pathway (RCP) 8.5 which assumes GHG emissions will continue to rise strongly through 2050 and then plateau around 2100.

Climate Hazard	Result for Project Location	Unit
Temperature and Extreme Heat	7.10	annual days of extreme heat
Extreme Precipitation	7.50	annual days with precipitation above 20 mm
Sea Level Rise	—	meters of inundation depth
Wildfire	0.00	annual hectares burned

Temperature and Extreme Heat data are for grid cell in which your project are located. The projection is based on the 98th historical percentile of daily maximum/minimum temperatures from observed historical data (32 climate model ensemble from Cal-Adapt, 2040–2059 average under RCP 8.5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.
Extreme Precipitation data are for the grid cell in which your project are located. The threshold of 20 mm is equivalent to about ¾ an inch of rain, which would be light to moderate rainfall if received over a full day or heavy rain if received over a period of 2 to 4 hours. Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.
Sea Level Rise data are for the grid cell in which your project are located. The projections are from Radke et al. (2017), as reported in Cal-Adapt (Radke et al., 2017, CEC-500-2017-008), and consider inundation location and depth for the San Francisco Bay, the Sacramento-San Joaquin River Delta and California coast resulting different increments of sea level rise coupled with extreme storm events. Users may select from four scenarios to view the range in potential inundation depth for the grid cell. The four scenarios are: No rise, 0.5 meter, 1.0 meter, 1.41 meters
Wildfire data are for the grid cell in which your project are located. The projections are from UC Davis, as reported in Cal-Adapt (2040–2059 average under RCP 8.5), and consider historical data of climate, vegetation, population density, and large (> 400 ha) fire history. Users may select from four model simulations to view the range in potential wildfire probabilities for the grid cell. The four simulations make different assumptions about expected rainfall and temperature are: Warmer/drier (HadGEM2-ES), Cooler/wetter (CNRM-CM5), Average conditions (CanESM2), Range of different rainfall and temperature possibilities (MIROC5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.

6.2. Initial Climate Risk Scores

Climate Hazard	Exposure Score	Sensitivity Score	Adaptive Capacity Score	Vulnerability Score
Temperature and Extreme Heat	N/A	N/A	N/A	N/A
Extreme Precipitation	2	0	0	N/A
Sea Level Rise	1	0	0	N/A
Wildfire	1	0	0	N/A
Flooding	N/A	N/A	N/A	N/A
Drought	N/A	N/A	N/A	N/A
Snowpack Reduction	N/A	N/A	N/A	N/A
Air Quality Degradation	0	0	0	N/A

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.
The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.
The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores do not include implementation of climate risk reduction measures.

6.3. Adjusted Climate Risk Scores

Climate Hazard	Exposure Score	Sensitivity Score	Adaptive Capacity Score	Vulnerability Score
Temperature and Extreme Heat	N/A	N/A	N/A	N/A
Extreme Precipitation	2	1	1	3
Sea Level Rise	1	1	1	2

Wildfire	1	1	1	2
Flooding	N/A	N/A	N/A	N/A
Drought	N/A	N/A	N/A	N/A
Snowpack Reduction	N/A	N/A	N/A	N/A
Air Quality Degradation	1	1	1	2

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.
The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.
The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores include implementation of climate risk reduction measures.

6.4. Climate Risk Reduction Measures

7. Health and Equity Details

7.1. CalEnviroScreen 4.0 Scores

The maximum CalEnviroScreen score is 100. A high score (i.e., greater than 50) reflects a higher pollution burden compared to other census tracts in the state.

Indicator	Result for Project Census Tract
Exposure Indicators	—
AQ-Ozone	3.12
AQ-PM	39.2
AQ-DPM	77.5
Drinking Water	4.21
Lead Risk Housing	61.6
Pesticides	0.00
Toxic Releases	61.3
Traffic	31.2
Effect Indicators	—
CleanUp Sites	65.0
Groundwater	97.0

Haz Waste Facilities/Generators	93.0
Impaired Water Bodies	90.1
Solid Waste	9.67
Sensitive Population	—
Asthma	81.1
Cardio-vascular	46.8
Low Birth Weights	44.5
Socioeconomic Factor Indicators	—
Education	26.4
Housing	55.1
Linguistic	6.27
Poverty	35.6
Unemployment	49.9

7.2. Healthy Places Index Scores

The maximum Health Places Index score is 100. A high score (i.e., greater than 50) reflects healthier community conditions compared to other census tracts in the state.

Indicator	Result for Project Census Tract
Economic	—
Above Poverty	59.38662903
Employed	93.82779417
Median HI	46.50327217
Education	—
Bachelor's or higher	88.88746311
High school enrollment	100
Preschool enrollment	74.06646991
Transportation	—
Auto Access	13.06300526
Active commuting	96.25304761

Social	—
2-parent households	16.38650071
Voting	76.22225074
Neighborhood	—
Alcohol availability	4.516874118
Park access	81.35506224
Retail density	82.84357757
Supermarket access	74.27178237
Tree canopy	46.11831131
Housing	—
Homeownership	47.94045939
Housing habitability	50.7121776
Low-inc homeowner severe housing cost burden	19.67150006
Low-inc renter severe housing cost burden	46.67008854
Uncrowded housing	60.05389452
Health Outcomes	—
Insured adults	80.68779674
Arthritis	60.6
Asthma ER Admissions	13.2
High Blood Pressure	62.1
Cancer (excluding skin)	38.7
Asthma	61.7
Coronary Heart Disease	79.3
Chronic Obstructive Pulmonary Disease	88.0
Diagnosed Diabetes	75.2
Life Expectancy at Birth	71.4
Cognitively Disabled	85.7
Physically Disabled	84.3

Heart Attack ER Admissions	59.6
Mental Health Not Good	82.3
Chronic Kidney Disease	64.9
Obesity	68.7
Pedestrian Injuries	19.6
Physical Health Not Good	84.3
Stroke	70.4
Health Risk Behaviors	—
Binge Drinking	38.6
Current Smoker	87.1
No Leisure Time for Physical Activity	83.8
Climate Change Exposures	—
Wildfire Risk	0.0
SLR Inundation Area	0.0
Children	92.8
Elderly	43.9
English Speaking	71.2
Foreign-born	47.0
Outdoor Workers	90.9
Climate Change Adaptive Capacity	—
Impervious Surface Cover	28.0
Traffic Density	29.2
Traffic Access	87.4
Other Indices	—
Hardship	21.5
Other Decision Support	—
2016 Voting	71.1

7.3. Overall Health & Equity Scores

Metric	Result for Project Census Tract
CalEnviroScreen 4.0 Score for Project Location (a)	54.0
Healthy Places Index Score for Project Location (b)	82.0
Project Located in a Designated Disadvantaged Community (Senate Bill 535)	No
Project Located in a Low-Income Community (Assembly Bill 1550)	Yes
Project Located in a Community Air Protection Program Community (Assembly Bill 617)	No

a: The maximum CalEnviroScreen score is 100. A high score (i.e., greater than 50) reflects a higher pollution burden compared to other census tracts in the state.
b: The maximum Health Places Index score is 100. A high score (i.e., greater than 50) reflects healthier community conditions compared to other census tracts in the state.

7.4. Health & Equity Measures

No Health & Equity Measures selected.

7.5. Evaluation Scorecard

Health & Equity Evaluation Scorecard not completed.

7.6. Health & Equity Custom Measures

No Health & Equity Custom Measures created.

8. User Changes to Default Data

Screen	Justification
Characteristics: Utility Information	East Bay Community Energy is the primary electricity provider. Intensity factors adjusted for consistency with Berkeley Housing Element methodology.
Land Use	Based on EIR growth assumption of 113 single-family units and 323 new residents. Default acreage, building square footage, and landscape area.
Operations: Hearths	No woodstoves or fireplaces
Operations: Energy Use	Assume 90% of development will not include natural gas pursuant to BMC Section 12.80 (Natural gas ban). Assumes 100% offset of electricity consumption by onsite PV solar.
Operations: Water and Waste Water	EBMUD Wastewater treatment plant 100 percent aerobic

Berkeley HE Multi Fam 90% Electrified Detailed Report

Table of Contents

1. Basic Project Information

1.1. Basic Project Information

1.2. Land Use Types

1.3. User-Selected Emission Reduction Measures by Emissions Sector

2. Emissions Summary

2.4. Operations Emissions Compared Against Thresholds

2.5. Operations Emissions by Sector, Unmitigated

2.6. Operations Emissions by Sector, Mitigated

4. Operations Emissions Details

4.1. Mobile Emissions by Land Use

4.1.1. Unmitigated

4.1.2. Mitigated

4.2. Energy

4.2.1. Electricity Emissions By Land Use - Unmitigated

4.2.2. Electricity Emissions By Land Use - Mitigated

4.2.3. Natural Gas Emissions By Land Use - Unmitigated

4.2.4. Natural Gas Emissions By Land Use - Mitigated

4.3. Area Emissions by Source

4.3.1. Unmitigated

4.3.2. Mitigated

4.4. Water Emissions by Land Use

4.4.1. Unmitigated

4.4.2. Mitigated

4.5. Waste Emissions by Land Use

4.5.1. Unmitigated

4.5.2. Mitigated

4.6. Refrigerant Emissions by Land Use

4.6.1. Unmitigated

4.6.2. Mitigated

4.7. Offroad Emissions By Equipment Type

4.7.1. Unmitigated

4.7.2. Mitigated

4.8. Stationary Emissions By Equipment Type

4.8.1. Unmitigated

4.8.2. Mitigated

4.9. User Defined Emissions By Equipment Type

4.9.1. Unmitigated

4.9.2. Mitigated

4.10. Soil Carbon Accumulation By Vegetation Type

4.10.1. Soil Carbon Accumulation By Vegetation Type - Unmitigated

4.10.2. Above and Belowground Carbon Accumulation by Land Use Type - Unmitigated

4.10.3. Avoided and Sequestered Emissions by Species - Unmitigated

4.10.4. Soil Carbon Accumulation By Vegetation Type - Mitigated

4.10.5. Above and Belowground Carbon Accumulation by Land Use Type - Mitigated

4.10.6. Avoided and Sequestered Emissions by Species - Mitigated

5. Activity Data

5.9. Operational Mobile Sources

5.9.1. Unmitigated

5.9.2. Mitigated

5.10. Operational Area Sources

5.10.1. Hearths

5.10.1.1. Unmitigated

5.10.1.2. Mitigated

5.10.2. Architectural Coatings

5.10.3. Landscape Equipment

5.10.4. Landscape Equipment - Mitigated

5.11. Operational Energy Consumption

5.11.1. Unmitigated

5.11.2. Mitigated

5.12. Operational Water and Wastewater Consumption

5.12.1. Unmitigated

5.12.2. Mitigated

5.13. Operational Waste Generation

5.13.1. Unmitigated

5.13.2. Mitigated

5.14. Operational Refrigeration and Air Conditioning Equipment

5.14.1. Unmitigated

5.14.2. Mitigated

5.15. Operational Off-Road Equipment

5.15.1. Unmitigated

5.15.2. Mitigated

5.16. Stationary Sources

5.16.1. Emergency Generators and Fire Pumps

5.16.2. Process Boilers

5.17. User Defined

5.18. Vegetation

5.18.1. Land Use Change

5.18.1.1. Unmitigated

5.18.1.2. Mitigated

5.18.1. Biomass Cover Type

5.18.1.1. Unmitigated

5.18.1.2. Mitigated

5.18.2. Sequestration

5.18.2.1. Unmitigated

5.18.2.2. Mitigated

6. Climate Risk Detailed Report

6.1. Climate Risk Summary

6.2. Initial Climate Risk Scores

6.3. Adjusted Climate Risk Scores

6.4. Climate Risk Reduction Measures

7. Health and Equity Details

7.1. CalEnviroScreen 4.0 Scores

7.2. Healthy Places Index Scores

7.3. Overall Health & Equity Scores

7.4. Health & Equity Measures

7.5. Evaluation Scorecard

7.6. Health & Equity Custom Measures

8. User Changes to Default Data

1. Basic Project Information

1.1. Basic Project Information

Data Field	Value
Project Name	Berkeley HE Multi Fam 90% Electrified
Operational Year	2031
Lead Agency	—
Land Use Scale	Plan/community
Analysis Level for Defaults	County
Windspeed (m/s)	3.90
Precipitation (days)	3.40
Location	37.87310585963721, -122.29377329662165
County	Alameda
City	Berkeley
Air District	Bay Area AQMD
Air Basin	San Francisco Bay Area
TAZ	1533
EDFZ	1
Electric Utility	User Defined
Gas Utility	User Defined
App Version	2022.1.1.29

1.2. Land Use Types

Land Use Subtype	Size	Unit	Lot Acreage	Building Area (sq ft)	Landscape Area (sq ft)	Special Landscape Area (sq ft)	Population	Description
Apartments Mid Rise	17,427	Dwelling Unit	459	16,729,920	0.00	—	42,630	—
Condo/Townhouse	1,570	Dwelling Unit	98.1	1,664,200	0.00	—	4,490	—

1.3. User-Selected Emission Reduction Measures by Emissions Sector

Sector	#	Measure Title
Water	W-7	Adopt a Water Conservation Strategy

2. Emissions Summary

2.4. Operations Emissions Compared Against Thresholds

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Un/Mit.	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—
Unmit.	6,787	518,912	525,699	687	21.5	1,064	550,338
Mit.	6,761	518,883	525,644	687	21.4	1,064	550,265
% Reduced	< 0.5%	< 0.5%	< 0.5%	< 0.5%	< 0.5%	—	< 0.5%
Daily, Winter (Max)	—	—	—	—	—	—	—
Unmit.	6,787	490,429	497,216	690	23.4	156	521,604
Mit.	6,761	490,401	497,162	690	23.4	156	521,531
% Reduced	< 0.5%	< 0.5%	< 0.5%	< 0.5%	< 0.5%	—	< 0.5%
Average Daily (Max)	—	—	—	—	—	—	—
Unmit.	6,787	469,339	476,126	687	21.4	512	500,206
Mit.	6,761	469,310	476,072	687	21.4	512	500,133
% Reduced	< 0.5%	< 0.5%	< 0.5%	< 0.5%	< 0.5%	—	< 0.5%
Annual (Max)	—	—	—	—	—	—	—
Unmit.	1,124	77,704	78,828	114	3.55	84.7	82,815
Mit.	1,119	77,700	78,819	114	3.54	84.7	82,803
% Reduced	< 0.5%	< 0.5%	< 0.5%	< 0.5%	< 0.5%	—	< 0.5%

2.5. Operations Emissions by Sector, Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Sector	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—
Mobile	—	464,159	464,159	20.2	21.2	932	471,906
Area	0.00	2,882	2,882	0.12	0.02	—	2,892
Energy	—	50,304	50,304	0.57	0.01	—	50,321
Water	128	1,567	1,695	0.44	0.28	—	1,789
Waste	6,659	0.00	6,659	666	0.00	—	23,298
Refrig.	—	—	—	—	—	132	132
Total	6,787	518,912	525,699	687	21.5	1,064	550,338
Daily, Winter (Max)	—	—	—	—	—	—	—
Mobile	—	438,559	438,559	23.4	23.1	24.2	446,064
Area	0.00	0.00	0.00	0.00	0.00	—	0.00
Energy	—	50,304	50,304	0.57	0.01	—	50,321
Water	128	1,567	1,695	0.44	0.28	—	1,789
Waste	6,659	0.00	6,659	666	0.00	—	23,298
Refrig.	—	—	—	—	—	132	132
Total	6,787	490,429	497,216	690	23.4	156	521,604
Average Daily	—	—	—	—	—	—	—
Mobile	—	416,047	416,047	20.8	21.1	380	423,241
Area	0.00	1,421	1,421	0.06	0.01	—	1,426
Energy	—	50,304	50,304	0.57	0.01	—	50,321
Water	128	1,567	1,695	0.44	0.28	—	1,789
Waste	6,659	0.00	6,659	666	0.00	—	23,298
Refrig.	—	—	—	—	—	132	132
Total	6,787	469,339	476,126	687	21.4	512	500,206
Annual	—	—	—	—	—	—	—
Mobile	—	68,881	68,881	3.45	3.50	62.9	70,072

Area	0.00	235	235	0.01	< 0.005	—	236
Energy	—	8,328	8,328	0.09	< 0.005	—	8,331
Water	21.1	259	281	0.07	0.05	—	296
Waste	1,102	0.00	1,102	110	0.00	—	3,857
Refrig.	—	—	—	—	—	21.8	21.8
Total	1,124	77,704	78,828	114	3.55	84.7	82,815

2.6. Operations Emissions by Sector, Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Sector	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—
Mobile	—	464,159	464,159	20.2	21.2	932	471,906
Area	0.00	2,882	2,882	0.12	0.02	—	2,892
Energy	—	50,304	50,304	0.57	0.01	—	50,321
Water	102	1,538	1,641	0.35	0.22	—	1,716
Waste	6,659	0.00	6,659	666	0.00	—	23,298
Refrig.	—	—	—	—	—	132	132
Total	6,761	518,883	525,644	687	21.4	1,064	550,265
Daily, Winter (Max)	—	—	—	—	—	—	—
Mobile	—	438,559	438,559	23.4	23.1	24.2	446,064
Area	0.00	0.00	0.00	0.00	0.00	—	0.00
Energy	—	50,304	50,304	0.57	0.01	—	50,321
Water	102	1,538	1,641	0.35	0.22	—	1,716
Waste	6,659	0.00	6,659	666	0.00	—	23,298
Refrig.	—	—	—	—	—	132	132
Total	6,761	490,401	497,162	690	23.4	156	521,531
Average Daily	—	—	—	—	—	—	—
Mobile	—	416,047	416,047	20.8	21.1	380	423,241

Area	0.00	1,421	1,421	0.06	0.01	—	1,426
Energy	—	50,304	50,304	0.57	0.01	—	50,321
Water	102	1,538	1,641	0.35	0.22	—	1,716
Waste	6,659	0.00	6,659	666	0.00	—	23,298
Refrig.	—	—	—	—	—	132	132
Total	6,761	469,310	476,072	687	21.4	512	500,133
Annual	—	—	—	—	—	—	—
Mobile	—	68,881	68,881	3.45	3.50	62.9	70,072
Area	0.00	235	235	0.01	< 0.005	—	236
Energy	—	8,328	8,328	0.09	< 0.005	—	8,331
Water	16.9	255	272	0.06	0.04	—	284
Waste	1,102	0.00	1,102	110	0.00	—	3,857
Refrig.	—	—	—	—	—	21.8	21.8
Total	1,119	77,700	78,819	114	3.54	84.7	82,803

4. Operations Emissions Details

4.1. Mobile Emissions by Land Use

4.1.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—
Apartments Mid Rise	—	409,022	409,022	17.8	18.7	821	415,848
Condo/Townhouse	—	55,138	55,138	2.40	2.52	111	56,058
Total	—	464,159	464,159	20.2	21.2	932	471,906
Daily, Winter (Max)	—	—	—	—	—	—	—
Apartments Mid Rise	—	386,462	386,462	20.6	20.4	21.3	393,076

Condo/Townhouse	—	52,097	52,097	2.78	2.75	2.87	52,988
Total	—	438,559	438,559	23.4	23.1	24.2	446,064
Annual	—	—	—	—	—	—	—
Apartments Mid Rise	—	61,121	61,121	3.06	3.10	55.8	62,177
Condo/Townhouse	—	7,761	7,761	0.39	0.39	7.09	7,895
Total	—	68,881	68,881	3.45	3.50	62.9	70,072

4.1.2. Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—
Apartments Mid Rise	—	409,022	409,022	17.8	18.7	821	415,848
Condo/Townhouse	—	55,138	55,138	2.40	2.52	111	56,058
Total	—	464,159	464,159	20.2	21.2	932	471,906
Daily, Winter (Max)	—	—	—	—	—	—	—
Apartments Mid Rise	—	386,462	386,462	20.6	20.4	21.3	393,076
Condo/Townhouse	—	52,097	52,097	2.78	2.75	2.87	52,988
Total	—	438,559	438,559	23.4	23.1	24.2	446,064
Annual	—	—	—	—	—	—	—
Apartments Mid Rise	—	61,121	61,121	3.06	3.10	55.8	62,177
Condo/Townhouse	—	7,761	7,761	0.39	0.39	7.09	7,895
Total	—	68,881	68,881	3.45	3.50	62.9	70,072

4.2. Energy

4.2.1. Electricity Emissions By Land Use - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e

Daily, Summer (Max)	—	—	—	—	—	—	—
Apartments Mid Rise	—	43,916	43,916	0.00	0.00	—	43,916
Condo/Townhouse	—	0.00	0.00	0.00	0.00	—	0.00
Total	—	43,916	43,916	0.00	0.00	—	43,916
Daily, Winter (Max)	—	—	—	—	—	—	—
Apartments Mid Rise	—	43,916	43,916	0.00	0.00	—	43,916
Condo/Townhouse	—	0.00	0.00	0.00	0.00	—	0.00
Total	—	43,916	43,916	0.00	0.00	—	43,916
Annual	—	—	—	—	—	—	—
Apartments Mid Rise	—	7,271	7,271	0.00	0.00	—	7,271
Condo/Townhouse	—	0.00	0.00	0.00	0.00	—	0.00
Total	—	7,271	7,271	0.00	0.00	—	7,271

4.2.2. Electricity Emissions By Land Use - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—
Apartments Mid Rise	—	43,916	43,916	0.00	0.00	—	43,916
Condo/Townhouse	—	0.00	0.00	0.00	0.00	—	0.00
Total	—	43,916	43,916	0.00	0.00	—	43,916
Daily, Winter (Max)	—	—	—	—	—	—	—
Apartments Mid Rise	—	43,916	43,916	0.00	0.00	—	43,916
Condo/Townhouse	—	0.00	0.00	0.00	0.00	—	0.00
Total	—	43,916	43,916	0.00	0.00	—	43,916
Annual	—	—	—	—	—	—	—
Apartments Mid Rise	—	7,271	7,271	0.00	0.00	—	7,271
Condo/Townhouse	—	0.00	0.00	0.00	0.00	—	0.00
Total	—	7,271	7,271	0.00	0.00	—	7,271

4.2.3. Natural Gas Emissions By Land Use - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—
Apartments Mid Rise	—	6,388	6,388	0.57	0.01	—	6,405
Condo/Townhouse	—	0.00	0.00	0.00	0.00	—	0.00
Total	—	6,388	6,388	0.57	0.01	—	6,405
Daily, Winter (Max)	—	—	—	—	—	—	—
Apartments Mid Rise	—	6,388	6,388	0.57	0.01	—	6,405
Condo/Townhouse	—	0.00	0.00	0.00	0.00	—	0.00
Total	—	6,388	6,388	0.57	0.01	—	6,405
Annual	—	—	—	—	—	—	—
Apartments Mid Rise	—	1,058	1,058	0.09	< 0.005	—	1,060
Condo/Townhouse	—	0.00	0.00	0.00	0.00	—	0.00
Total	—	1,058	1,058	0.09	< 0.005	—	1,060

4.2.4. Natural Gas Emissions By Land Use - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—
Apartments Mid Rise	—	6,388	6,388	0.57	0.01	—	6,405
Condo/Townhouse	—	0.00	0.00	0.00	0.00	—	0.00
Total	—	6,388	6,388	0.57	0.01	—	6,405
Daily, Winter (Max)	—	—	—	—	—	—	—
Apartments Mid Rise	—	6,388	6,388	0.57	0.01	—	6,405
Condo/Townhouse	—	0.00	0.00	0.00	0.00	—	0.00
Total	—	6,388	6,388	0.57	0.01	—	6,405
Annual	—	—	—	—	—	—	—

Apartments Mid Rise	—	1,058	1,058	0.09	< 0.005	—	1,060
Condo/Townhouse	—	0.00	0.00	0.00	0.00	—	0.00
Total	—	1,058	1,058	0.09	< 0.005	—	1,060

4.3. Area Emissions by Source

4.3.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Source	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—
Hearths	0.00	0.00	0.00	0.00	0.00	—	0.00
Consumer Products	—	—	—	—	—	—	—
Architectural Coatings	—	—	—	—	—	—	—
Landscape Equipment	—	2,882	2,882	0.12	0.02	—	2,892
Total	0.00	2,882	2,882	0.12	0.02	—	2,892
Daily, Winter (Max)	—	—	—	—	—	—	—
Hearths	0.00	0.00	0.00	0.00	0.00	—	0.00
Consumer Products	—	—	—	—	—	—	—
Architectural Coatings	—	—	—	—	—	—	—
Total	0.00	0.00	0.00	0.00	0.00	—	0.00
Annual	—	—	—	—	—	—	—
Hearths	0.00	0.00	0.00	0.00	0.00	—	0.00
Consumer Products	—	—	—	—	—	—	—
Architectural Coatings	—	—	—	—	—	—	—
Landscape Equipment	—	235	235	0.01	< 0.005	—	236
Total	0.00	235	235	0.01	< 0.005	—	236

4.3.2. Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Source	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—
Hearths	0.00	0.00	0.00	0.00	0.00	—	0.00
Consumer Products	—	—	—	—	—	—	—
Architectural Coatings	—	—	—	—	—	—	—
Landscape Equipment	—	2,882	2,882	0.12	0.02	—	2,892
Total	0.00	2,882	2,882	0.12	0.02	—	2,892
Daily, Winter (Max)	—	—	—	—	—	—	—
Hearths	0.00	0.00	0.00	0.00	0.00	—	0.00
Consumer Products	—	—	—	—	—	—	—
Architectural Coatings	—	—	—	—	—	—	—
Total	0.00	0.00	0.00	0.00	0.00	—	0.00
Annual	—	—	—	—	—	—	—
Hearths	0.00	0.00	0.00	0.00	0.00	—	0.00
Consumer Products	—	—	—	—	—	—	—
Architectural Coatings	—	—	—	—	—	—	—
Landscape Equipment	—	235	235	0.01	< 0.005	—	236
Total	0.00	235	235	0.01	< 0.005	—	236

4.4. Water Emissions by Land Use

4.4.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—
Apartments Mid Rise	8.58	1,434	1,442	0.03	0.02	—	1,448
Condo/Townhouse	119	134	253	0.41	0.26	—	340

Total	128	1,567	1,695	0.44	0.28	—	1,789
Daily, Winter (Max)	—	—	—	—	—	—	—
Apartments Mid Rise	8.58	1,434	1,442	0.03	0.02	—	1,448
Condo/Townhouse	119	134	253	0.41	0.26	—	340
Total	128	1,567	1,695	0.44	0.28	—	1,789
Annual	—	—	—	—	—	—	—
Apartments Mid Rise	1.42	237	239	< 0.005	< 0.005	—	240
Condo/Townhouse	19.7	22.1	41.8	0.07	0.04	—	56.4
Total	21.1	259	281	0.07	0.05	—	296

4.4.2. Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—
Apartments Mid Rise	6.86	1,432	1,439	0.02	0.01	—	1,444
Condo/Townhouse	95.3	107	202	0.33	0.21	—	272
Total	102	1,538	1,641	0.35	0.22	—	1,716
Daily, Winter (Max)	—	—	—	—	—	—	—
Apartments Mid Rise	6.86	1,432	1,439	0.02	0.01	—	1,444
Condo/Townhouse	95.3	107	202	0.33	0.21	—	272
Total	102	1,538	1,641	0.35	0.22	—	1,716
Annual	—	—	—	—	—	—	—
Apartments Mid Rise	1.14	237	238	< 0.005	< 0.005	—	239
Condo/Townhouse	15.8	17.7	33.5	0.05	0.03	—	45.1
Total	16.9	255	272	0.06	0.04	—	284

4.5. Waste Emissions by Land Use

4.5.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—
Apartments Mid Rise	6,025	0.00	6,025	602	0.00	—	21,078
Condo/Townhouse	635	0.00	635	63.4	0.00	—	2,220
Total	6,659	0.00	6,659	666	0.00	—	23,298
Daily, Winter (Max)	—	—	—	—	—	—	—
Apartments Mid Rise	6,025	0.00	6,025	602	0.00	—	21,078
Condo/Townhouse	635	0.00	635	63.4	0.00	—	2,220
Total	6,659	0.00	6,659	666	0.00	—	23,298
Annual	—	—	—	—	—	—	—
Apartments Mid Rise	997	0.00	997	99.7	0.00	—	3,490
Condo/Townhouse	105	0.00	105	10.5	0.00	—	368
Total	1,102	0.00	1,102	110	0.00	—	3,857

4.5.2. Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—
Apartments Mid Rise	6,025	0.00	6,025	602	0.00	—	21,078
Condo/Townhouse	635	0.00	635	63.4	0.00	—	2,220
Total	6,659	0.00	6,659	666	0.00	—	23,298
Daily, Winter (Max)	—	—	—	—	—	—	—
Apartments Mid Rise	6,025	0.00	6,025	602	0.00	—	21,078
Condo/Townhouse	635	0.00	635	63.4	0.00	—	2,220
Total	6,659	0.00	6,659	666	0.00	—	23,298
Annual	—	—	—	—	—	—	—

Apartments Mid Rise	997	0.00	997	99.7	0.00	—	3,490
Condo/Townhouse	105	0.00	105	10.5	0.00	—	368
Total	1,102	0.00	1,102	110	0.00	—	3,857

4.6. Refrigerant Emissions by Land Use

4.6.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—
Apartments Mid Rise	—	—	—	—	—	120	120
Condo/Townhouse	—	—	—	—	—	11.9	11.9
Total	—	—	—	—	—	132	132
Daily, Winter (Max)	—	—	—	—	—	—	—
Apartments Mid Rise	—	—	—	—	—	120	120
Condo/Townhouse	—	—	—	—	—	11.9	11.9
Total	—	—	—	—	—	132	132
Annual	—	—	—	—	—	—	—
Apartments Mid Rise	—	—	—	—	—	19.8	19.8
Condo/Townhouse	—	—	—	—	—	1.97	1.97
Total	—	—	—	—	—	21.8	21.8

4.6.2. Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—
Apartments Mid Rise	—	—	—	—	—	120	120
Condo/Townhouse	—	—	—	—	—	11.9	11.9

Total	—	—	—	—	—	132	132
Daily, Winter (Max)	—	—	—	—	—	—	—
Apartments Mid Rise	—	—	—	—	—	120	120
Condo/Townhouse	—	—	—	—	—	11.9	11.9
Total	—	—	—	—	—	132	132
Annual	—	—	—	—	—	—	—
Apartments Mid Rise	—	—	—	—	—	19.8	19.8
Condo/Townhouse	—	—	—	—	—	1.97	1.97
Total	—	—	—	—	—	21.8	21.8

4.7. Offroad Emissions By Equipment Type

4.7.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—

4.7.2. Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—

Total	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—

4.8. Stationary Emissions By Equipment Type

4.8.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—

4.8.2. Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—

4.9. User Defined Emissions By Equipment Type

4.9.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—

4.9.2. Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—

4.10. Soil Carbon Accumulation By Vegetation Type

4.10.1. Soil Carbon Accumulation By Vegetation Type - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Vegetation	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—

Total	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—

4.10.2. Above and Belowground Carbon Accumulation by Land Use Type - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—

4.10.3. Avoided and Sequestered Emissions by Species - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Species	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—

Sequestered	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—

4.10.4. Soil Carbon Accumulation By Vegetation Type - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Vegetation	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—

4.10.5. Above and Belowground Carbon Accumulation by Land Use Type - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—

Total	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—

4.10.6. Avoided and Sequestered Emissions by Species - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Species	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—

Sequestered	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—

5. Activity Data

5.9. Operational Mobile Sources

5.9.1. Unmitigated

Land Use Type	Trips/Weekday	Trips/Saturday	Trips/Sunday	Trips/Year	VMT/Weekday	VMT/Saturday	VMT/Sunday	VMT/Year
Apartments Mid Rise	94,803	85,567	71,276	32,894,708	554,600	500,567	416,969	192,435,070
Condo/Townhouse	11,492	12,780	9,860	4,176,716	67,231	74,762	57,679	24,433,919

5.9.2. Mitigated

Land Use Type	Trips/Weekday	Trips/Saturday	Trips/Sunday	Trips/Year	VMT/Weekday	VMT/Saturday	VMT/Sunday	VMT/Year
Apartments Mid Rise	94,803	85,567	71,276	32,894,708	554,600	500,567	416,969	192,435,070
Condo/Townhouse	11,492	12,780	9,860	4,176,716	67,231	74,762	57,679	24,433,919

5.10. Operational Area Sources

5.10.1. Hearths

5.10.1.1. Unmitigated

Hearth Type	Unmitigated (number)
Apartments Mid Rise	—

Wood Fireplaces	0
Gas Fireplaces	0
Propane Fireplaces	0
Electric Fireplaces	0
No Fireplaces	0
Conventional Wood Stoves	0
Catalytic Wood Stoves	0
Non-Catalytic Wood Stoves	0
Pellet Wood Stoves	0
Condo/Townhouse	—
Wood Fireplaces	0
Gas Fireplaces	0
Propane Fireplaces	0
Electric Fireplaces	0
No Fireplaces	0
Conventional Wood Stoves	0
Catalytic Wood Stoves	0
Non-Catalytic Wood Stoves	0
Pellet Wood Stoves	0

5.10.1.2. Mitigated

Hearth Type	Unmitigated (number)
Apartments Mid Rise	—
Wood Fireplaces	0
Gas Fireplaces	0
Propane Fireplaces	0
Electric Fireplaces	0
No Fireplaces	0

Conventional Wood Stoves	0
Catalytic Wood Stoves	0
Non-Catalytic Wood Stoves	0
Pellet Wood Stoves	0
Condo/Townhouse	—
Wood Fireplaces	0
Gas Fireplaces	0
Propane Fireplaces	0
Electric Fireplaces	0
No Fireplaces	0
Conventional Wood Stoves	0
Catalytic Wood Stoves	0
Non-Catalytic Wood Stoves	0
Pellet Wood Stoves	0

5.10.2. Architectural Coatings

Residential Interior Area Coated (sq ft)	Residential Exterior Area Coated (sq ft)	Non-Residential Interior Area Coated (sq ft)	Non-Residential Exterior Area Coated (sq ft)	Parking Area Coated (sq ft)
37248093	12,416,031	0.00	0.00	—

5.10.3. Landscape Equipment

Season	Unit	Value
Snow Days	day/yr	0.00
Summer Days	day/yr	180

5.10.4. Landscape Equipment - Mitigated

Season	Unit	Value

Snow Days	day/yr	0.00
Summer Days	day/yr	180

5.11. Operational Energy Consumption

5.11.1. Unmitigated

Electricity (kWh/yr) and CO2 and CH4 and N2O and Natural Gas (kBTU/yr)

Land Use	Electricity (kWh/yr)	CO2	CH4	N2O	Natural Gas (kBTU/yr)
Apartments Mid Rise	118,735,584	135	0.0000	0.0000	19,931,115
Condo/Townhouse	0.00	135	0.0000	0.0000	0.00

5.11.2. Mitigated

Electricity (kWh/yr) and CO2 and CH4 and N2O and Natural Gas (kBTU/yr)

Land Use	Electricity (kWh/yr)	CO2	CH4	N2O	Natural Gas (kBTU/yr)
Apartments Mid Rise	118,735,584	135	0.0000	0.0000	19,931,115
Condo/Townhouse	0.00	135	0.0000	0.0000	0.00

5.12. Operational Water and Wastewater Consumption

5.12.1. Unmitigated

Land Use	Indoor Water (gal/year)	Outdoor Water (gal/year)
Apartments Mid Rise	4,012,726	780,308,430
Condo/Townhouse	55,752,035	0.00

5.12.2. Mitigated

Land Use	Indoor Water (gal/year)	Outdoor Water (gal/year)
Apartments Mid Rise	3,210,181	780,308,430
Condo/Townhouse	44,601,628	0.00

5.13. Operational Waste Generation

5.13.1. Unmitigated

Land Use	Waste (ton/year)	Cogeneration (kWh/year)
Apartments Mid Rise	11,178	—
Condo/Townhouse	1,177	—

5.13.2. Mitigated

Land Use	Waste (ton/year)	Cogeneration (kWh/year)
Apartments Mid Rise	11,178	—
Condo/Townhouse	1,177	—

5.14. Operational Refrigeration and Air Conditioning Equipment

5.14.1. Unmitigated

Land Use Type	Equipment Type	Refrigerant	GWP	Quantity (kg)	Operations Leak Rate	Service Leak Rate	Times Serviced
Apartments Mid Rise	Average room A/C & Other residential A/C and heat pumps	R-410A	2,088	< 0.005	2.50	2.50	10.0
Apartments Mid Rise	Household refrigerators and/or freezers	R-134a	1,430	0.12	0.60	0.00	1.00
Condo/Townhouse	Average room A/C & Other residential A/C and heat pumps	R-410A	2,088	< 0.005	2.50	2.50	10.0
Condo/Townhouse	Household refrigerators and/or freezers	R-134a	1,430	0.12	0.60	0.00	1.00

5.14.2. Mitigated

Land Use Type	Equipment Type	Refrigerant	GWP	Quantity (kg)	Operations Leak Rate	Service Leak Rate	Times Serviced
Apartments Mid Rise	Average room A/C & Other residential A/C and heat pumps	R-410A	2,088	< 0.005	2.50	2.50	10.0
Apartments Mid Rise	Household refrigerators and/or freezers	R-134a	1,430	0.12	0.60	0.00	1.00
Condo/Townhouse	Average room A/C & Other residential A/C and heat pumps	R-410A	2,088	< 0.005	2.50	2.50	10.0
Condo/Townhouse	Household refrigerators and/or freezers	R-134a	1,430	0.12	0.60	0.00	1.00

5.15. Operational Off-Road Equipment

5.15.1. Unmitigated

Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor

5.15.2. Mitigated

Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor

5.16. Stationary Sources

5.16.1. Emergency Generators and Fire Pumps

Equipment Type	Fuel Type	Number per Day	Hours per Day	Hours per Year	Horsepower	Load Factor

5.16.2. Process Boilers

Equipment Type	Fuel Type	Number	Boiler Rating (MMBtu/hr)	Daily Heat Input (MMBtu/day)	Annual Heat Input (MMBtu/yr)

5.17. User Defined

Equipment Type	Fuel Type

5.18. Vegetation

5.18.1. Land Use Change

5.18.1.1. Unmitigated

Vegetation Land Use Type	Vegetation Soil Type	Initial Acres	Final Acres

5.18.1.2. Mitigated

Vegetation Land Use Type	Vegetation Soil Type	Initial Acres	Final Acres

5.18.1. Biomass Cover Type

5.18.1.1. Unmitigated

Biomass Cover Type	Initial Acres	Final Acres

5.18.1.2. Mitigated

Biomass Cover Type	Initial Acres	Final Acres

5.18.2. Sequestration

5.18.2.1. Unmitigated

Tree Type	Number	Electricity Saved (kWh/year)	Natural Gas Saved (btu/year)

5.18.2.2. Mitigated

Tree Type	Number	Electricity Saved (kWh/year)	Natural Gas Saved (btu/year)

6. Climate Risk Detailed Report

6.1. Climate Risk Summary

Cal-Adapt midcentury 2040–2059 average projections for four hazards are reported below for your project location. These are under Representation Concentration Pathway (RCP) 8.5 which assumes GHG emissions will continue to rise strongly through 2050 and then plateau around 2100.

Climate Hazard	Result for Project Location	Unit
Temperature and Extreme Heat	7.10	annual days of extreme heat
Extreme Precipitation	7.50	annual days with precipitation above 20 mm
Sea Level Rise	—	meters of inundation depth
Wildfire	0.00	annual hectares burned

Temperature and Extreme Heat data are for grid cell in which your project are located. The projection is based on the 98th historical percentile of daily maximum/minimum temperatures from observed historical data (32 climate model ensemble from Cal-Adapt, 2040–2059 average under RCP 8.5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.
Extreme Precipitation data are for the grid cell in which your project are located. The threshold of 20 mm is equivalent to about ¾ an inch of rain, which would be light to moderate rainfall if received over a full day or heavy rain if received over a period of 2 to 4 hours. Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.
Sea Level Rise data are for the grid cell in which your project are located. The projections are from Radke et al. (2017), as reported in Cal-Adapt (Radke et al., 2017, CEC-500-2017-008), and consider inundation location and depth for the San Francisco Bay, the Sacramento-San Joaquin River Delta and California coast resulting different increments of sea level rise coupled with extreme storm events. Users may select from four scenarios to view the range in potential inundation depth for the grid cell. The four scenarios are: No rise, 0.5 meter, 1.0 meter, 1.41 meters
Wildfire data are for the grid cell in which your project are located. The projections are from UC Davis, as reported in Cal-Adapt (2040–2059 average under RCP 8.5), and consider historical data of climate, vegetation, population density, and large (> 400 ha) fire history. Users may select from four model simulations to view the range in potential wildfire probabilities for the grid cell. The four simulations make different assumptions about expected rainfall and temperature are: Warmer/drier (HadGEM2-ES), Cooler/wetter (CNRM-CM5), Average conditions (CanESM2), Range of different rainfall and temperature possibilities (MIROC5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.

6.2. Initial Climate Risk Scores

Climate Hazard	Exposure Score	Sensitivity Score	Adaptive Capacity Score	Vulnerability Score
Temperature and Extreme Heat	N/A	N/A	N/A	N/A
Extreme Precipitation	2	0	0	N/A
Sea Level Rise	1	0	0	N/A
Wildfire	1	0	0	N/A
Flooding	N/A	N/A	N/A	N/A
Drought	N/A	N/A	N/A	N/A

Snowpack Reduction	N/A	N/A	N/A	N/A
Air Quality Degradation	0	0	0	N/A

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.
The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.
The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores do not include implementation of climate risk reduction measures.

6.3. Adjusted Climate Risk Scores

Climate Hazard	Exposure Score	Sensitivity Score	Adaptive Capacity Score	Vulnerability Score
Temperature and Extreme Heat	N/A	N/A	N/A	N/A
Extreme Precipitation	2	1	1	3
Sea Level Rise	1	1	1	2
Wildfire	1	1	1	2
Flooding	N/A	N/A	N/A	N/A
Drought	N/A	N/A	N/A	N/A
Snowpack Reduction	N/A	N/A	N/A	N/A
Air Quality Degradation	1	1	1	2

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.
The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.
The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores include implementation of climate risk reduction measures.

6.4. Climate Risk Reduction Measures

7. Health and Equity Details

7.1. CalEnviroScreen 4.0 Scores

The maximum CalEnviroScreen score is 100. A high score (i.e., greater than 50) reflects a higher pollution burden compared to other census tracts in the state.

Indicator	Result for Project Census Tract
Exposure Indicators	—
AQ-Ozone	3.12
AQ-PM	39.2
AQ-DPM	77.5
Drinking Water	4.21
Lead Risk Housing	61.6
Pesticides	0.00
Toxic Releases	61.3
Traffic	31.2
Effect Indicators	—
CleanUp Sites	65.0
Groundwater	97.0
Haz Waste Facilities/Generators	93.0
Impaired Water Bodies	90.1
Solid Waste	9.67
Sensitive Population	—
Asthma	81.1
Cardio-vascular	46.8
Low Birth Weights	44.5
Socioeconomic Factor Indicators	—
Education	26.4
Housing	55.1
Linguistic	6.27
Poverty	35.6
Unemployment	49.9

7.2. Healthy Places Index Scores

The maximum Health Places Index score is 100. A high score (i.e., greater than 50) reflects healthier community conditions compared to other census tracts in the state.

Indicator	Result for Project Census Tract
Economic	—
Above Poverty	59.38662903
Employed	93.82779417
Median HI	46.50327217
Education	—
Bachelor's or higher	88.88746311
High school enrollment	100
Preschool enrollment	74.06646991
Transportation	—
Auto Access	13.06300526
Active commuting	96.25304761
Social	—
2-parent households	16.38650071
Voting	76.22225074
Neighborhood	—
Alcohol availability	4.516874118
Park access	81.35506224
Retail density	82.84357757
Supermarket access	74.27178237
Tree canopy	46.11831131
Housing	—
Homeownership	47.94045939
Housing habitability	50.7121776
Low-inc homeowner severe housing cost burden	19.67150006
Low-inc renter severe housing cost burden	46.67008854
Uncrowded housing	60.05389452
Health Outcomes	—

Insured adults	80.68779674
Arthritis	60.6
Asthma ER Admissions	13.2
High Blood Pressure	62.1
Cancer (excluding skin)	38.7
Asthma	61.7
Coronary Heart Disease	79.3
Chronic Obstructive Pulmonary Disease	88.0
Diagnosed Diabetes	75.2
Life Expectancy at Birth	71.4
Cognitively Disabled	85.7
Physically Disabled	84.3
Heart Attack ER Admissions	59.6
Mental Health Not Good	82.3
Chronic Kidney Disease	64.9
Obesity	68.7
Pedestrian Injuries	19.6
Physical Health Not Good	84.3
Stroke	70.4
Health Risk Behaviors	—
Binge Drinking	38.6
Current Smoker	87.1
No Leisure Time for Physical Activity	83.8
Climate Change Exposures	—
Wildfire Risk	0.0
SLR Inundation Area	0.0
Children	92.8
Elderly	43.9

English Speaking	71.2
Foreign-born	47.0
Outdoor Workers	90.9
Climate Change Adaptive Capacity	—
Impervious Surface Cover	28.0
Traffic Density	29.2
Traffic Access	87.4
Other Indices	—
Hardship	21.5
Other Decision Support	—
2016 Voting	71.1

7.3. Overall Health & Equity Scores

Metric	Result for Project Census Tract
CalEnviroScreen 4.0 Score for Project Location (a)	54.0
Healthy Places Index Score for Project Location (b)	82.0
Project Located in a Designated Disadvantaged Community (Senate Bill 535)	No
Project Located in a Low-Income Community (Assembly Bill 1550)	Yes
Project Located in a Community Air Protection Program Community (Assembly Bill 617)	No

a: The maximum CalEnviroScreen score is 100. A high score (i.e., greater than 50) reflects a higher pollution burden compared to other census tracts in the state.
b: The maximum Health Places Index score is 100. A high score (i.e., greater than 50) reflects healthier community conditions compared to other census tracts in the state.

7.4. Health & Equity Measures

No Health & Equity Measures selected.

7.5. Evaluation Scorecard

Health & Equity Evaluation Scorecard not completed.

7.6. Health & Equity Custom Measures

No Health & Equity Custom Measures created.

8. User Changes to Default Data

Screen	Justification
Characteristics: Utility Information	East Bay Community Energy is the primary electricity provider. Intensity factors adjusted for consistency with Berkeley Housing Element methodology.
Land Use	Based on EIR growth assumption of 17,427 multi-family units, 1,570 condo/townhome units and 47,120 new residents. ADUs included as condo/townhouse for a conservative assumption. Default acreage and building square footage. Landscape area set to zero, outdoor water consumption estimated at rate of 41,075 gal/unit.
Operations: Hearths	No woodstoves or fireplaces
Operations: Energy Use	Assume 90% of development will not include natural gas pursuant to BMC Section 12.80 (Natural gas ban). Totals combined and added to Apartments row.
Operations: Water and Waste Water	EBMUD Wastewater treatment plant 100 percent aerobic. Outdoor water consumption based on v2020 defaults per multifamily unit in lieu of available data in v2022.

Berkeley HE Single Fam 60% Electrified Detailed Report

Table of Contents

1. Basic Project Information

1.1. Basic Project Information

1.2. Land Use Types

1.3. User-Selected Emission Reduction Measures by Emissions Sector

2. Emissions Summary

2.4. Operations Emissions Compared Against Thresholds

2.5. Operations Emissions by Sector, Unmitigated

2.6. Operations Emissions by Sector, Mitigated

4. Operations Emissions Details

4.1. Mobile Emissions by Land Use

4.1.1. Unmitigated

4.1.2. Mitigated

4.2. Energy

4.2.1. Electricity Emissions By Land Use - Unmitigated

4.2.2. Electricity Emissions By Land Use - Mitigated

4.2.3. Natural Gas Emissions By Land Use - Unmitigated

4.2.4. Natural Gas Emissions By Land Use - Mitigated

4.3. Area Emissions by Source

4.3.1. Unmitigated

4.3.2. Mitigated

4.4. Water Emissions by Land Use

4.4.1. Unmitigated

4.4.2. Mitigated

4.5. Waste Emissions by Land Use

4.5.1. Unmitigated

4.5.2. Mitigated

4.6. Refrigerant Emissions by Land Use

4.6.1. Unmitigated

4.6.2. Mitigated

4.7. Offroad Emissions By Equipment Type

4.7.1. Unmitigated

4.7.2. Mitigated

4.8. Stationary Emissions By Equipment Type

4.8.1. Unmitigated

4.8.2. Mitigated

4.9. User Defined Emissions By Equipment Type

4.9.1. Unmitigated

4.9.2. Mitigated

4.10. Soil Carbon Accumulation By Vegetation Type

4.10.1. Soil Carbon Accumulation By Vegetation Type - Unmitigated

4.10.2. Above and Belowground Carbon Accumulation by Land Use Type - Unmitigated

4.10.3. Avoided and Sequestered Emissions by Species - Unmitigated

4.10.4. Soil Carbon Accumulation By Vegetation Type - Mitigated

4.10.5. Above and Belowground Carbon Accumulation by Land Use Type - Mitigated

4.10.6. Avoided and Sequestered Emissions by Species - Mitigated

5. Activity Data

5.9. Operational Mobile Sources

5.9.1. Unmitigated

5.9.2. Mitigated

5.10. Operational Area Sources

5.10.1. Hearths

5.10.1.1. Unmitigated

5.10.1.2. Mitigated

5.10.2. Architectural Coatings

5.10.3. Landscape Equipment

5.10.4. Landscape Equipment - Mitigated

5.11. Operational Energy Consumption

5.11.1. Unmitigated

5.11.2. Mitigated

5.12. Operational Water and Wastewater Consumption

5.12.1. Unmitigated

5.12.2. Mitigated

5.13. Operational Waste Generation

5.13.1. Unmitigated

5.13.2. Mitigated

5.14. Operational Refrigeration and Air Conditioning Equipment

5.14.1. Unmitigated

5.14.2. Mitigated

5.15. Operational Off-Road Equipment

5.15.1. Unmitigated

5.15.2. Mitigated

5.16. Stationary Sources

5.16.1. Emergency Generators and Fire Pumps

5.16.2. Process Boilers

5.17. User Defined

5.18. Vegetation

5.18.1. Land Use Change

5.18.1.1. Unmitigated

5.18.1.2. Mitigated

5.18.1. Biomass Cover Type

5.18.1.1. Unmitigated

5.18.1.2. Mitigated

5.18.2. Sequestration

5.18.2.1. Unmitigated

5.18.2.2. Mitigated

6. Climate Risk Detailed Report

6.1. Climate Risk Summary

6.2. Initial Climate Risk Scores

6.3. Adjusted Climate Risk Scores

6.4. Climate Risk Reduction Measures

7. Health and Equity Details

7.1. CalEnviroScreen 4.0 Scores

7.2. Healthy Places Index Scores

7.3. Overall Health & Equity Scores

7.4. Health & Equity Measures

7.5. Evaluation Scorecard

7.6. Health & Equity Custom Measures

8. User Changes to Default Data

1. Basic Project Information

1.1. Basic Project Information

Data Field	Value
Project Name	Berkeley HE Single Fam 60% Electrified
Operational Year	2031
Lead Agency	—
Land Use Scale	Plan/community
Analysis Level for Defaults	County
Windspeed (m/s)	3.90
Precipitation (days)	3.40
Location	37.87310585963721, -122.29377329662165
County	Alameda
City	Berkeley
Air District	Bay Area AQMD
Air Basin	San Francisco Bay Area
TAZ	1533
EDFZ	1
Electric Utility	User Defined
Gas Utility	User Defined
App Version	2022.1.1.29

1.2. Land Use Types

Land Use Subtype	Size	Unit	Lot Acreage	Building Area (sq ft)	Landscape Area (sq ft)	Special Landscape Area (sq ft)	Population	Description
Single Family Housing	113	Dwelling Unit	36.7	220,350	1,323,553	—	323	—

1.3. User-Selected Emission Reduction Measures by Emissions Sector

Sector	#	Measure Title
Water	W-7	Adopt a Water Conservation Strategy

2. Emissions Summary

2.4. Operations Emissions Compared Against Thresholds

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Un/Mit.	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—
Unmit.	49.3	5,237	5,286	4.36	0.22	10.8	5,471
Mit.	47.5	5,235	5,283	4.35	0.21	10.8	5,466
% Reduced	3%	< 0.5%	< 0.5%	< 0.5%	2%	—	< 0.5%
Daily, Winter (Max)	—	—	—	—	—	—	—
Unmit.	49.3	4,963	5,012	4.39	0.24	1.82	5,194
Mit.	47.5	4,961	5,009	4.38	0.23	1.82	5,189
% Reduced	3%	< 0.5%	< 0.5%	< 0.5%	2%	—	< 0.5%
Average Daily (Max)	—	—	—	—	—	—	—
Unmit.	49.3	4,898	4,947	4.37	0.22	5.47	5,128
Mit.	47.5	4,896	4,943	4.36	0.22	5.47	5,123
% Reduced	3%	< 0.5%	< 0.5%	< 0.5%	2%	—	< 0.5%
Annual (Max)	—	—	—	—	—	—	—
Unmit.	8.16	811	819	0.72	0.04	0.91	849
Mit.	7.87	811	818	0.72	0.04	0.91	848
% Reduced	3%	< 0.5%	< 0.5%	< 0.5%	2%	—	< 0.5%

2.5. Operations Emissions by Sector, Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Sector	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—
Mobile	—	4,507	4,507	0.20	0.20	9.21	4,580
Area	0.00	17.1	17.1	< 0.005	< 0.005	—	17.2
Energy	—	670	670	0.06	< 0.005	—	671
Water	8.58	43.2	51.7	0.03	0.02	—	58.0
Waste	40.7	0.00	40.7	4.07	0.00	—	142
Refrig.	—	—	—	—	—	1.58	1.58
Total	49.3	5,237	5,286	4.36	0.22	10.8	5,471
Daily, Winter (Max)	—	—	—	—	—	—	—
Mobile	—	4,250	4,250	0.23	0.22	0.24	4,321
Area	0.00	0.00	0.00	0.00	0.00	—	0.00
Energy	—	670	670	0.06	< 0.005	—	671
Water	8.58	43.2	51.7	0.03	0.02	—	58.0
Waste	40.7	0.00	40.7	4.07	0.00	—	142
Refrig.	—	—	—	—	—	1.58	1.58
Total	49.3	4,963	5,012	4.39	0.24	1.82	5,194
Average Daily	—	—	—	—	—	—	—
Mobile	—	4,176	4,176	0.21	0.20	3.89	4,246
Area	0.00	8.45	8.45	< 0.005	< 0.005	—	8.48
Energy	—	670	670	0.06	< 0.005	—	671
Water	8.58	43.2	51.7	0.03	0.02	—	58.0
Waste	40.7	0.00	40.7	4.07	0.00	—	142
Refrig.	—	—	—	—	—	1.58	1.58
Total	49.3	4,898	4,947	4.37	0.22	5.47	5,128
Annual	—	—	—	—	—	—	—
Mobile	—	691	691	0.04	0.03	0.64	703

Area	0.00	1.40	1.40	< 0.005	< 0.005	—	1.40
Energy	—	111	111	0.01	< 0.005	—	111
Water	1.42	7.14	8.56	< 0.005	< 0.005	—	9.61
Waste	6.74	0.00	6.74	0.67	0.00	—	23.6
Refrig.	—	—	—	—	—	0.26	0.26
Total	8.16	811	819	0.72	0.04	0.91	849

2.6. Operations Emissions by Sector, Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Sector	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—
Mobile	—	4,507	4,507	0.20	0.20	9.21	4,580
Area	0.00	17.1	17.1	< 0.005	< 0.005	—	17.2
Energy	—	670	670	0.06	< 0.005	—	671
Water	6.86	41.2	48.1	0.02	0.01	—	53.1
Waste	40.7	0.00	40.7	4.07	0.00	—	142
Refrig.	—	—	—	—	—	1.58	1.58
Total	47.5	5,235	5,283	4.35	0.21	10.8	5,466
Daily, Winter (Max)	—	—	—	—	—	—	—
Mobile	—	4,250	4,250	0.23	0.22	0.24	4,321
Area	0.00	0.00	0.00	0.00	0.00	—	0.00
Energy	—	670	670	0.06	< 0.005	—	671
Water	6.86	41.2	48.1	0.02	0.01	—	53.1
Waste	40.7	0.00	40.7	4.07	0.00	—	142
Refrig.	—	—	—	—	—	1.58	1.58
Total	47.5	4,961	5,009	4.38	0.23	1.82	5,189
Average Daily	—	—	—	—	—	—	—
Mobile	—	4,176	4,176	0.21	0.20	3.89	4,246

Area	0.00	8.45	8.45	< 0.005	< 0.005	—	8.48
Energy	—	670	670	0.06	< 0.005	—	671
Water	6.86	41.2	48.1	0.02	0.01	—	53.1
Waste	40.7	0.00	40.7	4.07	0.00	—	142
Refrig.	—	—	—	—	—	1.58	1.58
Total	47.5	4,896	4,943	4.36	0.22	5.47	5,123
Annual	—	—	—	—	—	—	—
Mobile	—	691	691	0.04	0.03	0.64	703
Area	0.00	1.40	1.40	< 0.005	< 0.005	—	1.40
Energy	—	111	111	0.01	< 0.005	—	111
Water	1.14	6.83	7.96	< 0.005	< 0.005	—	8.80
Waste	6.74	0.00	6.74	0.67	0.00	—	23.6
Refrig.	—	—	—	—	—	0.26	0.26
Total	7.87	811	818	0.72	0.04	0.91	848

4. Operations Emissions Details

4.1. Mobile Emissions by Land Use

4.1.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—
Single Family Housing	—	4,507	4,507	0.20	0.20	9.21	4,580
Total	—	4,507	4,507	0.20	0.20	9.21	4,580
Daily, Winter (Max)	—	—	—	—	—	—	—
Single Family Housing	—	4,250	4,250	0.23	0.22	0.24	4,321
Total	—	4,250	4,250	0.23	0.22	0.24	4,321

Annual	—	—	—	—	—	—	—
Single Family Housing	—	691	691	0.04	0.03	0.64	703
Total	—	691	691	0.04	0.03	0.64	703

4.1.2. Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—
Single Family Housing	—	4,507	4,507	0.20	0.20	9.21	4,580
Total	—	4,507	4,507	0.20	0.20	9.21	4,580
Daily, Winter (Max)	—	—	—	—	—	—	—
Single Family Housing	—	4,250	4,250	0.23	0.22	0.24	4,321
Total	—	4,250	4,250	0.23	0.22	0.24	4,321
Annual	—	—	—	—	—	—	—
Single Family Housing	—	691	691	0.04	0.03	0.64	703
Total	—	691	691	0.04	0.03	0.64	703

4.2. Energy

4.2.1. Electricity Emissions By Land Use - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—
Single Family Housing	—	0.00	0.00	0.00	0.00	—	0.00
Total	—	0.00	0.00	0.00	0.00	—	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—
Single Family Housing	—	0.00	0.00	0.00	0.00	—	0.00
Total	—	0.00	0.00	0.00	0.00	—	0.00

Annual	—	—	—	—	—	—	—
Single Family Housing	—	0.00	0.00	0.00	0.00	—	0.00
Total	—	0.00	0.00	0.00	0.00	—	0.00

4.2.2. Electricity Emissions By Land Use - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—
Single Family Housing	—	0.00	0.00	0.00	0.00	—	0.00
Total	—	0.00	0.00	0.00	0.00	—	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—
Single Family Housing	—	0.00	0.00	0.00	0.00	—	0.00
Total	—	0.00	0.00	0.00	0.00	—	0.00
Annual	—	—	—	—	—	—	—
Single Family Housing	—	0.00	0.00	0.00	0.00	—	0.00
Total	—	0.00	0.00	0.00	0.00	—	0.00

4.2.3. Natural Gas Emissions By Land Use - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—
Single Family Housing	—	670	670	0.06	< 0.005	—	671
Total	—	670	670	0.06	< 0.005	—	671
Daily, Winter (Max)	—	—	—	—	—	—	—
Single Family Housing	—	670	670	0.06	< 0.005	—	671
Total	—	670	670	0.06	< 0.005	—	671
Annual	—	—	—	—	—	—	—
Single Family Housing	—	111	111	0.01	< 0.005	—	111

Total	—	111	111	0.01	< 0.005	—	111

4.2.4. Natural Gas Emissions By Land Use - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—
Single Family Housing	—	670	670	0.06	< 0.005	—	671
Total	—	670	670	0.06	< 0.005	—	671
Daily, Winter (Max)	—	—	—	—	—	—	—
Single Family Housing	—	670	670	0.06	< 0.005	—	671
Total	—	670	670	0.06	< 0.005	—	671
Annual	—	—	—	—	—	—	—
Single Family Housing	—	111	111	0.01	< 0.005	—	111
Total	—	111	111	0.01	< 0.005	—	111

4.3. Area Emissions by Source

4.3.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Source	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—
Hearths	0.00	0.00	0.00	0.00	0.00	—	0.00
Consumer Products	—	—	—	—	—	—	—
Architectural Coatings	—	—	—	—	—	—	—
Landscape Equipment	—	17.1	17.1	< 0.005	< 0.005	—	17.2
Total	0.00	17.1	17.1	< 0.005	< 0.005	—	17.2
Daily, Winter (Max)	—	—	—	—	—	—	—
Hearths	0.00	0.00	0.00	0.00	0.00	—	0.00

Consumer Products	—	—	—	—	—	—	—
Architectural Coatings	—	—	—	—	—	—	—
Total	0.00	0.00	0.00	0.00	0.00	—	0.00
Annual	—	—	—	—	—	—	—
Hearths	0.00	0.00	0.00	0.00	0.00	—	0.00
Consumer Products	—	—	—	—	—	—	—
Architectural Coatings	—	—	—	—	—	—	—
Landscape Equipment	—	1.40	1.40	< 0.005	< 0.005	—	1.40
Total	0.00	1.40	1.40	< 0.005	< 0.005	—	1.40

4.3.2. Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Source	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—
Hearths	0.00	0.00	0.00	0.00	0.00	—	0.00
Consumer Products	—	—	—	—	—	—	—
Architectural Coatings	—	—	—	—	—	—	—
Landscape Equipment	—	17.1	17.1	< 0.005	< 0.005	—	17.2
Total	0.00	17.1	17.1	< 0.005	< 0.005	—	17.2
Daily, Winter (Max)	—	—	—	—	—	—	—
Hearths	0.00	0.00	0.00	0.00	0.00	—	0.00
Consumer Products	—	—	—	—	—	—	—
Architectural Coatings	—	—	—	—	—	—	—
Total	0.00	0.00	0.00	0.00	0.00	—	0.00
Annual	—	—	—	—	—	—	—
Hearths	0.00	0.00	0.00	0.00	0.00	—	0.00
Consumer Products	—	—	—	—	—	—	—
Architectural Coatings	—	—	—	—	—	—	—

Landscape Equipment	—	1.40	1.40	< 0.005	< 0.005	—	1.40
Total	0.00	1.40	1.40	< 0.005	< 0.005	—	1.40

4.4. Water Emissions by Land Use

4.4.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—
Single Family Housing	8.58	43.2	51.7	0.03	0.02	—	58.0
Total	8.58	43.2	51.7	0.03	0.02	—	58.0
Daily, Winter (Max)	—	—	—	—	—	—	—
Single Family Housing	8.58	43.2	51.7	0.03	0.02	—	58.0
Total	8.58	43.2	51.7	0.03	0.02	—	58.0
Annual	—	—	—	—	—	—	—
Single Family Housing	1.42	7.14	8.56	< 0.005	< 0.005	—	9.61
Total	1.42	7.14	8.56	< 0.005	< 0.005	—	9.61

4.4.2. Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—
Single Family Housing	6.86	41.2	48.1	0.02	0.01	—	53.1
Total	6.86	41.2	48.1	0.02	0.01	—	53.1
Daily, Winter (Max)	—	—	—	—	—	—	—
Single Family Housing	6.86	41.2	48.1	0.02	0.01	—	53.1
Total	6.86	41.2	48.1	0.02	0.01	—	53.1
Annual	—	—	—	—	—	—	—

Single Family Housing	1.14	6.83	7.96	< 0.005	< 0.005	—	8.80
Total	1.14	6.83	7.96	< 0.005	< 0.005	—	8.80

4.5. Waste Emissions by Land Use

4.5.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—
Single Family Housing	40.7	0.00	40.7	4.07	0.00	—	142
Total	40.7	0.00	40.7	4.07	0.00	—	142
Daily, Winter (Max)	—	—	—	—	—	—	—
Single Family Housing	40.7	0.00	40.7	4.07	0.00	—	142
Total	40.7	0.00	40.7	4.07	0.00	—	142
Annual	—	—	—	—	—	—	—
Single Family Housing	6.74	0.00	6.74	0.67	0.00	—	23.6
Total	6.74	0.00	6.74	0.67	0.00	—	23.6

4.5.2. Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—
Single Family Housing	40.7	0.00	40.7	4.07	0.00	—	142
Total	40.7	0.00	40.7	4.07	0.00	—	142
Daily, Winter (Max)	—	—	—	—	—	—	—
Single Family Housing	40.7	0.00	40.7	4.07	0.00	—	142
Total	40.7	0.00	40.7	4.07	0.00	—	142
Annual	—	—	—	—	—	—	—

Single Family Housing	6.74	0.00	6.74	0.67	0.00	—	23.6
Total	6.74	0.00	6.74	0.67	0.00	—	23.6

4.6. Refrigerant Emissions by Land Use

4.6.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	1.58	1.58
Total	—	—	—	—	—	1.58	1.58
Daily, Winter (Max)	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	1.58	1.58
Total	—	—	—	—	—	1.58	1.58
Annual	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	0.26	0.26
Total	—	—	—	—	—	0.26	0.26

4.6.2. Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	1.58	1.58
Total	—	—	—	—	—	1.58	1.58
Daily, Winter (Max)	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	1.58	1.58
Total	—	—	—	—	—	1.58	1.58
Annual	—	—	—	—	—	—	—

Single Family Housing	—	—	—	—	—	0.26	0.26
Total	—	—	—	—	—	0.26	0.26

4.7. Offroad Emissions By Equipment Type

4.7.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—

4.7.2. Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—

4.8. Stationary Emissions By Equipment Type

4.8.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—

4.8.2. Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—

4.9. User Defined Emissions By Equipment Type

4.9.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—

Annual	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—

4.9.2. Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—

4.10. Soil Carbon Accumulation By Vegetation Type

4.10.1. Soil Carbon Accumulation By Vegetation Type - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Vegetation	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—

4.10.2. Above and Belowground Carbon Accumulation by Land Use Type - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e

Daily, Summer (Max)	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—

4.10.3. Avoided and Sequestered Emissions by Species - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Species	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—

Subtotal	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—

4.10.4. Soil Carbon Accumulation By Vegetation Type - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Vegetation	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—

4.10.5. Above and Belowground Carbon Accumulation by Land Use Type - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—

4.10.6. Avoided and Sequestered Emissions by Species - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Species	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—

5. Activity Data

5.9. Operational Mobile Sources

5.9.1. Unmitigated

Land Use Type	Trips/Weekday	Trips/Saturday	Trips/Sunday	Trips/Year	VMT/Weekday	VMT/Saturday	VMT/Sunday	VMT/Year
Single Family Housing	1,067	1,078	966	384,698	6,240	6,306	5,652	2,250,495

5.9.2. Mitigated

Land Use Type	Trips/Weekday	Trips/Saturday	Trips/Sunday	Trips/Year	VMT/Weekday	VMT/Saturday	VMT/Sunday	VMT/Year
Single Family Housing	1,067	1,078	966	384,698	6,240	6,306	5,652	2,250,495

5.10. Operational Area Sources

5.10.1. Hearths

5.10.1.1. Unmitigated

Hearth Type	Unmitigated (number)
Single Family Housing	—
Wood Fireplaces	0
Gas Fireplaces	0
Propane Fireplaces	0
Electric Fireplaces	0
No Fireplaces	0
Conventional Wood Stoves	0
Catalytic Wood Stoves	0
Non-Catalytic Wood Stoves	0

Pellet Wood Stoves	0

5.10.1.2. Mitigated

Hearth Type	Unmitigated (number)
Single Family Housing	—
Wood Fireplaces	0
Gas Fireplaces	0
Propane Fireplaces	0
Electric Fireplaces	0
No Fireplaces	0
Conventional Wood Stoves	0
Catalytic Wood Stoves	0
Non-Catalytic Wood Stoves	0
Pellet Wood Stoves	0

5.10.2. Architectural Coatings

Residential Interior Area Coated (sq ft)	Residential Exterior Area Coated (sq ft)	Non-Residential Interior Area Coated (sq ft)	Non-Residential Exterior Area Coated (sq ft)	Parking Area Coated (sq ft)
446208.75	148,736	0.00	0.00	—

5.10.3. Landscape Equipment

Season	Unit	Value
Snow Days	day/yr	0.00
Summer Days	day/yr	180

5.10.4. Landscape Equipment - Mitigated

Season	Unit	Value

Snow Days	day/yr	0.00
Summer Days	day/yr	180

5.11. Operational Energy Consumption

5.11.1. Unmitigated

Electricity (kWh/yr) and CO2 and CH4 and N2O and Natural Gas (kBTU/yr)

Land Use	Electricity (kWh/yr)	CO2	CH4	N2O	Natural Gas (kBTU/yr)
Single Family Housing	0.00	135	0.0000	0.0000	2,089,231

5.11.2. Mitigated

Electricity (kWh/yr) and CO2 and CH4 and N2O and Natural Gas (kBTU/yr)

Land Use	Electricity (kWh/yr)	CO2	CH4	N2O	Natural Gas (kBTU/yr)
Single Family Housing	0.00	135	0.0000	0.0000	2,089,231

5.12. Operational Water and Wastewater Consumption

5.12.1. Unmitigated

Land Use	Indoor Water (gal/year)	Outdoor Water (gal/year)
Single Family Housing	4,012,726	18,378,911

5.12.2. Mitigated

Land Use	Indoor Water (gal/year)	Outdoor Water (gal/year)
Single Family Housing	3,210,181	18,378,911

5.13. Operational Waste Generation

5.13.1. Unmitigated

Land Use	Waste (ton/year)	Cogeneration (kWh/year)
Single Family Housing	75.5	—

5.13.2. Mitigated

Land Use	Waste (ton/year)	Cogeneration (kWh/year)
Single Family Housing	75.5	—

5.14. Operational Refrigeration and Air Conditioning Equipment

5.14.1. Unmitigated

Land Use Type	Equipment Type	Refrigerant	GWP	Quantity (kg)	Operations Leak Rate	Service Leak Rate	Times Serviced
Single Family Housing	Average room A/C & Other residential A/C and heat pumps	R-410A	2,088	< 0.005	2.50	2.50	10.0
Single Family Housing	Household refrigerators and/or freezers	R-134a	1,430	0.12	0.60	0.00	1.00

5.14.2. Mitigated

Land Use Type	Equipment Type	Refrigerant	GWP	Quantity (kg)	Operations Leak Rate	Service Leak Rate	Times Serviced
Single Family Housing	Average room A/C & Other residential A/C and heat pumps	R-410A	2,088	< 0.005	2.50	2.50	10.0
Single Family Housing	Household refrigerators and/or freezers	R-134a	1,430	0.12	0.60	0.00	1.00

5.15. Operational Off-Road Equipment

5.15.1. Unmitigated

Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor

5.15.2. Mitigated

Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor

5.16. Stationary Sources

5.16.1. Emergency Generators and Fire Pumps

Equipment Type	Fuel Type	Number per Day	Hours per Day	Hours per Year	Horsepower	Load Factor

5.16.2. Process Boilers

Equipment Type	Fuel Type	Number	Boiler Rating (MMBtu/hr)	Daily Heat Input (MMBtu/day)	Annual Heat Input (MMBtu/yr)

5.17. User Defined

Equipment Type	Fuel Type

5.18. Vegetation

5.18.1. Land Use Change

5.18.1.1. Unmitigated

Vegetation Land Use Type	Vegetation Soil Type	Initial Acres	Final Acres

5.18.1.2. Mitigated

Vegetation Land Use Type	Vegetation Soil Type	Initial Acres	Final Acres

5.18.1. Biomass Cover Type

5.18.1.1. Unmitigated

Biomass Cover Type	Initial Acres	Final Acres

5.18.1.2. Mitigated

Biomass Cover Type	Initial Acres	Final Acres

5.18.2. Sequestration

5.18.2.1. Unmitigated

Tree Type	Number	Electricity Saved (kWh/year)	Natural Gas Saved (btu/year)

5.18.2.2. Mitigated

Tree Type	Number	Electricity Saved (kWh/year)	Natural Gas Saved (btu/year)

6. Climate Risk Detailed Report

6.1. Climate Risk Summary

Cal-Adapt midcentury 2040–2059 average projections for four hazards are reported below for your project location. These are under Representation Concentration Pathway (RCP) 8.5 which assumes GHG emissions will continue to rise strongly through 2050 and then plateau around 2100.

Climate Hazard	Result for Project Location	Unit
Temperature and Extreme Heat	7.10	annual days of extreme heat
Extreme Precipitation	7.50	annual days with precipitation above 20 mm
Sea Level Rise	—	meters of inundation depth
Wildfire	0.00	annual hectares burned

Temperature and Extreme Heat data are for grid cell in which your project are located. The projection is based on the 98th historical percentile of daily maximum/minimum temperatures from observed historical data (32 climate model ensemble from Cal-Adapt, 2040–2059 average under RCP 8.5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.
Extreme Precipitation data are for the grid cell in which your project are located. The threshold of 20 mm is equivalent to about ¾ an inch of rain, which would be light to moderate rainfall if received over a full day or heavy rain if received over a period of 2 to 4 hours. Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.
Sea Level Rise data are for the grid cell in which your project are located. The projections are from Radke et al. (2017), as reported in Cal-Adapt (Radke et al., 2017, CEC-500-2017-008), and consider inundation location and depth for the San Francisco Bay, the Sacramento-San Joaquin River Delta and California coast resulting different increments of sea level rise coupled with extreme storm events. Users may select from four scenarios to view the range in potential inundation depth for the grid cell. The four scenarios are: No rise, 0.5 meter, 1.0 meter, 1.41 meters
Wildfire data are for the grid cell in which your project are located. The projections are from UC Davis, as reported in Cal-Adapt (2040–2059 average under RCP 8.5), and consider historical data of climate, vegetation, population density, and large (> 400 ha) fire history. Users may select from four model simulations to view the range in potential wildfire probabilities for the grid cell. The four simulations make different assumptions about expected rainfall and temperature are: Warmer/drier (HadGEM2-ES), Cooler/wetter (CNRM-CM5), Average conditions (CanESM2), Range of different rainfall and temperature possibilities (MIROC5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.

6.2. Initial Climate Risk Scores

Climate Hazard	Exposure Score	Sensitivity Score	Adaptive Capacity Score	Vulnerability Score
Temperature and Extreme Heat	N/A	N/A	N/A	N/A
Extreme Precipitation	2	0	0	N/A
Sea Level Rise	1	0	0	N/A
Wildfire	1	0	0	N/A
Flooding	N/A	N/A	N/A	N/A
Drought	N/A	N/A	N/A	N/A
Snowpack Reduction	N/A	N/A	N/A	N/A
Air Quality Degradation	0	0	0	N/A

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.
The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.
The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores do not include implementation of climate risk reduction measures.

6.3. Adjusted Climate Risk Scores

Climate Hazard	Exposure Score	Sensitivity Score	Adaptive Capacity Score	Vulnerability Score
Temperature and Extreme Heat	N/A	N/A	N/A	N/A
Extreme Precipitation	2	1	1	3
Sea Level Rise	1	1	1	2

Wildfire	1	1	1	2
Flooding	N/A	N/A	N/A	N/A
Drought	N/A	N/A	N/A	N/A
Snowpack Reduction	N/A	N/A	N/A	N/A
Air Quality Degradation	1	1	1	2

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.
The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.
The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores include implementation of climate risk reduction measures.

6.4. Climate Risk Reduction Measures

7. Health and Equity Details

7.1. CalEnviroScreen 4.0 Scores

The maximum CalEnviroScreen score is 100. A high score (i.e., greater than 50) reflects a higher pollution burden compared to other census tracts in the state.

Indicator	Result for Project Census Tract
Exposure Indicators	—
AQ-Ozone	3.12
AQ-PM	39.2
AQ-DPM	77.5
Drinking Water	4.21
Lead Risk Housing	61.6
Pesticides	0.00
Toxic Releases	61.3
Traffic	31.2
Effect Indicators	—
CleanUp Sites	65.0
Groundwater	97.0

Haz Waste Facilities/Generators	93.0
Impaired Water Bodies	90.1
Solid Waste	9.67
Sensitive Population	—
Asthma	81.1
Cardio-vascular	46.8
Low Birth Weights	44.5
Socioeconomic Factor Indicators	—
Education	26.4
Housing	55.1
Linguistic	6.27
Poverty	35.6
Unemployment	49.9

7.2. Healthy Places Index Scores

The maximum Health Places Index score is 100. A high score (i.e., greater than 50) reflects healthier community conditions compared to other census tracts in the state.

Indicator	Result for Project Census Tract
Economic	—
Above Poverty	59.38662903
Employed	93.82779417
Median HI	46.50327217
Education	—
Bachelor's or higher	88.88746311
High school enrollment	100
Preschool enrollment	74.06646991
Transportation	—
Auto Access	13.06300526
Active commuting	96.25304761

Social	—
2-parent households	16.38650071
Voting	76.22225074
Neighborhood	—
Alcohol availability	4.516874118
Park access	81.35506224
Retail density	82.84357757
Supermarket access	74.27178237
Tree canopy	46.11831131
Housing	—
Homeownership	47.94045939
Housing habitability	50.7121776
Low-inc homeowner severe housing cost burden	19.67150006
Low-inc renter severe housing cost burden	46.67008854
Uncrowded housing	60.05389452
Health Outcomes	—
Insured adults	80.68779674
Arthritis	60.6
Asthma ER Admissions	13.2
High Blood Pressure	62.1
Cancer (excluding skin)	38.7
Asthma	61.7
Coronary Heart Disease	79.3
Chronic Obstructive Pulmonary Disease	88.0
Diagnosed Diabetes	75.2
Life Expectancy at Birth	71.4
Cognitively Disabled	85.7
Physically Disabled	84.3

Heart Attack ER Admissions	59.6
Mental Health Not Good	82.3
Chronic Kidney Disease	64.9
Obesity	68.7
Pedestrian Injuries	19.6
Physical Health Not Good	84.3
Stroke	70.4
Health Risk Behaviors	—
Binge Drinking	38.6
Current Smoker	87.1
No Leisure Time for Physical Activity	83.8
Climate Change Exposures	—
Wildfire Risk	0.0
SLR Inundation Area	0.0
Children	92.8
Elderly	43.9
English Speaking	71.2
Foreign-born	47.0
Outdoor Workers	90.9
Climate Change Adaptive Capacity	—
Impervious Surface Cover	28.0
Traffic Density	29.2
Traffic Access	87.4
Other Indices	—
Hardship	21.5
Other Decision Support	—
2016 Voting	71.1

7.3. Overall Health & Equity Scores

Metric	Result for Project Census Tract
CalEnviroScreen 4.0 Score for Project Location (a)	54.0
Healthy Places Index Score for Project Location (b)	82.0
Project Located in a Designated Disadvantaged Community (Senate Bill 535)	No
Project Located in a Low-Income Community (Assembly Bill 1550)	Yes
Project Located in a Community Air Protection Program Community (Assembly Bill 617)	No

a: The maximum CalEnviroScreen score is 100. A high score (i.e., greater than 50) reflects a higher pollution burden compared to other census tracts in the state.
b: The maximum Health Places Index score is 100. A high score (i.e., greater than 50) reflects healthier community conditions compared to other census tracts in the state.

7.4. Health & Equity Measures

No Health & Equity Measures selected.

7.5. Evaluation Scorecard

Health & Equity Evaluation Scorecard not completed.

7.6. Health & Equity Custom Measures

No Health & Equity Custom Measures created.

8. User Changes to Default Data

Screen	Justification
Characteristics: Utility Information	East Bay Community Energy is the primary electricity provider. Intensity factors adjusted for consistency with Berkeley Housing Element methodology.
Land Use	Based on EIR growth assumption of 113 single-family units and 323 new residents. Default acreage, building square footage, and landscape area.
Operations: Hearths	No woodstoves or fireplaces
Operations: Energy Use	Assume 60% of development will not include natural gas pursuant to BMC Section 12.80 (Natural gas ban). Assumes 100% offset of electricity consumption by onsite PV solar.
Operations: Water and Waste Water	EBMUD Wastewater treatment plant 100 percent aerobic

Berkeley HE Multi Fam 60% Electrified Detailed Report

Table of Contents

1. Basic Project Information

1.1. Basic Project Information

1.2. Land Use Types

1.3. User-Selected Emission Reduction Measures by Emissions Sector

2. Emissions Summary

2.4. Operations Emissions Compared Against Thresholds

2.5. Operations Emissions by Sector, Unmitigated

2.6. Operations Emissions by Sector, Mitigated

4. Operations Emissions Details

4.1. Mobile Emissions by Land Use

4.1.1. Unmitigated

4.1.2. Mitigated

4.2. Energy

4.2.1. Electricity Emissions By Land Use - Unmitigated

4.2.2. Electricity Emissions By Land Use - Mitigated

4.2.3. Natural Gas Emissions By Land Use - Unmitigated

4.2.4. Natural Gas Emissions By Land Use - Mitigated

4.3. Area Emissions by Source

4.3.1. Unmitigated

4.3.2. Mitigated

4.4. Water Emissions by Land Use

4.4.1. Unmitigated

4.4.2. Mitigated

4.5. Waste Emissions by Land Use

4.5.1. Unmitigated

4.5.2. Mitigated

4.6. Refrigerant Emissions by Land Use

4.6.1. Unmitigated

4.6.2. Mitigated

4.7. Offroad Emissions By Equipment Type

4.7.1. Unmitigated

4.7.2. Mitigated

4.8. Stationary Emissions By Equipment Type

4.8.1. Unmitigated

4.8.2. Mitigated

4.9. User Defined Emissions By Equipment Type

4.9.1. Unmitigated

4.9.2. Mitigated

4.10. Soil Carbon Accumulation By Vegetation Type

4.10.1. Soil Carbon Accumulation By Vegetation Type - Unmitigated

4.10.2. Above and Belowground Carbon Accumulation by Land Use Type - Unmitigated

4.10.3. Avoided and Sequestered Emissions by Species - Unmitigated

4.10.4. Soil Carbon Accumulation By Vegetation Type - Mitigated

4.10.5. Above and Belowground Carbon Accumulation by Land Use Type - Mitigated

4.10.6. Avoided and Sequestered Emissions by Species - Mitigated

5. Activity Data

5.9. Operational Mobile Sources

5.9.1. Unmitigated

5.9.2. Mitigated

5.10. Operational Area Sources

5.10.1. Hearths

5.10.1.1. Unmitigated

5.10.1.2. Mitigated

5.10.2. Architectural Coatings

5.10.3. Landscape Equipment

5.10.4. Landscape Equipment - Mitigated

5.11. Operational Energy Consumption

5.11.1. Unmitigated

5.11.2. Mitigated

5.12. Operational Water and Wastewater Consumption

5.12.1. Unmitigated

5.12.2. Mitigated

5.13. Operational Waste Generation

5.13.1. Unmitigated

5.13.2. Mitigated

5.14. Operational Refrigeration and Air Conditioning Equipment

5.14.1. Unmitigated

5.14.2. Mitigated

5.15. Operational Off-Road Equipment

5.15.1. Unmitigated

5.15.2. Mitigated

5.16. Stationary Sources

5.16.1. Emergency Generators and Fire Pumps

5.16.2. Process Boilers

5.17. User Defined

5.18. Vegetation

5.18.1. Land Use Change

5.18.1.1. Unmitigated

5.18.1.2. Mitigated

5.18.1. Biomass Cover Type

5.18.1.1. Unmitigated

5.18.1.2. Mitigated

5.18.2. Sequestration

5.18.2.1. Unmitigated

5.18.2.2. Mitigated

6. Climate Risk Detailed Report

6.1. Climate Risk Summary

6.2. Initial Climate Risk Scores

6.3. Adjusted Climate Risk Scores

6.4. Climate Risk Reduction Measures

7. Health and Equity Details

7.1. CalEnviroScreen 4.0 Scores

7.2. Healthy Places Index Scores

7.3. Overall Health & Equity Scores

7.4. Health & Equity Measures

7.5. Evaluation Scorecard

7.6. Health & Equity Custom Measures

8. User Changes to Default Data

1. Basic Project Information

1.1. Basic Project Information

Data Field	Value
Project Name	Berkeley HE Multi Fam 60% Electrified
Operational Year	2031
Lead Agency	—
Land Use Scale	Plan/community
Analysis Level for Defaults	County
Windspeed (m/s)	3.90
Precipitation (days)	3.40
Location	37.87310585963721, -122.29377329662165
County	Alameda
City	Berkeley
Air District	Bay Area AQMD
Air Basin	San Francisco Bay Area
TAZ	1533
EDFZ	1
Electric Utility	User Defined
Gas Utility	User Defined
App Version	2022.1.1.29

1.2. Land Use Types

Land Use Subtype	Size	Unit	Lot Acreage	Building Area (sq ft)	Landscape Area (sq ft)	Special Landscape Area (sq ft)	Population	Description
Apartments Mid Rise	17,427	Dwelling Unit	459	16,729,920	0.00	—	42,630	—
Condo/Townhouse	1,570	Dwelling Unit	98.1	1,664,200	0.00	—	4,490	—

1.3. User-Selected Emission Reduction Measures by Emissions Sector

Sector	#	Measure Title
Water	W-7	Adopt a Water Conservation Strategy

2. Emissions Summary

2.4. Operations Emissions Compared Against Thresholds

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Un/Mit.	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—
Unmit.	6,787	531,593	538,380	689	21.5	1,064	563,072
Mit.	6,761	531,564	538,326	688	21.5	1,064	562,999
% Reduced	< 0.5%	< 0.5%	< 0.5%	< 0.5%	< 0.5%	—	< 0.5%
Daily, Winter (Max)	—	—	—	—	—	—	—
Unmit.	6,787	503,110	509,897	692	23.5	156	534,338
Mit.	6,761	503,082	509,843	692	23.4	156	534,265
% Reduced	< 0.5%	< 0.5%	< 0.5%	< 0.5%	< 0.5%	—	< 0.5%
Average Daily (Max)	—	—	—	—	—	—	—
Unmit.	6,787	482,020	488,807	689	21.5	512	512,941
Mit.	6,761	481,992	488,753	689	21.4	512	512,868
% Reduced	< 0.5%	< 0.5%	< 0.5%	< 0.5%	< 0.5%	—	< 0.5%
Annual (Max)	—	—	—	—	—	—	—
Unmit.	1,124	79,804	80,928	114	3.55	84.7	84,923
Mit.	1,119	79,799	80,919	114	3.54	84.7	84,911
% Reduced	< 0.5%	< 0.5%	< 0.5%	< 0.5%	< 0.5%	—	< 0.5%

2.5. Operations Emissions by Sector, Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Sector	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—
Mobile	—	464,159	464,159	20.2	21.2	932	471,906
Area	0.00	2,882	2,882	0.12	0.02	—	2,892
Energy	—	62,985	62,985	2.26	0.05	—	63,056
Water	128	1,567	1,695	0.44	0.28	—	1,789
Waste	6,659	0.00	6,659	666	0.00	—	23,298
Refrig.	—	—	—	—	—	132	132
Total	6,787	531,593	538,380	689	21.5	1,064	563,072
Daily, Winter (Max)	—	—	—	—	—	—	—
Mobile	—	438,559	438,559	23.4	23.1	24.2	446,064
Area	0.00	0.00	0.00	0.00	0.00	—	0.00
Energy	—	62,985	62,985	2.26	0.05	—	63,056
Water	128	1,567	1,695	0.44	0.28	—	1,789
Waste	6,659	0.00	6,659	666	0.00	—	23,298
Refrig.	—	—	—	—	—	132	132
Total	6,787	503,110	509,897	692	23.5	156	534,338
Average Daily	—	—	—	—	—	—	—
Mobile	—	416,047	416,047	20.8	21.1	380	423,241
Area	0.00	1,421	1,421	0.06	0.01	—	1,426
Energy	—	62,985	62,985	2.26	0.05	—	63,056
Water	128	1,567	1,695	0.44	0.28	—	1,789
Waste	6,659	0.00	6,659	666	0.00	—	23,298
Refrig.	—	—	—	—	—	132	132
Total	6,787	482,020	488,807	689	21.5	512	512,941
Annual	—	—	—	—	—	—	—
Mobile	—	68,881	68,881	3.45	3.50	62.9	70,072

Area	0.00	235	235	0.01	< 0.005	—	236
Energy	—	10,428	10,428	0.37	0.01	—	10,440
Water	21.1	259	281	0.07	0.05	—	296
Waste	1,102	0.00	1,102	110	0.00	—	3,857
Refrig.	—	—	—	—	—	21.8	21.8
Total	1,124	79,804	80,928	114	3.55	84.7	84,923

2.6. Operations Emissions by Sector, Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Sector	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—
Mobile	—	464,159	464,159	20.2	21.2	932	471,906
Area	0.00	2,882	2,882	0.12	0.02	—	2,892
Energy	—	62,985	62,985	2.26	0.05	—	63,056
Water	102	1,538	1,641	0.35	0.22	—	1,716
Waste	6,659	0.00	6,659	666	0.00	—	23,298
Refrig.	—	—	—	—	—	132	132
Total	6,761	531,564	538,326	688	21.5	1,064	562,999
Daily, Winter (Max)	—	—	—	—	—	—	—
Mobile	—	438,559	438,559	23.4	23.1	24.2	446,064
Area	0.00	0.00	0.00	0.00	0.00	—	0.00
Energy	—	62,985	62,985	2.26	0.05	—	63,056
Water	102	1,538	1,641	0.35	0.22	—	1,716
Waste	6,659	0.00	6,659	666	0.00	—	23,298
Refrig.	—	—	—	—	—	132	132
Total	6,761	503,082	509,843	692	23.4	156	534,265
Average Daily	—	—	—	—	—	—	—
Mobile	—	416,047	416,047	20.8	21.1	380	423,241

Area	0.00	1,421	1,421	0.06	0.01	—	1,426
Energy	—	62,985	62,985	2.26	0.05	—	63,056
Water	102	1,538	1,641	0.35	0.22	—	1,716
Waste	6,659	0.00	6,659	666	0.00	—	23,298
Refrig.	—	—	—	—	—	132	132
Total	6,761	481,992	488,753	689	21.4	512	512,868
Annual	—	—	—	—	—	—	—
Mobile	—	68,881	68,881	3.45	3.50	62.9	70,072
Area	0.00	235	235	0.01	< 0.005	—	236
Energy	—	10,428	10,428	0.37	0.01	—	10,440
Water	16.9	255	272	0.06	0.04	—	284
Waste	1,102	0.00	1,102	110	0.00	—	3,857
Refrig.	—	—	—	—	—	21.8	21.8
Total	1,119	79,799	80,919	114	3.54	84.7	84,911

4. Operations Emissions Details

4.1. Mobile Emissions by Land Use

4.1.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—
Apartments Mid Rise	—	409,022	409,022	17.8	18.7	821	415,848
Condo/Townhouse	—	55,138	55,138	2.40	2.52	111	56,058
Total	—	464,159	464,159	20.2	21.2	932	471,906
Daily, Winter (Max)	—	—	—	—	—	—	—
Apartments Mid Rise	—	386,462	386,462	20.6	20.4	21.3	393,076

Condo/Townhouse	—	52,097	52,097	2.78	2.75	2.87	52,988
Total	—	438,559	438,559	23.4	23.1	24.2	446,064
Annual	—	—	—	—	—	—	—
Apartments Mid Rise	—	61,121	61,121	3.06	3.10	55.8	62,177
Condo/Townhouse	—	7,761	7,761	0.39	0.39	7.09	7,895
Total	—	68,881	68,881	3.45	3.50	62.9	70,072

4.1.2. Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—
Apartments Mid Rise	—	409,022	409,022	17.8	18.7	821	415,848
Condo/Townhouse	—	55,138	55,138	2.40	2.52	111	56,058
Total	—	464,159	464,159	20.2	21.2	932	471,906
Daily, Winter (Max)	—	—	—	—	—	—	—
Apartments Mid Rise	—	386,462	386,462	20.6	20.4	21.3	393,076
Condo/Townhouse	—	52,097	52,097	2.78	2.75	2.87	52,988
Total	—	438,559	438,559	23.4	23.1	24.2	446,064
Annual	—	—	—	—	—	—	—
Apartments Mid Rise	—	61,121	61,121	3.06	3.10	55.8	62,177
Condo/Townhouse	—	7,761	7,761	0.39	0.39	7.09	7,895
Total	—	68,881	68,881	3.45	3.50	62.9	70,072

4.2. Energy

4.2.1. Electricity Emissions By Land Use - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e

Daily, Summer (Max)	—	—	—	—	—	—	—
Apartments Mid Rise	—	37,434	37,434	0.00	0.00	—	37,434
Condo/Townhouse	—	0.00	0.00	0.00	0.00	—	0.00
Total	—	37,434	37,434	0.00	0.00	—	37,434
Daily, Winter (Max)	—	—	—	—	—	—	—
Apartments Mid Rise	—	37,434	37,434	0.00	0.00	—	37,434
Condo/Townhouse	—	0.00	0.00	0.00	0.00	—	0.00
Total	—	37,434	37,434	0.00	0.00	—	37,434
Annual	—	—	—	—	—	—	—
Apartments Mid Rise	—	6,198	6,198	0.00	0.00	—	6,198
Condo/Townhouse	—	0.00	0.00	0.00	0.00	—	0.00
Total	—	6,198	6,198	0.00	0.00	—	6,198

4.2.2. Electricity Emissions By Land Use - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—
Apartments Mid Rise	—	37,434	37,434	0.00	0.00	—	37,434
Condo/Townhouse	—	0.00	0.00	0.00	0.00	—	0.00
Total	—	37,434	37,434	0.00	0.00	—	37,434
Daily, Winter (Max)	—	—	—	—	—	—	—
Apartments Mid Rise	—	37,434	37,434	0.00	0.00	—	37,434
Condo/Townhouse	—	0.00	0.00	0.00	0.00	—	0.00
Total	—	37,434	37,434	0.00	0.00	—	37,434
Annual	—	—	—	—	—	—	—
Apartments Mid Rise	—	6,198	6,198	0.00	0.00	—	6,198
Condo/Townhouse	—	0.00	0.00	0.00	0.00	—	0.00
Total	—	6,198	6,198	0.00	0.00	—	6,198

4.2.3. Natural Gas Emissions By Land Use - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—
Apartments Mid Rise	—	25,551	25,551	2.26	0.05	—	25,621
Condo/Townhouse	—	0.00	0.00	0.00	0.00	—	0.00
Total	—	25,551	25,551	2.26	0.05	—	25,621
Daily, Winter (Max)	—	—	—	—	—	—	—
Apartments Mid Rise	—	25,551	25,551	2.26	0.05	—	25,621
Condo/Townhouse	—	0.00	0.00	0.00	0.00	—	0.00
Total	—	25,551	25,551	2.26	0.05	—	25,621
Annual	—	—	—	—	—	—	—
Apartments Mid Rise	—	4,230	4,230	0.37	0.01	—	4,242
Condo/Townhouse	—	0.00	0.00	0.00	0.00	—	0.00
Total	—	4,230	4,230	0.37	0.01	—	4,242

4.2.4. Natural Gas Emissions By Land Use - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—
Apartments Mid Rise	—	25,551	25,551	2.26	0.05	—	25,621
Condo/Townhouse	—	0.00	0.00	0.00	0.00	—	0.00
Total	—	25,551	25,551	2.26	0.05	—	25,621
Daily, Winter (Max)	—	—	—	—	—	—	—
Apartments Mid Rise	—	25,551	25,551	2.26	0.05	—	25,621
Condo/Townhouse	—	0.00	0.00	0.00	0.00	—	0.00
Total	—	25,551	25,551	2.26	0.05	—	25,621
Annual	—	—	—	—	—	—	—

Apartments Mid Rise	—	4,230	4,230	0.37	0.01	—	4,242
Condo/Townhouse	—	0.00	0.00	0.00	0.00	—	0.00
Total	—	4,230	4,230	0.37	0.01	—	4,242

4.3. Area Emissions by Source

4.3.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Source	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—
Hearths	0.00	0.00	0.00	0.00	0.00	—	0.00
Consumer Products	—	—	—	—	—	—	—
Architectural Coatings	—	—	—	—	—	—	—
Landscape Equipment	—	2,882	2,882	0.12	0.02	—	2,892
Total	0.00	2,882	2,882	0.12	0.02	—	2,892
Daily, Winter (Max)	—	—	—	—	—	—	—
Hearths	0.00	0.00	0.00	0.00	0.00	—	0.00
Consumer Products	—	—	—	—	—	—	—
Architectural Coatings	—	—	—	—	—	—	—
Total	0.00	0.00	0.00	0.00	0.00	—	0.00
Annual	—	—	—	—	—	—	—
Hearths	0.00	0.00	0.00	0.00	0.00	—	0.00
Consumer Products	—	—	—	—	—	—	—
Architectural Coatings	—	—	—	—	—	—	—
Landscape Equipment	—	235	235	0.01	< 0.005	—	236
Total	0.00	235	235	0.01	< 0.005	—	236

4.3.2. Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Source	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—
Hearths	0.00	0.00	0.00	0.00	0.00	—	0.00
Consumer Products	—	—	—	—	—	—	—
Architectural Coatings	—	—	—	—	—	—	—
Landscape Equipment	—	2,882	2,882	0.12	0.02	—	2,892
Total	0.00	2,882	2,882	0.12	0.02	—	2,892
Daily, Winter (Max)	—	—	—	—	—	—	—
Hearths	0.00	0.00	0.00	0.00	0.00	—	0.00
Consumer Products	—	—	—	—	—	—	—
Architectural Coatings	—	—	—	—	—	—	—
Total	0.00	0.00	0.00	0.00	0.00	—	0.00
Annual	—	—	—	—	—	—	—
Hearths	0.00	0.00	0.00	0.00	0.00	—	0.00
Consumer Products	—	—	—	—	—	—	—
Architectural Coatings	—	—	—	—	—	—	—
Landscape Equipment	—	235	235	0.01	< 0.005	—	236
Total	0.00	235	235	0.01	< 0.005	—	236

4.4. Water Emissions by Land Use

4.4.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—
Apartments Mid Rise	8.58	1,434	1,442	0.03	0.02	—	1,448
Condo/Townhouse	119	134	253	0.41	0.26	—	340

Total	128	1,567	1,695	0.44	0.28	—	1,789
Daily, Winter (Max)	—	—	—	—	—	—	—
Apartments Mid Rise	8.58	1,434	1,442	0.03	0.02	—	1,448
Condo/Townhouse	119	134	253	0.41	0.26	—	340
Total	128	1,567	1,695	0.44	0.28	—	1,789
Annual	—	—	—	—	—	—	—
Apartments Mid Rise	1.42	237	239	< 0.005	< 0.005	—	240
Condo/Townhouse	19.7	22.1	41.8	0.07	0.04	—	56.4
Total	21.1	259	281	0.07	0.05	—	296

4.4.2. Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—
Apartments Mid Rise	6.86	1,432	1,439	0.02	0.01	—	1,444
Condo/Townhouse	95.3	107	202	0.33	0.21	—	272
Total	102	1,538	1,641	0.35	0.22	—	1,716
Daily, Winter (Max)	—	—	—	—	—	—	—
Apartments Mid Rise	6.86	1,432	1,439	0.02	0.01	—	1,444
Condo/Townhouse	95.3	107	202	0.33	0.21	—	272
Total	102	1,538	1,641	0.35	0.22	—	1,716
Annual	—	—	—	—	—	—	—
Apartments Mid Rise	1.14	237	238	< 0.005	< 0.005	—	239
Condo/Townhouse	15.8	17.7	33.5	0.05	0.03	—	45.1
Total	16.9	255	272	0.06	0.04	—	284

4.5. Waste Emissions by Land Use

4.5.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—
Apartments Mid Rise	6,025	0.00	6,025	602	0.00	—	21,078
Condo/Townhouse	635	0.00	635	63.4	0.00	—	2,220
Total	6,659	0.00	6,659	666	0.00	—	23,298
Daily, Winter (Max)	—	—	—	—	—	—	—
Apartments Mid Rise	6,025	0.00	6,025	602	0.00	—	21,078
Condo/Townhouse	635	0.00	635	63.4	0.00	—	2,220
Total	6,659	0.00	6,659	666	0.00	—	23,298
Annual	—	—	—	—	—	—	—
Apartments Mid Rise	997	0.00	997	99.7	0.00	—	3,490
Condo/Townhouse	105	0.00	105	10.5	0.00	—	368
Total	1,102	0.00	1,102	110	0.00	—	3,857

4.5.2. Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—
Apartments Mid Rise	6,025	0.00	6,025	602	0.00	—	21,078
Condo/Townhouse	635	0.00	635	63.4	0.00	—	2,220
Total	6,659	0.00	6,659	666	0.00	—	23,298
Daily, Winter (Max)	—	—	—	—	—	—	—
Apartments Mid Rise	6,025	0.00	6,025	602	0.00	—	21,078
Condo/Townhouse	635	0.00	635	63.4	0.00	—	2,220
Total	6,659	0.00	6,659	666	0.00	—	23,298
Annual	—	—	—	—	—	—	—

Apartments Mid Rise	997	0.00	997	99.7	0.00	—	3,490
Condo/Townhouse	105	0.00	105	10.5	0.00	—	368
Total	1,102	0.00	1,102	110	0.00	—	3,857

4.6. Refrigerant Emissions by Land Use

4.6.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—
Apartments Mid Rise	—	—	—	—	—	120	120
Condo/Townhouse	—	—	—	—	—	11.9	11.9
Total	—	—	—	—	—	132	132
Daily, Winter (Max)	—	—	—	—	—	—	—
Apartments Mid Rise	—	—	—	—	—	120	120
Condo/Townhouse	—	—	—	—	—	11.9	11.9
Total	—	—	—	—	—	132	132
Annual	—	—	—	—	—	—	—
Apartments Mid Rise	—	—	—	—	—	19.8	19.8
Condo/Townhouse	—	—	—	—	—	1.97	1.97
Total	—	—	—	—	—	21.8	21.8

4.6.2. Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—
Apartments Mid Rise	—	—	—	—	—	120	120
Condo/Townhouse	—	—	—	—	—	11.9	11.9

Total	—	—	—	—	—	132	132
Daily, Winter (Max)	—	—	—	—	—	—	—
Apartments Mid Rise	—	—	—	—	—	120	120
Condo/Townhouse	—	—	—	—	—	11.9	11.9
Total	—	—	—	—	—	132	132
Annual	—	—	—	—	—	—	—
Apartments Mid Rise	—	—	—	—	—	19.8	19.8
Condo/Townhouse	—	—	—	—	—	1.97	1.97
Total	—	—	—	—	—	21.8	21.8

4.7. Offroad Emissions By Equipment Type

4.7.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—

4.7.2. Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—

Total	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—

4.8. Stationary Emissions By Equipment Type

4.8.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—

4.8.2. Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—

4.9. User Defined Emissions By Equipment Type

4.9.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—

4.9.2. Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—

4.10. Soil Carbon Accumulation By Vegetation Type

4.10.1. Soil Carbon Accumulation By Vegetation Type - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Vegetation	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—

Total	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—

4.10.2. Above and Belowground Carbon Accumulation by Land Use Type - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—

4.10.3. Avoided and Sequestered Emissions by Species - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Species	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—

Sequestered	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—

4.10.4. Soil Carbon Accumulation By Vegetation Type - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Vegetation	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—

4.10.5. Above and Belowground Carbon Accumulation by Land Use Type - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—

Total	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—

4.10.6. Avoided and Sequestered Emissions by Species - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Species	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—

Sequestered	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—

5. Activity Data

5.9. Operational Mobile Sources

5.9.1. Unmitigated

Land Use Type	Trips/Weekday	Trips/Saturday	Trips/Sunday	Trips/Year	VMT/Weekday	VMT/Saturday	VMT/Sunday	VMT/Year
Apartments Mid Rise	94,803	85,567	71,276	32,894,708	554,600	500,567	416,969	192,435,070
Condo/Townhouse	11,492	12,780	9,860	4,176,716	67,231	74,762	57,679	24,433,919

5.9.2. Mitigated

Land Use Type	Trips/Weekday	Trips/Saturday	Trips/Sunday	Trips/Year	VMT/Weekday	VMT/Saturday	VMT/Sunday	VMT/Year
Apartments Mid Rise	94,803	85,567	71,276	32,894,708	554,600	500,567	416,969	192,435,070
Condo/Townhouse	11,492	12,780	9,860	4,176,716	67,231	74,762	57,679	24,433,919

5.10. Operational Area Sources

5.10.1. Hearths

5.10.1.1. Unmitigated

Hearth Type	Unmitigated (number)
Apartments Mid Rise	—

Wood Fireplaces	0
Gas Fireplaces	0
Propane Fireplaces	0
Electric Fireplaces	0
No Fireplaces	0
Conventional Wood Stoves	0
Catalytic Wood Stoves	0
Non-Catalytic Wood Stoves	0
Pellet Wood Stoves	0
Condo/Townhouse	—
Wood Fireplaces	0
Gas Fireplaces	0
Propane Fireplaces	0
Electric Fireplaces	0
No Fireplaces	0
Conventional Wood Stoves	0
Catalytic Wood Stoves	0
Non-Catalytic Wood Stoves	0
Pellet Wood Stoves	0

5.10.1.2. Mitigated

Hearth Type	Unmitigated (number)
Apartments Mid Rise	—
Wood Fireplaces	0
Gas Fireplaces	0
Propane Fireplaces	0
Electric Fireplaces	0
No Fireplaces	0

Conventional Wood Stoves	0
Catalytic Wood Stoves	0
Non-Catalytic Wood Stoves	0
Pellet Wood Stoves	0
Condo/Townhouse	—
Wood Fireplaces	0
Gas Fireplaces	0
Propane Fireplaces	0
Electric Fireplaces	0
No Fireplaces	0
Conventional Wood Stoves	0
Catalytic Wood Stoves	0
Non-Catalytic Wood Stoves	0
Pellet Wood Stoves	0

5.10.2. Architectural Coatings

Residential Interior Area Coated (sq ft)	Residential Exterior Area Coated (sq ft)	Non-Residential Interior Area Coated (sq ft)	Non-Residential Exterior Area Coated (sq ft)	Parking Area Coated (sq ft)
37248093	12,416,031	0.00	0.00	—

5.10.3. Landscape Equipment

Season	Unit	Value
Snow Days	day/yr	0.00
Summer Days	day/yr	180

5.10.4. Landscape Equipment - Mitigated

Season	Unit	Value

Snow Days	day/yr	0.00
Summer Days	day/yr	180

5.11. Operational Energy Consumption

5.11.1. Unmitigated

Electricity (kWh/yr) and CO2 and CH4 and N2O and Natural Gas (kBTU/yr)

Land Use	Electricity (kWh/yr)	CO2	CH4	N2O	Natural Gas (kBTU/yr)
Apartments Mid Rise	101,211,157	135	0.0000	0.0000	79,724,461
Condo/Townhouse	0.00	135	0.0000	0.0000	0.00

5.11.2. Mitigated

Electricity (kWh/yr) and CO2 and CH4 and N2O and Natural Gas (kBTU/yr)

Land Use	Electricity (kWh/yr)	CO2	CH4	N2O	Natural Gas (kBTU/yr)
Apartments Mid Rise	101,211,157	135	0.0000	0.0000	79,724,461
Condo/Townhouse	0.00	135	0.0000	0.0000	0.00

5.12. Operational Water and Wastewater Consumption

5.12.1. Unmitigated

Land Use	Indoor Water (gal/year)	Outdoor Water (gal/year)
Apartments Mid Rise	4,012,726	780,308,430
Condo/Townhouse	55,752,035	0.00

5.12.2. Mitigated

Land Use	Indoor Water (gal/year)	Outdoor Water (gal/year)
Apartments Mid Rise	3,210,181	780,308,430
Condo/Townhouse	44,601,628	0.00

5.13. Operational Waste Generation

5.13.1. Unmitigated

Land Use	Waste (ton/year)	Cogeneration (kWh/year)
Apartments Mid Rise	11,178	—
Condo/Townhouse	1,177	—

5.13.2. Mitigated

Land Use	Waste (ton/year)	Cogeneration (kWh/year)
Apartments Mid Rise	11,178	—
Condo/Townhouse	1,177	—

5.14. Operational Refrigeration and Air Conditioning Equipment

5.14.1. Unmitigated

Land Use Type	Equipment Type	Refrigerant	GWP	Quantity (kg)	Operations Leak Rate	Service Leak Rate	Times Serviced
Apartments Mid Rise	Average room A/C & Other residential A/C and heat pumps	R-410A	2,088	< 0.005	2.50	2.50	10.0
Apartments Mid Rise	Household refrigerators and/or freezers	R-134a	1,430	0.12	0.60	0.00	1.00
Condo/Townhouse	Average room A/C & Other residential A/C and heat pumps	R-410A	2,088	< 0.005	2.50	2.50	10.0
Condo/Townhouse	Household refrigerators and/or freezers	R-134a	1,430	0.12	0.60	0.00	1.00

5.14.2. Mitigated

Land Use Type	Equipment Type	Refrigerant	GWP	Quantity (kg)	Operations Leak Rate	Service Leak Rate	Times Serviced
Apartments Mid Rise	Average room A/C & Other residential A/C and heat pumps	R-410A	2,088	< 0.005	2.50	2.50	10.0
Apartments Mid Rise	Household refrigerators and/or freezers	R-134a	1,430	0.12	0.60	0.00	1.00
Condo/Townhouse	Average room A/C & Other residential A/C and heat pumps	R-410A	2,088	< 0.005	2.50	2.50	10.0
Condo/Townhouse	Household refrigerators and/or freezers	R-134a	1,430	0.12	0.60	0.00	1.00

5.15. Operational Off-Road Equipment

5.15.1. Unmitigated

Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor

5.15.2. Mitigated

Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor

5.16. Stationary Sources

5.16.1. Emergency Generators and Fire Pumps

Equipment Type	Fuel Type	Number per Day	Hours per Day	Hours per Year	Horsepower	Load Factor

5.16.2. Process Boilers

Equipment Type	Fuel Type	Number	Boiler Rating (MMBtu/hr)	Daily Heat Input (MMBtu/day)	Annual Heat Input (MMBtu/yr)

5.17. User Defined

Equipment Type	Fuel Type

5.18. Vegetation

5.18.1. Land Use Change

5.18.1.1. Unmitigated

Vegetation Land Use Type	Vegetation Soil Type	Initial Acres	Final Acres

5.18.1.2. Mitigated

Vegetation Land Use Type	Vegetation Soil Type	Initial Acres	Final Acres

5.18.1. Biomass Cover Type

5.18.1.1. Unmitigated

Biomass Cover Type	Initial Acres	Final Acres

5.18.1.2. Mitigated

Biomass Cover Type	Initial Acres	Final Acres

5.18.2. Sequestration

5.18.2.1. Unmitigated

Tree Type	Number	Electricity Saved (kWh/year)	Natural Gas Saved (btu/year)

5.18.2.2. Mitigated

Tree Type	Number	Electricity Saved (kWh/year)	Natural Gas Saved (btu/year)

6. Climate Risk Detailed Report

6.1. Climate Risk Summary

Cal-Adapt midcentury 2040–2059 average projections for four hazards are reported below for your project location. These are under Representation Concentration Pathway (RCP) 8.5 which assumes GHG emissions will continue to rise strongly through 2050 and then plateau around 2100.

Climate Hazard	Result for Project Location	Unit
Temperature and Extreme Heat	7.10	annual days of extreme heat
Extreme Precipitation	7.50	annual days with precipitation above 20 mm
Sea Level Rise	—	meters of inundation depth
Wildfire	0.00	annual hectares burned

Temperature and Extreme Heat data are for grid cell in which your project are located. The projection is based on the 98th historical percentile of daily maximum/minimum temperatures from observed historical data (32 climate model ensemble from Cal-Adapt, 2040–2059 average under RCP 8.5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.
Extreme Precipitation data are for the grid cell in which your project are located. The threshold of 20 mm is equivalent to about ¾ an inch of rain, which would be light to moderate rainfall if received over a full day or heavy rain if received over a period of 2 to 4 hours. Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.
Sea Level Rise data are for the grid cell in which your project are located. The projections are from Radke et al. (2017), as reported in Cal-Adapt (Radke et al., 2017, CEC-500-2017-008), and consider inundation location and depth for the San Francisco Bay, the Sacramento-San Joaquin River Delta and California coast resulting different increments of sea level rise coupled with extreme storm events. Users may select from four scenarios to view the range in potential inundation depth for the grid cell. The four scenarios are: No rise, 0.5 meter, 1.0 meter, 1.41 meters
Wildfire data are for the grid cell in which your project are located. The projections are from UC Davis, as reported in Cal-Adapt (2040–2059 average under RCP 8.5), and consider historical data of climate, vegetation, population density, and large (> 400 ha) fire history. Users may select from four model simulations to view the range in potential wildfire probabilities for the grid cell. The four simulations make different assumptions about expected rainfall and temperature are: Warmer/drier (HadGEM2-ES), Cooler/wetter (CNRM-CM5), Average conditions (CanESM2), Range of different rainfall and temperature possibilities (MIROC5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.

6.2. Initial Climate Risk Scores

Climate Hazard	Exposure Score	Sensitivity Score	Adaptive Capacity Score	Vulnerability Score
Temperature and Extreme Heat	N/A	N/A	N/A	N/A
Extreme Precipitation	2	0	0	N/A
Sea Level Rise	1	0	0	N/A
Wildfire	1	0	0	N/A
Flooding	N/A	N/A	N/A	N/A
Drought	N/A	N/A	N/A	N/A

Snowpack Reduction	N/A	N/A	N/A	N/A
Air Quality Degradation	0	0	0	N/A

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.
The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.
The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores do not include implementation of climate risk reduction measures.

6.3. Adjusted Climate Risk Scores

Climate Hazard	Exposure Score	Sensitivity Score	Adaptive Capacity Score	Vulnerability Score
Temperature and Extreme Heat	N/A	N/A	N/A	N/A
Extreme Precipitation	2	1	1	3
Sea Level Rise	1	1	1	2
Wildfire	1	1	1	2
Flooding	N/A	N/A	N/A	N/A
Drought	N/A	N/A	N/A	N/A
Snowpack Reduction	N/A	N/A	N/A	N/A
Air Quality Degradation	1	1	1	2

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.
The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.
The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores include implementation of climate risk reduction measures.

6.4. Climate Risk Reduction Measures

7. Health and Equity Details

7.1. CalEnviroScreen 4.0 Scores

The maximum CalEnviroScreen score is 100. A high score (i.e., greater than 50) reflects a higher pollution burden compared to other census tracts in the state.

Indicator	Result for Project Census Tract
Exposure Indicators	—
AQ-Ozone	3.12
AQ-PM	39.2
AQ-DPM	77.5
Drinking Water	4.21
Lead Risk Housing	61.6
Pesticides	0.00
Toxic Releases	61.3
Traffic	31.2
Effect Indicators	—
CleanUp Sites	65.0
Groundwater	97.0
Haz Waste Facilities/Generators	93.0
Impaired Water Bodies	90.1
Solid Waste	9.67
Sensitive Population	—
Asthma	81.1
Cardio-vascular	46.8
Low Birth Weights	44.5
Socioeconomic Factor Indicators	—
Education	26.4
Housing	55.1
Linguistic	6.27
Poverty	35.6
Unemployment	49.9

7.2. Healthy Places Index Scores

The maximum Health Places Index score is 100. A high score (i.e., greater than 50) reflects healthier community conditions compared to other census tracts in the state.

Indicator	Result for Project Census Tract
Economic	—
Above Poverty	59.38662903
Employed	93.82779417
Median HI	46.50327217
Education	—
Bachelor's or higher	88.88746311
High school enrollment	100
Preschool enrollment	74.06646991
Transportation	—
Auto Access	13.06300526
Active commuting	96.25304761
Social	—
2-parent households	16.38650071
Voting	76.22225074
Neighborhood	—
Alcohol availability	4.516874118
Park access	81.35506224
Retail density	82.84357757
Supermarket access	74.27178237
Tree canopy	46.11831131
Housing	—
Homeownership	47.94045939
Housing habitability	50.7121776
Low-inc homeowner severe housing cost burden	19.67150006
Low-inc renter severe housing cost burden	46.67008854
Uncrowded housing	60.05389452
Health Outcomes	—

Insured adults	80.68779674
Arthritis	60.6
Asthma ER Admissions	13.2
High Blood Pressure	62.1
Cancer (excluding skin)	38.7
Asthma	61.7
Coronary Heart Disease	79.3
Chronic Obstructive Pulmonary Disease	88.0
Diagnosed Diabetes	75.2
Life Expectancy at Birth	71.4
Cognitively Disabled	85.7
Physically Disabled	84.3
Heart Attack ER Admissions	59.6
Mental Health Not Good	82.3
Chronic Kidney Disease	64.9
Obesity	68.7
Pedestrian Injuries	19.6
Physical Health Not Good	84.3
Stroke	70.4
Health Risk Behaviors	—
Binge Drinking	38.6
Current Smoker	87.1
No Leisure Time for Physical Activity	83.8
Climate Change Exposures	—
Wildfire Risk	0.0
SLR Inundation Area	0.0
Children	92.8
Elderly	43.9

English Speaking	71.2
Foreign-born	47.0
Outdoor Workers	90.9
Climate Change Adaptive Capacity	—
Impervious Surface Cover	28.0
Traffic Density	29.2
Traffic Access	87.4
Other Indices	—
Hardship	21.5
Other Decision Support	—
2016 Voting	71.1

7.3. Overall Health & Equity Scores

Metric	Result for Project Census Tract
CalEnviroScreen 4.0 Score for Project Location (a)	54.0
Healthy Places Index Score for Project Location (b)	82.0
Project Located in a Designated Disadvantaged Community (Senate Bill 535)	No
Project Located in a Low-Income Community (Assembly Bill 1550)	Yes
Project Located in a Community Air Protection Program Community (Assembly Bill 617)	No

a: The maximum CalEnviroScreen score is 100. A high score (i.e., greater than 50) reflects a higher pollution burden compared to other census tracts in the state.
b: The maximum Health Places Index score is 100. A high score (i.e., greater than 50) reflects healthier community conditions compared to other census tracts in the state.

7.4. Health & Equity Measures

No Health & Equity Measures selected.

7.5. Evaluation Scorecard

Health & Equity Evaluation Scorecard not completed.

7.6. Health & Equity Custom Measures

No Health & Equity Custom Measures created.

8. User Changes to Default Data

Screen	Justification
Characteristics: Utility Information	East Bay Community Energy is the primary electricity provider. Intensity factors adjusted for consistency with Berkeley Housing Element methodology.
Land Use	Based on EIR growth assumption of 17,427 multi-family units, 1,570 condo/townhome units and 47,120 new residents. ADUs included as condo/townhouse for a conservative assumption. Default acreage and building square footage. Landscape area set to zero, outdoor water consumption estimated at rate of 41,075 gal/unit.
Operations: Hearths	No woodstoves or fireplaces
Operations: Energy Use	Assume 60% of development will not include natural gas pursuant to BMC Section 12.80 (Natural gas ban). Totals combined and added to Apartments row.
Operations: Water and Waste Water	EBMUD Wastewater treatment plant 100 percent aerobic. Water consumption based on v2020 defaults per multifamily unit in lieu of available data in v2022.

San Pablo Ave SP Added Units Detailed Report

Table of Contents

1. Basic Project Information

1.1. Basic Project Information

1.2. Land Use Types

1.3. User-Selected Emission Reduction Measures by Emissions Sector

2. Emissions Summary

2.4. Operations Emissions Compared Against Thresholds

2.5. Operations Emissions by Sector, Unmitigated

2.6. Operations Emissions by Sector, Mitigated

4. Operations Emissions Details

4.1. Mobile Emissions by Land Use

4.1.1. Unmitigated

4.1.2. Mitigated

4.2. Energy

4.2.1. Electricity Emissions By Land Use - Unmitigated

4.2.2. Electricity Emissions By Land Use - Mitigated

4.2.3. Natural Gas Emissions By Land Use - Unmitigated

4.2.4. Natural Gas Emissions By Land Use - Mitigated

4.3. Area Emissions by Source

4.3.1. Unmitigated

4.3.2. Mitigated

4.4. Water Emissions by Land Use

4.4.1. Unmitigated

4.4.2. Mitigated

4.5. Waste Emissions by Land Use

4.5.1. Unmitigated

4.5.2. Mitigated

4.6. Refrigerant Emissions by Land Use

4.6.1. Unmitigated

4.6.2. Mitigated

4.7. Offroad Emissions By Equipment Type

4.7.1. Unmitigated

4.7.2. Mitigated

4.8. Stationary Emissions By Equipment Type

4.8.1. Unmitigated

4.8.2. Mitigated

4.9. User Defined Emissions By Equipment Type

4.9.1. Unmitigated

4.9.2. Mitigated

4.10. Soil Carbon Accumulation By Vegetation Type

4.10.1. Soil Carbon Accumulation By Vegetation Type - Unmitigated

4.10.2. Above and Belowground Carbon Accumulation by Land Use Type - Unmitigated

4.10.3. Avoided and Sequestered Emissions by Species - Unmitigated

4.10.4. Soil Carbon Accumulation By Vegetation Type - Mitigated

4.10.5. Above and Belowground Carbon Accumulation by Land Use Type - Mitigated

4.10.6. Avoided and Sequestered Emissions by Species - Mitigated

5. Activity Data

5.9. Operational Mobile Sources

5.9.1. Unmitigated

5.9.2. Mitigated

5.10. Operational Area Sources

5.10.1. Hearths

5.10.1.1. Unmitigated

5.10.1.2. Mitigated

5.10.2. Architectural Coatings

5.10.3. Landscape Equipment

5.10.4. Landscape Equipment - Mitigated

5.11. Operational Energy Consumption

5.11.1. Unmitigated

5.11.2. Mitigated

5.12. Operational Water and Wastewater Consumption

5.12.1. Unmitigated

5.12.2. Mitigated

5.13. Operational Waste Generation

5.13.1. Unmitigated

5.13.2. Mitigated

5.14. Operational Refrigeration and Air Conditioning Equipment

5.14.1. Unmitigated

5.14.2. Mitigated

5.15. Operational Off-Road Equipment

5.15.1. Unmitigated

5.15.2. Mitigated

5.16. Stationary Sources

5.16.1. Emergency Generators and Fire Pumps

5.16.2. Process Boilers

5.17. User Defined

5.18. Vegetation

5.18.1. Land Use Change

5.18.1.1. Unmitigated

5.18.1.2. Mitigated

5.18.1. Biomass Cover Type

5.18.1.1. Unmitigated

5.18.1.2. Mitigated

5.18.2. Sequestration

5.18.2.1. Unmitigated

5.18.2.2. Mitigated

6. Climate Risk Detailed Report

6.1. Climate Risk Summary

6.2. Initial Climate Risk Scores

6.3. Adjusted Climate Risk Scores

6.4. Climate Risk Reduction Measures

7. Health and Equity Details

7.1. CalEnviroScreen 4.0 Scores

7.2. Healthy Places Index Scores

7.3. Overall Health & Equity Scores

7.4. Health & Equity Measures

7.5. Evaluation Scorecard

7.6. Health & Equity Custom Measures

8. User Changes to Default Data

1. Basic Project Information

1.1. Basic Project Information

Data Field	Value
Project Name	San Pablo Ave SP Added Units
Operational Year	2031
Lead Agency	—
Land Use Scale	Plan/community
Analysis Level for Defaults	County
Windspeed (m/s)	3.90
Precipitation (days)	3.40
Location	37.87310585963721, -122.29377329662165
County	Alameda
City	Berkeley
Air District	Bay Area AQMD
Air Basin	San Francisco Bay Area
TAZ	1533
EDFZ	1
Electric Utility	User Defined
Gas Utility	User Defined
App Version	2022.1.1.29

1.2. Land Use Types

Land Use Subtype	Size	Unit	Lot Acreage	Building Area (sq ft)	Landscape Area (sq ft)	Special Landscape Area (sq ft)	Population	Description
Apartments Mid Rise	3,250	Dwelling Unit	85.5	3,120,000	0.00	—	8,125	—

1.3. User-Selected Emission Reduction Measures by Emissions Sector

Sector	#	Measure Title
Water	W-7	Adopt a Water Conservation Strategy

2. Emissions Summary

2.4. Operations Emissions Compared Against Thresholds

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Un/Mit.	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—
Unmit.	1,395	86,922	88,317	119	4.03	176	92,675
Mit.	1,346	86,867	88,212	119	3.92	176	92,534
% Reduced	4%	< 0.5%	< 0.5%	< 0.5%	3%	—	< 0.5%
Daily, Winter (Max)	—	—	—	—	—	—	—
Unmit.	1,395	82,222	83,617	120	4.35	26.3	87,934
Mit.	1,346	82,167	83,512	120	4.24	26.3	87,793
% Reduced	4%	< 0.5%	< 0.5%	< 0.5%	2%	—	< 0.5%
Average Daily (Max)	—	—	—	—	—	—	—
Unmit.	1,395	79,241	80,636	119	4.04	85.2	84,910
Mit.	1,346	79,186	80,531	119	3.93	85.2	84,769
% Reduced	4%	< 0.5%	< 0.5%	< 0.5%	3%	—	< 0.5%
Annual (Max)	—	—	—	—	—	—	—
Unmit.	231	13,119	13,350	19.8	0.67	14.1	14,058
Mit.	223	13,110	13,333	19.7	0.65	14.1	14,035
% Reduced	4%	< 0.5%	< 0.5%	< 0.5%	3%	—	< 0.5%

2.5. Operations Emissions by Sector, Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Sector	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—
Mobile	—	76,279	76,279	3.32	3.48	153	77,552
Area	0.00	493	493	0.02	< 0.005	—	495
Energy	—	9,630	9,630	0.32	0.01	—	9,640
Water	247	520	767	0.85	0.54	—	948
Waste	1,148	0.00	1,148	115	0.00	—	4,017
Refrig.	—	—	—	—	—	22.3	22.3
Total	1,395	86,922	88,317	119	4.03	176	92,675
Daily, Winter (Max)	—	—	—	—	—	—	—
Mobile	—	72,072	72,072	3.84	3.80	3.97	73,306
Area	0.00	0.00	0.00	0.00	0.00	—	0.00
Energy	—	9,630	9,630	0.32	0.01	—	9,640
Water	247	520	767	0.85	0.54	—	948
Waste	1,148	0.00	1,148	115	0.00	—	4,017
Refrig.	—	—	—	—	—	22.3	22.3
Total	1,395	82,222	83,617	120	4.35	26.3	87,934
Average Daily	—	—	—	—	—	—	—
Mobile	—	68,848	68,848	3.45	3.49	62.9	70,038
Area	0.00	243	243	0.01	< 0.005	—	244
Energy	—	9,630	9,630	0.32	0.01	—	9,640
Water	247	520	767	0.85	0.54	—	948
Waste	1,148	0.00	1,148	115	0.00	—	4,017
Refrig.	—	—	—	—	—	22.3	22.3
Total	1,395	79,241	80,636	119	4.04	85.2	84,910
Annual	—	—	—	—	—	—	—
Mobile	—	11,399	11,399	0.57	0.58	10.4	11,596

Area	0.00	40.3	40.3	< 0.005	< 0.005	—	40.4
Energy	—	1,594	1,594	0.05	< 0.005	—	1,596
Water	40.8	86.1	127	0.14	0.09	—	157
Waste	190	0.00	190	19.0	0.00	—	665
Refrig.	—	—	—	—	—	3.70	3.70
Total	231	13,119	13,350	19.8	0.67	14.1	14,058

2.6. Operations Emissions by Sector, Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Sector	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—
Mobile	—	76,279	76,279	3.32	3.48	153	77,552
Area	0.00	493	493	0.02	< 0.005	—	495
Energy	—	9,630	9,630	0.32	0.01	—	9,640
Water	197	465	662	0.68	0.43	—	807
Waste	1,148	0.00	1,148	115	0.00	—	4,017
Refrig.	—	—	—	—	—	22.3	22.3
Total	1,346	86,867	88,212	119	3.92	176	92,534
Daily, Winter (Max)	—	—	—	—	—	—	—
Mobile	—	72,072	72,072	3.84	3.80	3.97	73,306
Area	0.00	0.00	0.00	0.00	0.00	—	0.00
Energy	—	9,630	9,630	0.32	0.01	—	9,640
Water	197	465	662	0.68	0.43	—	807
Waste	1,148	0.00	1,148	115	0.00	—	4,017
Refrig.	—	—	—	—	—	22.3	22.3
Total	1,346	82,167	83,512	120	4.24	26.3	87,793
Average Daily	—	—	—	—	—	—	—
Mobile	—	68,848	68,848	3.45	3.49	62.9	70,038

Area	0.00	243	243	0.01	< 0.005	—	244
Energy	—	9,630	9,630	0.32	0.01	—	9,640
Water	197	465	662	0.68	0.43	—	807
Waste	1,148	0.00	1,148	115	0.00	—	4,017
Refrig.	—	—	—	—	—	22.3	22.3
Total	1,346	79,186	80,531	119	3.93	85.2	84,769
Annual	—	—	—	—	—	—	—
Mobile	—	11,399	11,399	0.57	0.58	10.4	11,596
Area	0.00	40.3	40.3	< 0.005	< 0.005	—	40.4
Energy	—	1,594	1,594	0.05	< 0.005	—	1,596
Water	32.7	76.9	110	0.11	0.07	—	134
Waste	190	0.00	190	19.0	0.00	—	665
Refrig.	—	—	—	—	—	3.70	3.70
Total	223	13,110	13,333	19.7	0.65	14.1	14,035

4. Operations Emissions Details

4.1. Mobile Emissions by Land Use

4.1.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—
Apartments Mid Rise	—	76,279	76,279	3.32	3.48	153	77,552
Total	—	76,279	76,279	3.32	3.48	153	77,552
Daily, Winter (Max)	—	—	—	—	—	—	—
Apartments Mid Rise	—	72,072	72,072	3.84	3.80	3.97	73,306
Total	—	72,072	72,072	3.84	3.80	3.97	73,306

Annual	—	—	—	—	—	—	—
Apartments Mid Rise	—	11,399	11,399	0.57	0.58	10.4	11,596
Total	—	11,399	11,399	0.57	0.58	10.4	11,596

4.1.2. Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—
Apartments Mid Rise	—	76,279	76,279	3.32	3.48	153	77,552
Total	—	76,279	76,279	3.32	3.48	153	77,552
Daily, Winter (Max)	—	—	—	—	—	—	—
Apartments Mid Rise	—	72,072	72,072	3.84	3.80	3.97	73,306
Total	—	72,072	72,072	3.84	3.80	3.97	73,306
Annual	—	—	—	—	—	—	—
Apartments Mid Rise	—	11,399	11,399	0.57	0.58	10.4	11,596
Total	—	11,399	11,399	0.57	0.58	10.4	11,596

4.2. Energy

4.2.1. Electricity Emissions By Land Use - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—
Apartments Mid Rise	—	5,962	5,962	0.00	0.00	—	5,962
Total	—	5,962	5,962	0.00	0.00	—	5,962
Daily, Winter (Max)	—	—	—	—	—	—	—
Apartments Mid Rise	—	5,962	5,962	0.00	0.00	—	5,962
Total	—	5,962	5,962	0.00	0.00	—	5,962

Annual	—	—	—	—	—	—	—
Apartments Mid Rise	—	987	987	0.00	0.00	—	987
Total	—	987	987	0.00	0.00	—	987

4.2.2. Electricity Emissions By Land Use - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—
Apartments Mid Rise	—	5,962	5,962	0.00	0.00	—	5,962
Total	—	5,962	5,962	0.00	0.00	—	5,962
Daily, Winter (Max)	—	—	—	—	—	—	—
Apartments Mid Rise	—	5,962	5,962	0.00	0.00	—	5,962
Total	—	5,962	5,962	0.00	0.00	—	5,962
Annual	—	—	—	—	—	—	—
Apartments Mid Rise	—	987	987	0.00	0.00	—	987
Total	—	987	987	0.00	0.00	—	987

4.2.3. Natural Gas Emissions By Land Use - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—
Apartments Mid Rise	—	3,668	3,668	0.32	0.01	—	3,678
Total	—	3,668	3,668	0.32	0.01	—	3,678
Daily, Winter (Max)	—	—	—	—	—	—	—
Apartments Mid Rise	—	3,668	3,668	0.32	0.01	—	3,678
Total	—	3,668	3,668	0.32	0.01	—	3,678
Annual	—	—	—	—	—	—	—
Apartments Mid Rise	—	607	607	0.05	< 0.005	—	609

Total	—	607	607	0.05	< 0.005	—	609

4.2.4. Natural Gas Emissions By Land Use - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—
Apartments Mid Rise	—	3,668	3,668	0.32	0.01	—	3,678
Total	—	3,668	3,668	0.32	0.01	—	3,678
Daily, Winter (Max)	—	—	—	—	—	—	—
Apartments Mid Rise	—	3,668	3,668	0.32	0.01	—	3,678
Total	—	3,668	3,668	0.32	0.01	—	3,678
Annual	—	—	—	—	—	—	—
Apartments Mid Rise	—	607	607	0.05	< 0.005	—	609
Total	—	607	607	0.05	< 0.005	—	609

4.3. Area Emissions by Source

4.3.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Source	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—
Hearths	0.00	0.00	0.00	0.00	0.00	—	0.00
Consumer Products	—	—	—	—	—	—	—
Architectural Coatings	—	—	—	—	—	—	—
Landscape Equipment	—	493	493	0.02	< 0.005	—	495
Total	0.00	493	493	0.02	< 0.005	—	495
Daily, Winter (Max)	—	—	—	—	—	—	—
Hearths	0.00	0.00	0.00	0.00	0.00	—	0.00

Consumer Products	—	—	—	—	—	—	—
Architectural Coatings	—	—	—	—	—	—	—
Total	0.00	0.00	0.00	0.00	0.00	—	0.00
Annual	—	—	—	—	—	—	—
Hearths	0.00	0.00	0.00	0.00	0.00	—	0.00
Consumer Products	—	—	—	—	—	—	—
Architectural Coatings	—	—	—	—	—	—	—
Landscape Equipment	—	40.3	40.3	< 0.005	< 0.005	—	40.4
Total	0.00	40.3	40.3	< 0.005	< 0.005	—	40.4

4.3.2. Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Source	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—
Hearths	0.00	0.00	0.00	0.00	0.00	—	0.00
Consumer Products	—	—	—	—	—	—	—
Architectural Coatings	—	—	—	—	—	—	—
Landscape Equipment	—	493	493	0.02	< 0.005	—	495
Total	0.00	493	493	0.02	< 0.005	—	495
Daily, Winter (Max)	—	—	—	—	—	—	—
Hearths	0.00	0.00	0.00	0.00	0.00	—	0.00
Consumer Products	—	—	—	—	—	—	—
Architectural Coatings	—	—	—	—	—	—	—
Total	0.00	0.00	0.00	0.00	0.00	—	0.00
Annual	—	—	—	—	—	—	—
Hearths	0.00	0.00	0.00	0.00	0.00	—	0.00
Consumer Products	—	—	—	—	—	—	—
Architectural Coatings	—	—	—	—	—	—	—

Landscape Equipment	—	40.3	40.3	< 0.005	< 0.005	—	40.4
Total	0.00	40.3	40.3	< 0.005	< 0.005	—	40.4

4.4. Water Emissions by Land Use

4.4.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—
Apartments Mid Rise	247	520	767	0.85	0.54	—	948
Total	247	520	767	0.85	0.54	—	948
Daily, Winter (Max)	—	—	—	—	—	—	—
Apartments Mid Rise	247	520	767	0.85	0.54	—	948
Total	247	520	767	0.85	0.54	—	948
Annual	—	—	—	—	—	—	—
Apartments Mid Rise	40.8	86.1	127	0.14	0.09	—	157
Total	40.8	86.1	127	0.14	0.09	—	157

4.4.2. Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—
Apartments Mid Rise	197	465	662	0.68	0.43	—	807
Total	197	465	662	0.68	0.43	—	807
Daily, Winter (Max)	—	—	—	—	—	—	—
Apartments Mid Rise	197	465	662	0.68	0.43	—	807
Total	197	465	662	0.68	0.43	—	807
Annual	—	—	—	—	—	—	—

Apartments Mid Rise	32.7	76.9	110	0.11	0.07	—	134
Total	32.7	76.9	110	0.11	0.07	—	134

4.5. Waste Emissions by Land Use

4.5.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—
Apartments Mid Rise	1,148	0.00	1,148	115	0.00	—	4,017
Total	1,148	0.00	1,148	115	0.00	—	4,017
Daily, Winter (Max)	—	—	—	—	—	—	—
Apartments Mid Rise	1,148	0.00	1,148	115	0.00	—	4,017
Total	1,148	0.00	1,148	115	0.00	—	4,017
Annual	—	—	—	—	—	—	—
Apartments Mid Rise	190	0.00	190	19.0	0.00	—	665
Total	190	0.00	190	19.0	0.00	—	665

4.5.2. Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—
Apartments Mid Rise	1,148	0.00	1,148	115	0.00	—	4,017
Total	1,148	0.00	1,148	115	0.00	—	4,017
Daily, Winter (Max)	—	—	—	—	—	—	—
Apartments Mid Rise	1,148	0.00	1,148	115	0.00	—	4,017
Total	1,148	0.00	1,148	115	0.00	—	4,017
Annual	—	—	—	—	—	—	—

Apartments Mid Rise	190	0.00	190	19.0	0.00	—	665
Total	190	0.00	190	19.0	0.00	—	665

4.6. Refrigerant Emissions by Land Use

4.6.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—
Apartments Mid Rise	—	—	—	—	—	22.3	22.3
Total	—	—	—	—	—	22.3	22.3
Daily, Winter (Max)	—	—	—	—	—	—	—
Apartments Mid Rise	—	—	—	—	—	22.3	22.3
Total	—	—	—	—	—	22.3	22.3
Annual	—	—	—	—	—	—	—
Apartments Mid Rise	—	—	—	—	—	3.70	3.70
Total	—	—	—	—	—	3.70	3.70

4.6.2. Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—
Apartments Mid Rise	—	—	—	—	—	22.3	22.3
Total	—	—	—	—	—	22.3	22.3
Daily, Winter (Max)	—	—	—	—	—	—	—
Apartments Mid Rise	—	—	—	—	—	22.3	22.3
Total	—	—	—	—	—	22.3	22.3
Annual	—	—	—	—	—	—	—

Apartments Mid Rise	—	—	—	—	—	3.70	3.70
Total	—	—	—	—	—	3.70	3.70

4.7. Offroad Emissions By Equipment Type

4.7.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—

4.7.2. Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—

4.8. Stationary Emissions By Equipment Type

4.8.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—

4.8.2. Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—

4.9. User Defined Emissions By Equipment Type

4.9.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—

Annual	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—

4.9.2. Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—

4.10. Soil Carbon Accumulation By Vegetation Type

4.10.1. Soil Carbon Accumulation By Vegetation Type - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Vegetation	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—

4.10.2. Above and Belowground Carbon Accumulation by Land Use Type - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e

Daily, Summer (Max)	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—

4.10.3. Avoided and Sequestered Emissions by Species - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Species	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—

Subtotal	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—

4.10.4. Soil Carbon Accumulation By Vegetation Type - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Vegetation	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—

4.10.5. Above and Belowground Carbon Accumulation by Land Use Type - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—

4.10.6. Avoided and Sequestered Emissions by Species - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Species	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—

5. Activity Data

5.9. Operational Mobile Sources

5.9.1. Unmitigated

Land Use Type	Trips/Weekday	Trips/Saturday	Trips/Sunday	Trips/Year	VMT/Weekday	VMT/Saturday	VMT/Sunday	VMT/Year
Apartments Mid Rise	17,680	15,957	13,293	6,134,607	103,429	93,352	77,762	35,887,644

5.9.2. Mitigated

Land Use Type	Trips/Weekday	Trips/Saturday	Trips/Sunday	Trips/Year	VMT/Weekday	VMT/Saturday	VMT/Sunday	VMT/Year
Apartments Mid Rise	17,680	15,957	13,293	6,134,607	103,429	93,352	77,762	35,887,644

5.10. Operational Area Sources

5.10.1. Hearths

5.10.1.1. Unmitigated

Hearth Type	Unmitigated (number)
Apartments Mid Rise	—
Wood Fireplaces	0
Gas Fireplaces	0
Propane Fireplaces	0
Electric Fireplaces	0
No Fireplaces	0
Conventional Wood Stoves	0
Catalytic Wood Stoves	0
Non-Catalytic Wood Stoves	0

Pellet Wood Stoves	0

5.10.1.2. Mitigated

Hearth Type	Unmitigated (number)
Apartments Mid Rise	—
Wood Fireplaces	0
Gas Fireplaces	0
Propane Fireplaces	0
Electric Fireplaces	0
No Fireplaces	0
Conventional Wood Stoves	0
Catalytic Wood Stoves	0
Non-Catalytic Wood Stoves	0
Pellet Wood Stoves	0

5.10.2. Architectural Coatings

Residential Interior Area Coated (sq ft)	Residential Exterior Area Coated (sq ft)	Non-Residential Interior Area Coated (sq ft)	Non-Residential Exterior Area Coated (sq ft)	Parking Area Coated (sq ft)
6318000	2,106,000	0.00	0.00	—

5.10.3. Landscape Equipment

Season	Unit	Value
Snow Days	day/yr	0.00
Summer Days	day/yr	180

5.10.4. Landscape Equipment - Mitigated

Season	Unit	Value

Snow Days	day/yr	0.00
Summer Days	day/yr	180

5.11. Operational Energy Consumption

5.11.1. Unmitigated

Electricity (kWh/yr) and CO2 and CH4 and N2O and Natural Gas (kBTU/yr)

Land Use	Electricity (kWh/yr)	CO2	CH4	N2O	Natural Gas (kBTU/yr)
Apartments Mid Rise	16,118,850	135	0.0000	0.0000	11,445,292

5.11.2. Mitigated

Electricity (kWh/yr) and CO2 and CH4 and N2O and Natural Gas (kBTU/yr)

Land Use	Electricity (kWh/yr)	CO2	CH4	N2O	Natural Gas (kBTU/yr)
Apartments Mid Rise	16,118,850	135	0.0000	0.0000	11,445,292

5.12. Operational Water and Wastewater Consumption

5.12.1. Unmitigated

Land Use	Indoor Water (gal/year)	Outdoor Water (gal/year)
Apartments Mid Rise	115,410,263	133,494,889

5.12.2. Mitigated

Land Use	Indoor Water (gal/year)	Outdoor Water (gal/year)
Apartments Mid Rise	92,328,210	133,494,889

5.13. Operational Waste Generation

5.13.1. Unmitigated

Land Use	Waste (ton/year)	Cogeneration (kWh/year)
Apartments Mid Rise	2,131	—

5.13.2. Mitigated

Land Use	Waste (ton/year)	Cogeneration (kWh/year)
Apartments Mid Rise	2,131	—

5.14. Operational Refrigeration and Air Conditioning Equipment

5.14.1. Unmitigated

Land Use Type	Equipment Type	Refrigerant	GWP	Quantity (kg)	Operations Leak Rate	Service Leak Rate	Times Serviced
Apartments Mid Rise	Average room A/C & Other residential A/C and heat pumps	R-410A	2,088	< 0.005	2.50	2.50	10.0
Apartments Mid Rise	Household refrigerators and/or freezers	R-134a	1,430	0.12	0.60	0.00	1.00

5.14.2. Mitigated

Land Use Type	Equipment Type	Refrigerant	GWP	Quantity (kg)	Operations Leak Rate	Service Leak Rate	Times Serviced
Apartments Mid Rise	Average room A/C & Other residential A/C and heat pumps	R-410A	2,088	< 0.005	2.50	2.50	10.0
Apartments Mid Rise	Household refrigerators and/or freezers	R-134a	1,430	0.12	0.60	0.00	1.00

5.15. Operational Off-Road Equipment

5.15.1. Unmitigated

Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor

5.15.2. Mitigated

Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor

5.16. Stationary Sources

5.16.1. Emergency Generators and Fire Pumps

Equipment Type	Fuel Type	Number per Day	Hours per Day	Hours per Year	Horsepower	Load Factor

5.16.2. Process Boilers

Equipment Type	Fuel Type	Number	Boiler Rating (MMBtu/hr)	Daily Heat Input (MMBtu/day)	Annual Heat Input (MMBtu/yr)

5.17. User Defined

Equipment Type	Fuel Type

5.18. Vegetation

5.18.1. Land Use Change

5.18.1.1. Unmitigated

Vegetation Land Use Type	Vegetation Soil Type	Initial Acres	Final Acres

5.18.1.2. Mitigated

Vegetation Land Use Type	Vegetation Soil Type	Initial Acres	Final Acres

5.18.1. Biomass Cover Type

5.18.1.1. Unmitigated

Biomass Cover Type	Initial Acres	Final Acres

5.18.1.2. Mitigated

Biomass Cover Type	Initial Acres	Final Acres

5.18.2. Sequestration

5.18.2.1. Unmitigated

Tree Type	Number	Electricity Saved (kWh/year)	Natural Gas Saved (btu/year)

5.18.2.2. Mitigated

Tree Type	Number	Electricity Saved (kWh/year)	Natural Gas Saved (btu/year)

6. Climate Risk Detailed Report

6.1. Climate Risk Summary

Cal-Adapt midcentury 2040–2059 average projections for four hazards are reported below for your project location. These are under Representation Concentration Pathway (RCP) 8.5 which assumes GHG emissions will continue to rise strongly through 2050 and then plateau around 2100.

Climate Hazard	Result for Project Location	Unit
Temperature and Extreme Heat	7.10	annual days of extreme heat
Extreme Precipitation	7.50	annual days with precipitation above 20 mm
Sea Level Rise	—	meters of inundation depth
Wildfire	0.00	annual hectares burned

Temperature and Extreme Heat data are for grid cell in which your project are located. The projection is based on the 98th historical percentile of daily maximum/minimum temperatures from observed historical data (32 climate model ensemble from Cal-Adapt, 2040–2059 average under RCP 8.5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.
Extreme Precipitation data are for the grid cell in which your project are located. The threshold of 20 mm is equivalent to about ¾ an inch of rain, which would be light to moderate rainfall if received over a full day or heavy rain if received over a period of 2 to 4 hours. Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.
Sea Level Rise data are for the grid cell in which your project are located. The projections are from Radke et al. (2017), as reported in Cal-Adapt (Radke et al., 2017, CEC-500-2017-008), and consider inundation location and depth for the San Francisco Bay, the Sacramento-San Joaquin River Delta and California coast resulting different increments of sea level rise coupled with extreme storm events. Users may select from four scenarios to view the range in potential inundation depth for the grid cell. The four scenarios are: No rise, 0.5 meter, 1.0 meter, 1.41 meters
Wildfire data are for the grid cell in which your project are located. The projections are from UC Davis, as reported in Cal-Adapt (2040–2059 average under RCP 8.5), and consider historical data of climate, vegetation, population density, and large (> 400 ha) fire history. Users may select from four model simulations to view the range in potential wildfire probabilities for the grid cell. The four simulations make different assumptions about expected rainfall and temperature are: Warmer/drier (HadGEM2-ES), Cooler/wetter (CNRM-CM5), Average conditions (CanESM2), Range of different rainfall and temperature possibilities (MIROC5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.

6.2. Initial Climate Risk Scores

Climate Hazard	Exposure Score	Sensitivity Score	Adaptive Capacity Score	Vulnerability Score
Temperature and Extreme Heat	N/A	N/A	N/A	N/A
Extreme Precipitation	2	0	0	N/A
Sea Level Rise	1	0	0	N/A
Wildfire	1	0	0	N/A
Flooding	N/A	N/A	N/A	N/A
Drought	N/A	N/A	N/A	N/A
Snowpack Reduction	N/A	N/A	N/A	N/A
Air Quality Degradation	0	0	0	N/A

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.
The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.
The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores do not include implementation of climate risk reduction measures.

6.3. Adjusted Climate Risk Scores

Climate Hazard	Exposure Score	Sensitivity Score	Adaptive Capacity Score	Vulnerability Score
Temperature and Extreme Heat	N/A	N/A	N/A	N/A
Extreme Precipitation	2	1	1	3
Sea Level Rise	1	1	1	2

Wildfire	1	1	1	2
Flooding	N/A	N/A	N/A	N/A
Drought	N/A	N/A	N/A	N/A
Snowpack Reduction	N/A	N/A	N/A	N/A
Air Quality Degradation	1	1	1	2

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.
The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.
The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores include implementation of climate risk reduction measures.

6.4. Climate Risk Reduction Measures

7. Health and Equity Details

7.1. CalEnviroScreen 4.0 Scores

The maximum CalEnviroScreen score is 100. A high score (i.e., greater than 50) reflects a higher pollution burden compared to other census tracts in the state.

Indicator	Result for Project Census Tract
Exposure Indicators	—
AQ-Ozone	3.12
AQ-PM	39.2
AQ-DPM	77.5
Drinking Water	4.21
Lead Risk Housing	61.6
Pesticides	0.00
Toxic Releases	61.3
Traffic	31.2
Effect Indicators	—
CleanUp Sites	65.0
Groundwater	97.0

Haz Waste Facilities/Generators	93.0
Impaired Water Bodies	90.1
Solid Waste	9.67
Sensitive Population	—
Asthma	81.1
Cardio-vascular	46.8
Low Birth Weights	44.5
Socioeconomic Factor Indicators	—
Education	26.4
Housing	55.1
Linguistic	6.27
Poverty	35.6
Unemployment	49.9

7.2. Healthy Places Index Scores

The maximum Health Places Index score is 100. A high score (i.e., greater than 50) reflects healthier community conditions compared to other census tracts in the state.

Indicator	Result for Project Census Tract
Economic	—
Above Poverty	59.38662903
Employed	93.82779417
Median HI	46.50327217
Education	—
Bachelor's or higher	88.88746311
High school enrollment	100
Preschool enrollment	74.06646991
Transportation	—
Auto Access	13.06300526
Active commuting	96.25304761

Social	—
2-parent households	16.38650071
Voting	76.22225074
Neighborhood	—
Alcohol availability	4.516874118
Park access	81.35506224
Retail density	82.84357757
Supermarket access	74.27178237
Tree canopy	46.11831131
Housing	—
Homeownership	47.94045939
Housing habitability	50.7121776
Low-inc homeowner severe housing cost burden	19.67150006
Low-inc renter severe housing cost burden	46.67008854
Uncrowded housing	60.05389452
Health Outcomes	—
Insured adults	80.68779674
Arthritis	60.6
Asthma ER Admissions	13.2
High Blood Pressure	62.1
Cancer (excluding skin)	38.7
Asthma	61.7
Coronary Heart Disease	79.3
Chronic Obstructive Pulmonary Disease	88.0
Diagnosed Diabetes	75.2
Life Expectancy at Birth	71.4
Cognitively Disabled	85.7
Physically Disabled	84.3

Heart Attack ER Admissions	59.6
Mental Health Not Good	82.3
Chronic Kidney Disease	64.9
Obesity	68.7
Pedestrian Injuries	19.6
Physical Health Not Good	84.3
Stroke	70.4
Health Risk Behaviors	—
Binge Drinking	38.6
Current Smoker	87.1
No Leisure Time for Physical Activity	83.8
Climate Change Exposures	—
Wildfire Risk	0.0
SLR Inundation Area	0.0
Children	92.8
Elderly	43.9
English Speaking	71.2
Foreign-born	47.0
Outdoor Workers	90.9
Climate Change Adaptive Capacity	—
Impervious Surface Cover	28.0
Traffic Density	29.2
Traffic Access	87.4
Other Indices	—
Hardship	21.5
Other Decision Support	—
2016 Voting	71.1

7.3. Overall Health & Equity Scores

Metric	Result for Project Census Tract
CalEnviroScreen 4.0 Score for Project Location (a)	54.0
Healthy Places Index Score for Project Location (b)	82.0
Project Located in a Designated Disadvantaged Community (Senate Bill 535)	No
Project Located in a Low-Income Community (Assembly Bill 1550)	Yes
Project Located in a Community Air Protection Program Community (Assembly Bill 617)	No

a: The maximum CalEnviroScreen score is 100. A high score (i.e., greater than 50) reflects a higher pollution burden compared to other census tracts in the state.
b: The maximum Health Places Index score is 100. A high score (i.e., greater than 50) reflects healthier community conditions compared to other census tracts in the state.

7.4. Health & Equity Measures

No Health & Equity Measures selected.

7.5. Evaluation Scorecard

Health & Equity Evaluation Scorecard not completed.

7.6. Health & Equity Custom Measures

No Health & Equity Custom Measures created.

8. User Changes to Default Data

Screen	Justification
Characteristics: Utility Information	East Bay Community Energy is the primary electricity provider. Intensity factors adjusted for consistency with Berkeley Housing Element methodology.
Land Use	Based on SPA SP growth assumption of 3,250 multi-family units and 8,125 new residents. Default acreage and building square footage. Landscape area set to zero and accounted for in Outdoor Water Use input.
Operations: Hearths	No woodstoves or fireplaces
Operations: Energy Use	Assume 60% of development will not include natural gas pursuant to BMC Section 12.80 (Natural gas ban).
Operations: Water and Waste Water	EBMUD Wastewater treatment plant 100 percent aerobic. Outdoor water use estimated using default rate from v2022 - 41,075 gals/unit/year for multifamily units.

Appendix E

Greenhouse Gas Emissions Modeling Results

Berkeley Corridors Updated Detailed Report

Table of Contents

1. Basic Project Information
   1.1. Basic Project Information
   1.2. Land Use Types
   1.3. User-Selected Emission Reduction Measures by Emissions Sector
2. Emissions Summary
   2.1. Construction Emissions Compared Against Thresholds
   2.2. Construction Emissions by Year
      2.2.1. Total Construction Emissions by Year, Unmitigated
      2.2.2. Onsite Construction Emissions by Year, Unmitigated
      2.2.3. Offsite Construction Emissions by Year, Unmitigated
   2.3. Operations Emissions Compared Against Thresholds
   2.4. Operations Emissions by Sector, Unmitigated
3. Construction Emissions Details
   3.1. Demolition (2026)
      3.1.1. Onsite - Unmitigated
      3.1.2. Offsite - Unmitigated
   3.2. Site Preparation (2026)
      3.2.1. Onsite - Unmitigated

3.2.2. Offsite - Unmitigated
3.3. Grading (2026)
3.3.1. Onsite - Unmitigated
3.3.2. Offsite - Unmitigated
3.4. Grading (2027)
3.4.1. Onsite - Unmitigated
3.4.2. Offsite - Unmitigated
3.5. Building Construction (2027)
3.5.1. Onsite - Unmitigated
3.5.2. Offsite - Unmitigated
3.6. Building Construction (2028)
3.6.1. Onsite - Unmitigated
3.6.2. Offsite - Unmitigated
3.7. Building Construction (2029)
3.7.1. Onsite - Unmitigated
3.7.2. Offsite - Unmitigated
3.8. Paving (2030)
3.8.1. Onsite - Unmitigated
3.8.2. Offsite - Unmitigated
3.9. Architectural Coating (2028)
3.9.1. Onsite - Unmitigated
3.9.2. Offsite - Unmitigated

3.10. Architectural Coating (2029)

3.10.1. Onsite - Unmitigated

3.10.2. Offsite - Unmitigated

3.11. Architectural Coating (2030)

3.11.1. Onsite - Unmitigated

3.11.2. Offsite - Unmitigated

4. Operations Emissions Details

4.1. Mobile Emissions by Land Use

4.1.1. Unmitigated

4.2. Energy

4.2.1. Electricity Emissions By Land Use - Unmitigated

4.2.3. Natural Gas Emissions By Land Use - Unmitigated

4.3. Area Emissions by Source

4.3.1. Unmitigated

4.4. Water Emissions by Land Use

4.4.1. Unmitigated

4.5. Waste Emissions by Land Use

4.5.1. Unmitigated

4.6. Refrigerant Emissions by Land Use

4.6.1. Unmitigated

4.7. Offroad Emissions By Equipment Type

4.7.1. Unmitigated

4.8. Stationary Emissions By Equipment Type

4.8.1. Unmitigated

4.9. User Defined Emissions By Equipment Type

4.9.1. Unmitigated

4.10. Soil Carbon Accumulation By Vegetation Type

4.10.1. Soil Carbon Accumulation By Vegetation Type - Unmitigated

4.10.2. Above and Belowground Carbon Accumulation by Land Use Type - Unmitigated

4.10.3. Avoided and Sequestered Emissions by Species - Unmitigated

5. Activity Data

5.1. Construction Schedule

5.2. Off-Road Equipment

5.2.1. Unmitigated

5.3. Construction Vehicles

5.3.1. Unmitigated

5.4. Vehicles

5.4.1. Construction Vehicle Control Strategies

5.5. Architectural Coatings

5.6. Dust Mitigation

5.6.1. Construction Earthmoving Activities

5.6.2. Construction Earthmoving Control Strategies

5.7. Construction Paving

5.8. Construction Electricity Consumption and Emissions Factors

5.9. Operational Mobile Sources

5.9.1. Unmitigated

5.10. Operational Area Sources

5.10.1. Hearths

5.10.2. Architectural Coatings

5.10.3. Landscape Equipment

5.11. Operational Energy Consumption

5.11.1. Unmitigated

5.12. Operational Water and Wastewater Consumption

5.12.1. Unmitigated

5.13. Operational Waste Generation

5.13.1. Unmitigated

5.14. Operational Refrigeration and Air Conditioning Equipment

5.14.1. Unmitigated

5.15. Operational Off-Road Equipment

5.15.1. Unmitigated

5.16. Stationary Sources

5.16.1. Emergency Generators and Fire Pumps

5.16.2. Process Boilers

5.17. User Defined

5.18. Vegetation

5.18.1. Land Use Change

5.18.1.1. Unmitigated
5.18.1. Biomass Cover Type
5.18.1.1. Unmitigated
5.18.2. Sequestration
5.18.2.1. Unmitigated
6. Climate Risk Detailed Report
6.1. Climate Risk Summary
6.2. Initial Climate Risk Scores
6.3. Adjusted Climate Risk Scores
6.4. Climate Risk Reduction Measures
7. Health and Equity Details
7.1. CalEnviroScreen 4.0 Scores
7.2. Healthy Places Index Scores
7.3. Overall Health & Equity Scores
7.4. Health & Equity Measures
7.5. Evaluation Scorecard
7.6. Health & Equity Custom Measures
8. User Changes to Default Data
8.1. Justifications
8.3. Land Use
8.4. Construction
8.4.1. Construction Phases

8.4.8. Architectural Coatings

8.5. Operations

8.5.2. Area Sources

8.5.2.1. Hearths

8.5.3. Energy Usage

1. Basic Project Information

1.1. Basic Project Information

Data Field	Value
Project Name	Berkeley Corridors Updated
Construction Start Date	6/1/2026
Operational Year	2031
Lead Agency	—
Land Use Scale	Plan/community
Analysis Level for Defaults	County
Windspeed (m/s)	3.90000
Precipitation (days)	44.2000
Location	Shattuck Ave., Berkeley, CA, USA
County	Alameda
City	Berkeley
Air District	Bay Area AQMD
Air Basin	San Francisco Bay Area
TAZ	1529
EDFZ	1
Electric Utility	Pacific Gas & Electric Company
Gas Utility	Pacific Gas & Electric

Data Field	Value
App Version	2022.1.1.45

1.2. Land Use Types

Land Use Subtype	Size	Unit	Lot Acreage	Building Area (sq ft)	Landscape Area (sq ft)	Special Landscape Area (sq ft)	Population	Description
Apartments Mid Rise	4,399.00	Dwelling Unit	27.7000	1,206,612	0.00000	0.00000	10,998.0	—

1.3. User-Selected Emission Reduction Measures by Emissions Sector

No measures selected

2. Emissions Summary

2.1. Construction Emissions Compared Against Thresholds

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Un/Mit.	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	51.8847	49.9995	30.3524	141.227	0.11221	1.24251	34.7322	35.2219	1.14311	10.1364	11.2795	—	45,442.9	45,442.9	1.09890	2.87054	124.472	46,190.6
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	51.5288	49.5702	32.5126	126.916	0.11221	1.12137	34.7322	35.2219	1.03166	8.27994	8.74446	—	43,207.0	43,207.0	1.26649	3.07363	3.22393	44,157.9

Un/Mit.	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	34.6046	33.9436	22.2973	83.1713	0.07986	0.43706	22.6678	23.0140	0.40210	5.40252	5.73103	—	29,601.2	29,601.2	0.81792	2.07263	36.4457	30,275.7
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	6.31533	6.19470	4.06926	15.1788	0.01457	0.07976	4.13687	4.20005	0.07338	0.98596	1.04591	—	4,900.81	4,900.81	0.13542	0.34315	6.03400	5,012.48

2.2. Construction Emissions by Year

2.2.1. Total Construction Emissions by Year, Unmitigated

Includes both onsite and offsite emissions.

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Year	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily - Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2026	3.79949	3.19622	29.2010	29.4419	0.06093	1.24251	19.8017	21.0442	1.14311	10.1364	11.2795	—	6,768.48	6,768.48	0.27075	0.06002	0.62484	6,793.76
2027	12.2198	10.4783	29.4115	126.146	0.11048	0.51075	29.4957	30.0064	0.48382	7.05253	7.53634	—	40,874.9	40,874.9	1.02005	2.87054	119.626	41,875.5
2028	51.8847	49.9995	30.3524	141.227	0.11221	0.48977	34.7322	35.2219	0.46452	8.27994	8.74446	—	45,442.9	45,442.9	1.09890	1.99910	124.472	46,190.6
2029	51.2503	49.2947	28.2520	134.844	0.11221	0.46265	34.7322	35.1948	0.35249	8.27994	8.63243	—	44,596.0	44,596.0	1.01179	1.99910	112.121	45,329.1
2030	39.6796	39.6310	6.30295	19.2579	0.01395	0.22035	5.23646	5.24742	0.20272	1.22742	1.23751	—	5,149.93	5,149.93	0.07524	0.04298	12.7341	5,177.36
Daily - Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Year	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
2026	3.68717	3.10163	27.2815	28.2064	0.06093	1.12137	15.7319	16.8533	1.03166	4.37956	5.41123	—	6,756.21	6,756.21	0.27164	0.06046	0.01623	6,781.03
2027	11.9896	10.1782	32.3229	114.061	0.11048	1.04307	29.4957	30.0064	0.95962	7.05253	7.53634	—	38,978.4	38,978.4	1.22953	2.94037	3.10816	39,888.5
2028	51.5288	49.5702	32.5126	126.916	0.11221	0.48977	34.7322	35.2219	0.46452	8.27994	8.74446	—	43,207.0	43,207.0	1.26649	3.07363	3.22393	44,157.9
2029	50.0817	49.1167	31.4765	120.832	0.11221	0.46265	34.7322	35.1948	0.35249	8.27994	8.63243	—	42,399.1	42,399.1	1.17938	2.97946	2.90153	43,319.4
2030	39.6237	39.5612	1.99273	16.9466	0.00173	0.01097	5.23646	5.24742	0.01009	1.22742	1.23751	—	4,788.33	4,788.33	0.10317	0.20637	0.32945	4,852.74
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2026	1.41346	1.18853	10.5723	10.5949	0.02040	0.43706	4.72144	5.15850	0.40210	1.69373	2.09583	—	2,254.92	2,254.92	0.09039	0.02022	0.10000	2,263.31
2027	8.37428	7.09505	22.0709	78.4028	0.07833	0.37107	20.3289	20.7000	0.35117	4.86168	5.21285	—	27,575.7	27,575.7	0.81792	2.01739	36.3564	28,233.7
2028	24.9190	23.6440	22.2973	83.1713	0.07986	0.34622	22.6678	23.0140	0.32851	5.40252	5.73103	—	29,601.2	29,601.2	0.81641	2.07263	36.4457	30,275.7
2029	34.6046	33.9436	18.5352	73.8158	0.06869	0.28381	21.1411	21.4250	0.21644	5.03070	5.24714	—	26,509.6	26,509.6	0.67963	1.84057	30.1533	27,105.3
2030	8.10514	8.07393	1.34658	4.87870	0.00245	0.03541	1.04368	1.07910	0.03258	0.24416	0.27674	—	1,215.89	1,215.89	0.03038	0.01066	1.12636	1,220.95
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2026	0.25796	0.21691	1.92944	1.93357	0.00372	0.07976	0.86166	0.94143	0.07338	0.30911	0.38249	—	373.328	373.328	0.01497	0.00335	0.01656	374.716
2027	1.52831	1.29485	4.02794	14.3085	0.01430	0.06772	3.71003	3.77775	0.06409	0.88726	0.95134	—	4,565.47	4,565.47	0.13542	0.33400	6.01922	4,674.41
2028	4.54772	4.31502	4.06926	15.1788	0.01457	0.06319	4.13687	4.20005	0.05995	0.98596	1.04591	—	4,900.81	4,900.81	0.13517	0.34315	6.03400	5,012.48
2029	6.31533	6.19470	3.38267	13.4714	0.01254	0.05180	3.85826	3.91006	0.03950	0.91810	0.95760	—	4,388.97	4,388.97	0.11252	0.30473	4.99223	4,487.59
2030	1.47919	1.47349	0.24575	0.89036	0.00045	0.00646	0.19047	0.19694	0.00595	0.04456	0.05051	—	201.305	201.305	0.00503	0.00176	0.18648	202.143

2.2.2. Onsite Construction Emissions by Year, Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Year	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily - Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2026	3.74146	3.14387	29.1635	28.8082	0.06093	1.24251	19.6570	20.8995	1.14311	10.1024	11.2456	—	6,598.58	6,598.58	0.26767	0.05353	0.00000	6,621.22
2027	1.23076	1.02988	9.39093	12.9379	0.02340	0.33657	0.00000	0.33657	0.30965	0.00000	0.30965	—	2,397.08	2,397.08	0.09724	0.01945	0.00000	2,405.30
2028	39.2175	39.0016	9.73309	14.0536	0.02513	0.31559	0.00000	0.31559	0.29035	0.00000	0.29035	—	2,530.97	2,530.97	0.10267	0.02053	0.00000	2,539.66
2029	39.1801	38.9703	9.37581	14.0134	0.02512	0.28848	0.00000	0.28848	0.26540	0.00000	0.26540	—	2,530.34	2,530.34	0.10264	0.02053	0.00000	2,539.03
2030	38.0219	38.0012	6.28020	9.89564	0.01395	0.22035	0.00000	0.22035	0.20272	0.00000	0.20272	—	1,510.63	1,510.63	0.06128	0.01226	0.00000	1,515.81
Daily - Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2026	3.62261	3.04400	27.2253	27.5707	0.06093	1.12137	15.5666	16.6880	1.03166	4.34081	5.37247	—	6,598.58	6,598.58	0.26767	0.05353	0.00000	6,621.22
2027	3.50534	2.94546	25.5801	27.2816	0.06093	1.04307	15.5666	16.6097	0.95962	4.34081	5.30043	—	6,598.08	6,598.08	0.26765	0.05353	0.00000	6,620.72
2028	39.2175	39.0016	9.73309	14.0536	0.02513	0.31559	0.00000	0.31559	0.29035	0.00000	0.29035	—	2,530.97	2,530.97	0.10267	0.02053	0.00000	2,539.66
2029	39.1801	38.9703	9.37581	14.0134	0.02512	0.28848	0.00000	0.28848	0.26540	0.00000	0.26540	—	2,530.34	2,530.34	0.10264	0.02053	0.00000	2,539.03
2030	38.0219	38.0012	0.78473	1.10719	0.00173	0.01097	0.00000	0.01097	0.01009	0.00000	0.01009	—	133.513	133.513	0.00542	0.00108	0.00000	133.971
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2026	1.38972	1.16735	10.5538	10.3667	0.02040	0.43706	4.66194	5.09901	0.40210	1.67981	2.08191	—	2,196.15	2,196.15	0.08909	0.01782	0.00000	2,203.69
2027	0.90582	0.75812	6.89790	9.40981	0.01715	0.24871	0.18278	0.43148	0.22881	0.05097	0.27978	—	1,761.53	1,761.53	0.07146	0.01429	0.00000	1,767.57
2028	16.7762	16.6283	6.73087	9.73312	0.01748	0.22147	0.00000	0.22147	0.20376	0.00000	0.20376	—	1,773.08	1,773.08	0.07192	0.01438	0.00000	1,779.16
2029	27.8661	27.7359	5.80694	8.67147	0.01552	0.17747	0.00000	0.17747	0.16327	0.00000	0.16327	—	1,558.79	1,558.79	0.06323	0.01265	0.00000	1,564.14
2030	7.77941	7.75680	1.10451	1.71429	0.00245	0.03541	0.00000	0.03541	0.03258	0.00000	0.03258	—	254.540	254.540	0.01033	0.00207	0.00000	255.414
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Year	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
2026	0.25362	0.21304	1.92607	1.89193	0.00372	0.07976	0.85080	0.93057	0.07338	0.30657	0.37995	—	363.598	363.598	0.01475	0.00295	0.00000	364.845
2027	0.16531	0.13836	1.25887	1.71729	0.00313	0.04539	0.03336	0.07875	0.04176	0.00930	0.05106	—	291.641	291.641	0.01183	0.00237	0.00000	292.641
2028	3.06166	3.03466	1.22838	1.77629	0.00319	0.04042	0.00000	0.04042	0.03719	0.00000	0.03719	—	293.553	293.553	0.01191	0.00238	0.00000	294.560
2029	5.08557	5.06179	1.05977	1.58254	0.00283	0.03239	0.00000	0.03239	0.02980	0.00000	0.02980	—	258.076	258.076	0.01047	0.00209	0.00000	258.962
2030	1.41974	1.41562	0.20157	0.31286	0.00045	0.00646	0.00000	0.00646	0.00595	0.00000	0.00595	—	42.1420	42.1420	0.00171	0.00034	0.00000	42.2866

2.2.3. Offsite Construction Emissions by Year, Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Year	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily - Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2026	0.06632	0.05983	0.04286	0.72422	0.00000	0.00000	0.16533	0.16533	0.00000	0.03875	0.03875	—	169.906	169.906	0.00309	0.00648	0.62484	172.539
2027	10.9891	9.44839	20.0206	113.208	0.08709	0.17417	29.4957	29.6699	0.17417	7.05253	7.22670	—	38,477.9	38,477.9	0.92281	2.85110	119.626	39,470.2
2028	12.6672	10.9979	20.6193	127.174	0.08709	0.17417	34.7322	34.9063	0.17417	8.27994	8.45411	—	42,912.0	42,912.0	0.99624	1.97857	124.472	43,651.0
2029	12.0703	10.3243	18.8762	120.831	0.08709	0.17417	34.7322	34.9063	0.08709	8.27994	8.36703	—	42,065.7	42,065.7	0.90915	1.97857	112.121	42,790.1
2030	1.65768	1.62975	0.96081	18.1507	0.00000	0.00000	5.23646	5.23646	0.00000	1.22742	1.22742	—	5,016.42	5,016.42	0.06983	0.04190	12.7341	5,043.39
Daily - Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2026	0.06455	0.05763	0.05626	0.63572	0.00000	0.00000	0.16533	0.16533	0.00000	0.03875	0.03875	—	157.631	157.631	0.00397	0.00692	0.01623	159.809
2027	10.7588	9.14835	22.9319	101.123	0.08709	0.17417	29.4957	29.6699	0.17417	7.05253	7.22670	—	36,581.4	36,581.4	1.13229	2.92092	3.10816	37,483.2
2028	12.3113	10.5686	22.7795	112.862	0.08709	0.17417	34.7322	34.9063	0.17417	8.27994	8.45411	—	40,676.1	40,676.1	1.16382	3.05309	3.22393	41,618.2
2029	10.9016	10.1464	22.1007	106.819	0.08709	0.17417	34.7322	34.9063	0.08709	8.27994	8.36703	—	39,868.7	39,868.7	1.07673	2.95893	2.90153	40,780.3

Year	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
2030	1.60182	1.55993	1.20800	15.8395	0.00000	0.00000	5.23646	5.23646	0.00000	1.22742	1.22742	—	4,654.82	4,654.82	0.09776	0.20529	0.32945	4,718.77
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2026	0.02374	0.02118	0.01844	0.22816	0.00000	0.00000	0.05949	0.05949	0.00000	0.01392	0.01392	—	58.7731	58.7731	0.00131	0.00240	0.10000	59.6211
2027	7.46846	6.33693	15.1730	68.9930	0.06118	0.12236	20.1461	20.2685	0.12236	4.81071	4.93307	—	25,814.2	25,814.2	0.74647	2.00310	36.3564	26,466.1
2028	8.14280	7.01571	15.5664	73.4382	0.06237	0.12475	22.6678	22.7925	0.12475	5.40252	5.52727	—	27,828.1	27,828.1	0.74448	2.05825	36.4457	28,496.5
2029	6.73843	6.20770	12.7283	65.1443	0.05317	0.10634	21.1411	21.2475	0.05317	5.03070	5.08387	—	24,950.9	24,950.9	0.61640	1.82792	30.1533	25,541.1
2030	0.32572	0.31713	0.24207	3.16441	0.00000	0.00000	1.04368	1.04368	0.00000	0.24416	0.24416	—	961.353	961.353	0.02005	0.00859	1.12636	965.541
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2026	0.00433	0.00387	0.00336	0.04164	0.00000	0.00000	0.01086	0.01086	0.00000	0.00254	0.00254	—	9.73056	9.73056	0.00022	0.00040	0.01656	9.87096
2027	1.36299	1.15649	2.76908	12.5912	0.01117	0.02233	3.67667	3.69900	0.02233	0.87795	0.90029	—	4,273.83	4,273.83	0.12359	0.33164	6.01922	4,381.76
2028	1.48606	1.28037	2.84088	13.4025	0.01138	0.02277	4.13687	4.15963	0.02277	0.98596	1.00873	—	4,607.26	4,607.26	0.12326	0.34077	6.03400	4,717.92
2029	1.22976	1.13291	2.32291	11.8888	0.00970	0.01941	3.85826	3.87767	0.00970	0.91810	0.92781	—	4,130.90	4,130.90	0.10205	0.30263	4.99223	4,228.63
2030	0.05944	0.05788	0.04418	0.57750	0.00000	0.00000	0.19047	0.19047	0.00000	0.04456	0.04456	—	159.163	159.163	0.00332	0.00142	0.18648	159.856

2.3. Operations Emissions Compared Against Thresholds

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Un/Mit.	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	115.450	110.589	40.2234	584.525	0.85108	0.90965	78.9809	79.8905	0.85095	20.0289	20.8799	1,853.59	97,838.5	99,692.1	192.053	4.96959	174.194	106,149

Un/Mit.	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	90.7877	86.8420	43.4756	342.148	0.79551	0.79733	78.9809	79.7782	0.76602	20.0289	20.7949	1,853.59	92,645.7	94,499.2	192.742	5.35491	12.9344	100,926
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	98.2186	93.9829	40.5355	430.572	0.76628	0.82894	72.9502	73.7791	0.78567	18.5072	19.2929	1,853.59	89,439.6	91,293.1	192.236	4.99130	76.5970	97,663.0
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	17.9249	17.1519	7.39772	78.5793	0.13985	0.15128	13.3134	13.4647	0.14338	3.37757	3.52096	306.883	14,807.7	15,114.6	31.8268	0.82637	12.6815	16,169.2

2.4. Operations Emissions by Sector, Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Sector	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	61.7335	58.3155	33.9905	332.300	0.81529	0.48056	78.9809	79.4614	0.44927	20.0289	20.4782	—	83,250.5	83,250.5	4.10079	4.04980	165.553	84,725.4
Area	53.2589	52.0445	2.32154	250.560	0.01083	0.11285	—	0.11285	0.08544	—	0.08544	0.00000	667.272	667.272	0.02789	0.00554	—	669.620
Energy	0.45772	0.22886	3.91140	1.66443	0.02497	0.31624	—	0.31624	0.31624	—	0.31624	—	13,355.4	13,355.4	1.79680	0.17388	—	13,452.1
Water	—	—	—	—	—	—	—	—	—	—	—	299.339	565.340	864.679	30.7853	0.74036	—	1,854.94
Waste	—	—	—	—	—	—	—	—	—	—	—	1,554.25	0.00000	1,554.25	155.342	0.00000	—	5,437.80
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	8.64176	8.64176
Total	115.450	110.589	40.2234	584.525	0.85108	0.90965	78.9809	79.8905	0.85095	20.0289	20.8799	1,853.59	97,838.5	99,692.1	192.053	4.96959	174.194	106,149

Sector	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	59.8530	56.1362	39.5642	340.483	0.77054	0.48109	78.9809	79.4620	0.44978	20.0289	20.4787	—	78,724.9	78,724.9	4.81818	4.44066	4.29261	80,173.0
Area	30.4770	30.4770	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000
Energy	0.45772	0.22886	3.91140	1.66443	0.02497	0.31624	—	0.31624	0.31624	—	0.31624	—	13,355.4	13,355.4	1.79680	0.17388	—	13,452.1
Water	—	—	—	—	—	—	—	—	—	—	—	299.339	565.340	864.679	30.7853	0.74036	—	1,854.94
Waste	—	—	—	—	—	—	—	—	—	—	—	1,554.25	0.00000	1,554.25	155.342	0.00000	—	5,437.80
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	8.64176	8.64176
Total	90.7877	86.8420	43.4756	342.148	0.79551	0.79733	78.9809	79.7782	0.76602	20.0289	20.7949	1,853.59	92,645.7	94,499.2	192.742	5.35491	12.9344	100,926
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	56.0490	52.6410	35.4792	305.343	0.73598	0.45704	72.9502	73.4072	0.42729	18.5072	18.9345	—	75,189.7	75,189.7	4.29787	4.07432	67.9553	76,579.3
Area	41.7119	41.1130	1.14487	123.564	0.00534	0.05565	—	0.05565	0.04213	—	0.04213	0.00000	329.066	329.066	0.01375	0.00273	—	330.223
Energy	0.45772	0.22886	3.91140	1.66443	0.02497	0.31624	—	0.31624	0.31624	—	0.31624	—	13,355.4	13,355.4	1.79680	0.17388	—	13,452.1
Water	—	—	—	—	—	—	—	—	—	—	—	299.339	565.340	864.679	30.7853	0.74036	—	1,854.94
Waste	—	—	—	—	—	—	—	—	—	—	—	1,554.25	0.00000	1,554.25	155.342	0.00000	—	5,437.80
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	8.64176	8.64176
Total	98.2186	93.9829	40.5355	430.572	0.76628	0.82894	72.9502	73.7791	0.78567	18.5072	19.2929	1,853.59	89,439.6	91,293.1	192.236	4.99130	76.5970	97,663.0
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	10.2289	9.60699	6.47495	55.7251	0.13432	0.08341	13.3134	13.3968	0.07798	3.37757	3.45555	—	12,448.5	12,448.5	0.71156	0.67455	11.2508	12,678.6
Area	7.61242	7.50312	0.20894	22.5504	0.00097	0.01016	—	0.01016	0.00769	—	0.00769	0.00000	54.4806	54.4806	0.00228	0.00045	—	54.6722
Energy	0.08353	0.04177	0.71383	0.30376	0.00456	0.05771	—	0.05771	0.05771	—	0.05771	—	2,211.14	2,211.14	0.29748	0.02879	—	2,227.16

Sector	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Water	—	—	—	—	—	—	—	—	—	—	—	49.5591	93.5984	143.157	5.09686	0.12258	—	307.106
Waste	—	—	—	—	—	—	—	—	—	—	—	257.324	0.00000	257.324	25.7186	0.00000	—	900.289
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1.43074	1.43074
Total	17.9249	17.1519	7.39772	78.5793	0.13985	0.15128	13.3134	13.4647	0.14338	3.37757	3.52096	306.883	14,807.7	15,114.6	31.8268	0.82637	12.6815	16,169.2

3. Construction Emissions Details

3.1. Demolition (2026)

3.1.1. Onsite - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	2.72490	2.28674	20.6515	19.0056	0.03253	0.84309	—	0.84309	0.77564	—	0.77564	—	3,426.59	3,426.59	0.13900	0.02780	—	3,438.35
Demolition	—	—	—	—	—	—	0.00000	0.00000	—	0.00000	0.00000	—	—	—	—	—	—	—
Onsite truck	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.37327	0.31325	2.82898	2.60350	0.00446	0.11549	—	0.11549	0.10625	—	0.10625	—	469.396	469.396	0.01904	0.00381	—	471.007
Demolition	—	—	—	—	—	—	0.00000	0.00000	—	0.00000	0.00000	—	—	—	—	—	—	—
Onsite truck	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.06812	0.05717	0.51629	0.47514	0.00081	0.02108	—	0.02108	0.01939	—	0.01939	—	77.7139	77.7139	0.00315	0.00063	—	77.9806
Demolition	—	—	—	—	—	—	0.00000	0.00000	—	0.00000	0.00000	—	—	—	—	—	—	—
Onsite truck	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000

3.1.2. Offsite - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.04974	0.04488	0.03214	0.54316	0.00000	0.00000	0.12400	0.12400	0.00000	0.02906	0.02906	—	127.429	127.429	0.00231	0.00486	0.46863	129.404
Vendor	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Hauling	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00659	0.00588	0.00511	0.06329	0.00000	0.00000	0.01650	0.01650	0.00000	0.00386	0.00386	—	16.3043	16.3043	0.00036	0.00067	0.02774	16.5395
Vendor	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Hauling	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00120	0.00107	0.00093	0.01155	0.00000	0.00000	0.00301	0.00301	0.00000	0.00070	0.00070	—	2.69936	2.69936	0.00006	0.00011	0.00459	2.73831
Vendor	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Hauling	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000

3.2. Site Preparation (2026)

3.2.1. Onsite - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	3.74146	3.14387	29.1635	28.8082	0.04890	1.24251	—	1.24251	1.14311	—	1.14311	—	5,297.94	5,297.94	0.21491	0.04298	—	5,316.12

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Dust From Material Movement	—	—	—	—	—	—	19.6570	19.6570	—	10.1024	10.1024	—	—	—	—	—	—	—
Onsite truck	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.30752	0.25840	2.39700	2.36780	0.00402	0.10212	—	0.10212	0.09395	—	0.09395	—	435.447	435.447	0.01766	0.00353	—	436.941
Dust From Material Movement	—	—	—	—	—	—	1.61564	1.61564	—	0.83034	0.83034	—	—	—	—	—	—	—
Onsite truck	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.05612	0.04716	0.43745	0.43212	0.00073	0.01864	—	0.01864	0.01715	—	0.01715	—	72.0932	72.0932	0.00292	0.00058	—	72.3406
Dust From Material Movement	—	—	—	—	—	—	0.29486	0.29486	—	0.15154	0.15154	—	—	—	—	—	—	—

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite truck	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000

3.2.2. Offsite - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.05803	0.05235	0.03750	0.63369	0.00000	0.00000	0.14466	0.14466	0.00000	0.03391	0.03391	—	148.667	148.667	0.00270	0.00567	0.54674	150.972
Vendor	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Hauling	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00461	0.00411	0.00358	0.04431	0.00000	0.00000	0.01155	0.01155	0.00000	0.00270	0.00270	—	11.4130	11.4130	0.00025	0.00047	0.01942	11.5777
Vendor	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Hauling	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00084	0.00075	0.00065	0.00809	0.00000	0.00000	0.00211	0.00211	0.00000	0.00049	0.00049	—	1.88955	1.88955	0.00004	0.00008	0.00321	1.91682
Vendor	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Hauling	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000

3.3. Grading (2026)

3.3.1. Onsite - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	3.62261	3.04400	27.2253	27.5707	0.06093	1.12137	—	1.12137	1.03166	—	1.03166	—	6,598.58	6,598.58	0.26767	0.05353	—	6,621.22
Dust From Material Movement	—	—	—	—	—	—	15.5666	15.5666	—	4.34081	4.34081	—	—	—	—	—	—	—
Onsite truck	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	3.62261	3.04400	27.2253	27.5707	0.06093	1.12137	—	1.12137	1.03166	—	1.03166	—	6,598.58	6,598.58	0.26767	0.05353	—	6,621.22
Dust From Material Movement	—	—	—	—	—	—	15.5666	15.5666	—	4.34081	4.34081	—	—	—	—	—	—	—
Onsite truck	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.70893	0.59570	5.32784	5.39543	0.01192	0.21945	—	0.21945	0.20189	—	0.20189	—	1,291.31	1,291.31	0.05238	0.01048	—	1,295.74
Dust From Material Movement	—	—	—	—	—	—	3.04630	3.04630	—	0.84947	0.84947	—	—	—	—	—	—	—
Onsite truck	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.12938	0.10871	0.97233	0.98467	0.00218	0.04005	—	0.04005	0.03685	—	0.03685	—	213.791	213.791	0.00867	0.00173	—	214.524
Dust From Material Movement	—	—	—	—	—	—	0.55595	0.55595	—	0.15503	0.15503	—	—	—	—	—	—	—
Onsite truck	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000

3.3.2. Offsite - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Worker	0.06632	0.05983	0.04286	0.72422	0.00000	0.00000	0.16533	0.16533	0.00000	0.03875	0.03875	—	169.906	169.906	0.00309	0.00648	0.62484	172.539
Vendor	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Hauling	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.06455	0.05763	0.05626	0.63572	0.00000	0.00000	0.16533	0.16533	0.00000	0.03875	0.03875	—	157.631	157.631	0.00397	0.00692	0.01623	159.809
Vendor	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Hauling	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01255	0.01119	0.00974	0.12056	0.00000	0.00000	0.03144	0.03144	0.00000	0.00735	0.00735	—	31.0558	31.0558	0.00069	0.00127	0.05284	31.5039
Vendor	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Hauling	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00229	0.00204	0.00178	0.02200	0.00000	0.00000	0.00574	0.00574	0.00000	0.00134	0.00134	—	5.14164	5.14164	0.00011	0.00021	0.00875	5.21583
Vendor	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Hauling	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000

3.4. Grading (2027)

3.4.1. Onsite - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	3.50534	2.94546	25.5801	27.2816	0.06093	1.04307	—	1.04307	0.95962	—	0.95962	—	6,598.08	6,598.08	0.26765	0.05353	—	6,620.72
Dust From Material Movement	—	—	—	—	—	—	15.5666	15.5666	—	4.34081	4.34081	—	—	—	—	—	—	—
Onsite truck	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.04116	0.03458	0.30035	0.32033	0.00072	0.01225	—	0.01225	0.01127	—	0.01127	—	77.4725	77.4725	0.00314	0.00063	—	77.7384
Dust From Material Movement	—	—	—	—	—	—	0.18278	0.18278	—	0.05097	0.05097	—	—	—	—	—	—	—
Onsite truck	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.00751	0.00631	0.05481	0.05846	0.00013	0.00224	—	0.00224	0.00206	—	0.00206	—	12.8265	12.8265	0.00052	0.00010	—	12.8705

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Dust From Material Movement	—	—	—	—	—	—	0.03336	0.03336	—	0.00930	0.00930	—	—	—	—	—	—	—
Onsite truck	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000

3.4.2. Offsite - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.06235	0.05542	0.05022	0.59803	0.00000	0.00000	0.16533	0.16533	0.00000	0.03875	0.03875	—	154.722	154.722	0.00397	0.00692	0.01468	156.899
Vendor	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Hauling	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00072	0.00064	0.00051	0.00681	0.00000	0.00000	0.00189	0.00189	0.00000	0.00044	0.00044	—	1.82900	1.82900	0.00004	0.00008	0.00287	1.85558
Vendor	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Hauling	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00013	0.00012	0.00009	0.00124	0.00000	0.00000	0.00034	0.00034	0.00000	0.00008	0.00008	—	0.30281	0.30281	0.00001	0.00001	0.00047	0.30721

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Vendor	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Hauling	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000

3.5. Building Construction (2027)

3.5.1. Onsite - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.23076	1.02988	9.39093	12.9379	0.02340	0.33657	—	0.33657	0.30965	—	0.30965	—	2,397.08	2,397.08	0.09724	0.01945	—	2,405.30
Onsite truck	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.23076	1.02988	9.39093	12.9379	0.02340	0.33657	—	0.33657	0.30965	—	0.30965	—	2,397.08	2,397.08	0.09724	0.01945	—	2,405.30
Onsite truck	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Off-Road Equipment	0.86466	0.72353	6.59754	9.08948	0.01644	0.23646	—	0.23646	0.21754	—	0.21754	—	1,684.05	1,684.05	0.06831	0.01366	—	1,689.83
Onsite truck	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.15780	0.13204	1.20405	1.65883	0.00300	0.04315	—	0.04315	0.03970	—	0.03970	—	278.814	278.814	0.01131	0.00226	—	279.771
Onsite truck	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000

3.5.2. Offsite - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	10.0830	9.05651	5.90035	106.967	0.00000	0.00000	26.1823	26.1823	0.00000	6.13708	6.13708	—	26,409.3	26,409.3	0.41896	1.02645	89.4894	26,815.2
Vendor	0.90610	0.39188	14.1203	6.24112	0.08709	0.17417	3.31342	3.48759	0.17417	0.91544	1.08961	—	12,068.5	12,068.5	0.50385	1.82465	30.1368	12,655.0
Hauling	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	9.87348	8.77720	7.95325	94.7058	0.00000	0.00000	26.1823	26.1823	0.00000	6.13708	6.13708	—	24,502.5	24,502.5	0.62844	1.09628	2.32485	24,847.2
Vendor	0.88537	0.37115	14.9787	6.41736	0.08709	0.17417	3.31342	3.48759	0.17417	0.91544	1.08961	—	12,078.9	12,078.9	0.50385	1.82465	0.78331	12,636.0
Hauling	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	6.83844	6.06826	4.86638	64.5433	0.00000	0.00000	17.8721	17.8721	0.00000	4.18104	4.18104	—	17,330.6	17,330.6	0.39245	0.72113	27.1672	17,582.4
Vendor	0.62929	0.26803	10.3061	4.44293	0.06118	0.12236	2.27217	2.39453	0.12236	0.62922	0.75159	—	8,481.76	8,481.76	0.35398	1.28189	9.18637	8,881.80
Hauling	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	1.24802	1.10746	0.88811	11.7792	0.00000	0.00000	3.26166	3.26166	0.00000	0.76304	0.76304	—	2,869.27	2,869.27	0.06497	0.11939	4.49783	2,910.97
Vendor	0.11485	0.04892	1.88087	0.81083	0.01117	0.02233	0.41467	0.43700	0.02233	0.11483	0.13716	—	1,404.25	1,404.25	0.05861	0.21223	1.52091	1,470.48
Hauling	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000

3.6. Building Construction (2028)

3.6.1. Onsite - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.18481	0.99143	8.92495	12.9352	0.02340	0.30024	—	0.30024	0.27622	—	0.27622	—	2,397.46	2,397.46	0.09725	0.01945	—	2,405.68
Onsite truck	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Off-Road Equipment	1.18481	0.99143	8.92495	12.9352	0.02340	0.30024	—	0.30024	0.27622	—	0.27622	—	2,397.46	2,397.46	0.09725	0.01945	—	2,405.68
Onsite truck	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.84861	0.71011	6.39243	9.26478	0.01676	0.21504	—	0.21504	0.19784	—	0.19784	—	1,717.16	1,717.16	0.06966	0.01393	—	1,723.05
Onsite truck	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.15487	0.12959	1.16662	1.69082	0.00306	0.03925	—	0.03925	0.03611	—	0.03611	—	284.296	284.296	0.01153	0.00231	—	285.271
Onsite truck	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000

3.6.2. Offsite - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	9.87348	8.84703	5.83052	100.948	0.00000	0.00000	26.1823	26.1823	0.00000	6.13708	6.13708	—	25,940.8	25,940.8	0.41896	0.20948	80.3769	26,094.1
Vendor	0.81902	0.38152	13.6226	6.03585	0.08709	0.17417	3.31342	3.48759	0.17417	0.91544	1.08961	—	11,783.0	11,783.0	0.49348	1.72719	28.0197	12,338.1
Hauling	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	9.59417	8.49789	6.99662	88.8753	0.00000	0.00000	26.1823	26.1823	0.00000	6.13708	6.13708	—	24,068.8	24,068.8	0.55861	1.09628	2.07952	24,411.5
Vendor	0.79828	0.37115	14.3836	6.21209	0.08709	0.17417	3.31342	3.48759	0.17417	0.91544	1.08961	—	11,793.5	11,793.5	0.49348	1.73756	0.72851	12,324.4
Hauling	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	6.77173	6.03654	4.91125	61.8258	0.00000	0.00000	18.2206	18.2206	0.00000	4.26257	4.26257	—	17,355.9	17,355.9	0.35009	0.73519	24.8519	17,608.6
Vendor	0.57919	0.27326	10.0809	4.38253	0.06237	0.12475	2.31648	2.44122	0.12475	0.64149	0.76624	—	8,442.63	8,442.63	0.35345	1.23709	8.68761	8,828.81
Hauling	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	1.23584	1.10167	0.89630	11.2832	0.00000	0.00000	3.32525	3.32525	0.00000	0.77792	0.77792	—	2,873.46	2,873.46	0.05796	0.12172	4.11451	2,915.30
Vendor	0.10570	0.04987	1.83976	0.79981	0.01138	0.02277	0.42276	0.44552	0.02277	0.11707	0.13984	—	1,397.77	1,397.77	0.05852	0.20481	1.43833	1,461.71
Hauling	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000

3.7. Building Construction (2029)

3.7.1. Onsite - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Off-Road Equipment	1.15336	0.96514	8.58166	12.9012	0.02340	0.27564	—	0.27564	0.25359	—	0.25359	—	2,396.83	2,396.83	0.09723	0.01945	—	2,405.06
Onsite truck	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.15336	0.96514	8.58166	12.9012	0.02340	0.27564	—	0.27564	0.25359	—	0.25359	—	2,396.83	2,396.83	0.09723	0.01945	—	2,405.06
Onsite truck	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.70421	0.58928	5.23968	7.87707	0.01428	0.16830	—	0.16830	0.15483	—	0.15483	—	1,463.43	1,463.43	0.05936	0.01187	—	1,468.45
Onsite truck	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.12852	0.10754	0.95624	1.43757	0.00261	0.03071	—	0.03071	0.02826	—	0.02826	—	242.287	242.287	0.00983	0.00197	—	243.119
Onsite truck	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000

3.7.2. Offsite - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	9.38469	8.35824	4.87389	95.8160	0.00000	0.00000	26.1823	26.1823	0.00000	6.13708	6.13708	—	25,499.0	25,499.0	0.41896	0.20948	71.8485	25,643.7
Vendor	0.80865	0.29443	13.0276	5.85131	0.08709	0.17417	3.31342	3.48759	0.08709	0.91544	1.00253	—	11,466.9	11,466.9	0.40640	1.72719	25.9027	12,017.6
Hauling	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	8.42807	8.21859	6.92680	84.0014	0.00000	0.00000	26.1823	26.1823	0.00000	6.13708	6.13708	—	23,659.3	23,659.3	0.55861	1.02645	1.85755	23,981.0
Vendor	0.78792	0.28406	13.7885	6.01718	0.08709	0.17417	3.31342	3.48759	0.08709	0.91544	1.00253	—	11,477.5	11,477.5	0.40640	1.72719	0.67247	12,003.1
Hauling	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	5.06064	4.89010	3.64519	49.8560	0.00000	0.00000	15.5323	15.5323	0.00000	3.63366	3.63366	—	14,543.9	14,543.9	0.29844	0.62672	18.9026	14,757.1
Vendor	0.49374	0.17344	8.23019	3.62326	0.05317	0.10634	1.97470	2.08104	0.05317	0.54685	0.60002	—	7,004.00	7,004.00	0.24813	1.05457	6.82796	7,331.29
Hauling	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.92357	0.89244	0.66525	9.09872	0.00000	0.00000	2.83464	2.83464	0.00000	0.66314	0.66314	—	2,407.92	2,407.92	0.04941	0.10376	3.12955	2,443.20
Vendor	0.09011	0.03165	1.50201	0.66124	0.00970	0.01941	0.36038	0.37979	0.00970	0.09980	0.10950	—	1,159.59	1,159.59	0.04108	0.17460	1.13045	1,213.78
Hauling	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000

3.8. Paving (2030)

3.8.1. Onsite - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.76655	0.64411	6.28020	9.89564	0.01395	0.22035	—	0.22035	0.20272	—	0.20272	—	1,510.63	1,510.63	0.06128	0.01226	—	1,515.81
Paving	0.00000	0.00000	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.11551	0.09706	0.94633	1.49112	0.00210	0.03320	—	0.03320	0.03055	—	0.03055	—	227.628	227.628	0.00923	0.00185	—	228.410
Paving	0.00000	0.00000	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.02108	0.01771	0.17271	0.27213	0.00038	0.00606	—	0.00606	0.00557	—	0.00557	—	37.6865	37.6865	0.00153	0.00031	—	37.8158
Paving	0.00000	0.00000	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000

3.8.2. Offsite - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.03925	0.03859	0.02275	0.42980	0.00000	0.00000	0.12400	0.12400	0.00000	0.02906	0.02906	—	118.787	118.787	0.00165	0.00099	0.30154	119.426
Vendor	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Hauling	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00567	0.00552	0.00421	0.05504	0.00000	0.00000	0.01815	0.01815	0.00000	0.00425	0.00425	—	16.7221	16.7221	0.00035	0.00015	0.01959	16.7949
Vendor	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Hauling	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00103	0.00101	0.00077	0.01005	0.00000	0.00000	0.00331	0.00331	0.00000	0.00078	0.00078	—	2.76853	2.76853	0.00006	0.00002	0.00324	2.78059
Vendor	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Hauling	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000

3.9. Architectural Coating (2028)

3.9.1. Onsite - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.12985	0.10731	0.80814	1.11833	0.00173	0.01536	—	0.01536	0.01413	—	0.01413	—	133.517	133.517	0.00542	0.00108	—	133.975
Architectural Coatings	37.9029	37.9029	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.12985	0.10731	0.80814	1.11833	0.00173	0.01536	—	0.01536	0.01413	—	0.01413	—	133.517	133.517	0.00542	0.00108	—	133.975
Architectural Coatings	37.9029	37.9029	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.05438	0.04494	0.33844	0.46834	0.00072	0.00643	—	0.00643	0.00592	—	0.00592	—	55.9152	55.9152	0.00227	0.00045	—	56.1070
Architectural Coatings	15.8732	15.8732	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite truck	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.00992	0.00820	0.06177	0.08547	0.00013	0.00117	—	0.00117	0.00108	—	0.00108	—	9.25739	9.25739	0.00038	0.00008	—	9.28916
Architectural Coatings	2.89686	2.89686	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000

3.9.2. Offsite - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	1.97470	1.76941	1.16610	20.1897	0.00000	0.00000	5.23646	5.23646	0.00000	1.22742	1.22742	—	5,188.16	5,188.16	0.08379	0.04190	16.0754	5,218.82
Vendor	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Hauling	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	1.91883	1.69958	1.39932	17.7751	0.00000	0.00000	5.23646	5.23646	0.00000	1.22742	1.22742	—	4,813.75	4,813.75	0.11172	0.21926	0.41590	4,882.30
Vendor	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Hauling	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.79189	0.70591	0.57432	7.22990	0.00000	0.00000	2.13071	2.13071	0.00000	0.49846	0.49846	—	2,029.59	2,029.59	0.04094	0.08597	2.90618	2,059.14
Vendor	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Hauling	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.14452	0.12883	0.10481	1.31946	0.00000	0.00000	0.38885	0.38885	0.00000	0.09097	0.09097	—	336.023	336.023	0.00678	0.01423	0.48115	340.915
Vendor	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Hauling	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000

3.10. Architectural Coating (2029)

3.10.1. Onsite - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.12385	0.10236	0.79416	1.11216	0.00173	0.01284	—	0.01284	0.01181	—	0.01181	—	133.510	133.510	0.00542	0.00108	—	133.968
Architectural Coatings	37.9029	37.9029	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.12385	0.10236	0.79416	1.11216	0.00173	0.01284	—	0.01284	0.01181	—	0.01181	—	133.510	133.510	0.00542	0.00108	—	133.968
Architectural Coatings	37.9029	37.9029	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.08847	0.07311	0.56725	0.79440	0.00123	0.00917	—	0.00917	0.00844	—	0.00844	—	95.3641	95.3641	0.00387	0.00077	—	95.6913
Architectural Coatings	27.0735	27.0735	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01614	0.01334	0.10352	0.14498	0.00022	0.00167	—	0.00167	0.00154	—	0.00154	—	15.7886	15.7886	0.00064	0.00013	—	15.8428
Architectural Coatings	4.94091	4.94091	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000

3.10.2. Offsite - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	1.87694	1.67165	0.97478	19.1632	0.00000	0.00000	5.23646	5.23646	0.00000	1.22742	1.22742	—	5,099.80	5,099.80	0.08379	0.04190	14.3697	5,128.75
Vendor	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Hauling	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	1.68561	1.64372	1.38536	16.8003	0.00000	0.00000	5.23646	5.23646	0.00000	1.22742	1.22742	—	4,731.87	4,731.87	0.11172	0.20529	0.37151	4,796.21
Vendor	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Hauling	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	1.18406	1.14416	0.85288	11.6650	0.00000	0.00000	3.63416	3.63416	0.00000	0.85018	0.85018	—	3,402.91	3,402.91	0.06983	0.14664	4.42273	3,452.78
Vendor	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Hauling	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.21609	0.20881	0.15565	2.12887	0.00000	0.00000	0.66323	0.66323	0.00000	0.15516	0.15516	—	563.391	563.391	0.01156	0.02428	0.73223	571.646
Vendor	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Hauling	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000

3.11. Architectural Coating (2030)

3.11.1. Onsite - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.11905	0.09839	0.78473	1.10719	0.00173	0.01097	—	0.01097	0.01009	—	0.01009	—	133.513	133.513	0.00542	0.00108	—	133.971
Architectural Coatings	37.9029	37.9029	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.11905	0.09839	0.78473	1.10719	0.00173	0.01097	—	0.01097	0.01009	—	0.01009	—	133.513	133.513	0.00542	0.00108	—	133.971
Architectural Coatings	37.9029	37.9029	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Off-Road Equipment	0.02400	0.01983	0.15817	0.22317	0.00035	0.00221	—	0.00221	0.00203	—	0.00203	—	26.9116	26.9116	0.00109	0.00022	—	27.0039
Architectural Coatings	7.63991	7.63991	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.00438	0.00362	0.02887	0.04073	0.00006	0.00040	—	0.00040	0.00037	—	0.00037	—	4.45552	4.45552	0.00018	0.00004	—	4.47081
Architectural Coatings	1.39428	1.39428	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000

3.11.2. Offsite - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	1.65768	1.62975	0.96081	18.1507	0.00000	0.00000	5.23646	5.23646	0.00000	1.22742	1.22742	—	5,016.42	5,016.42	0.06983	0.04190	12.7341	5,043.39
Vendor	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Hauling	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	1.60182	1.55993	1.20800	15.8395	0.00000	0.00000	5.23646	5.23646	0.00000	1.22742	1.22742	—	4,654.82	4,654.82	0.09776	0.20529	0.32945	4,718.77
Vendor	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Hauling	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.32006	0.31161	0.23786	3.10937	0.00000	0.00000	1.02553	1.02553	0.00000	0.23992	0.23992	—	944.630	944.630	0.01970	0.00844	1.10677	948.746
Vendor	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Hauling	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.05841	0.05687	0.04341	0.56746	0.00000	0.00000	0.18716	0.18716	0.00000	0.04378	0.04378	—	156.394	156.394	0.00326	0.00140	0.18324	157.076
Vendor	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Hauling	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000

4. Operations Emissions Details

4.1. Mobile Emissions by Land Use

4.1.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Apartments Mid Rise	61.7335	58.3155	33.9905	332.300	0.81529	0.48056	78.9809	79.4614	0.44927	20.0289	20.4782	—	83,250.5	83,250.5	4.10079	4.04980	165.553	84,725.4
Total	61.7335	58.3155	33.9905	332.300	0.81529	0.48056	78.9809	79.4614	0.44927	20.0289	20.4782	—	83,250.5	83,250.5	4.10079	4.04980	165.553	84,725.4
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Apartments Mid Rise	59.8530	56.1362	39.5642	340.483	0.77054	0.48109	78.9809	79.4620	0.44978	20.0289	20.4787	—	78,724.9	78,724.9	4.81818	4.44066	4.29261	80,173.0
Total	59.8530	56.1362	39.5642	340.483	0.77054	0.48109	78.9809	79.4620	0.44978	20.0289	20.4787	—	78,724.9	78,724.9	4.81818	4.44066	4.29261	80,173.0
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Apartments Mid Rise	10.2289	9.60699	6.47495	55.7251	0.13432	0.08341	13.3134	13.3968	0.07798	3.37757	3.45555	—	12,448.5	12,448.5	0.71156	0.67455	11.2508	12,678.6
Total	10.2289	9.60699	6.47495	55.7251	0.13432	0.08341	13.3134	13.3968	0.07798	3.37757	3.45555	—	12,448.5	12,448.5	0.71156	0.67455	11.2508	12,678.6

4.2. Energy

4.2.1. Electricity Emissions By Land Use - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Apartments Mid Rise	—	—	—	—	—	—	—	—	—	—	—	—	8,390.57	8,390.57	1.35741	0.16453	—	8,473.53
Total	—	—	—	—	—	—	—	—	—	—	—	—	8,390.57	8,390.57	1.35741	0.16453	—	8,473.53
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Apartments Mid Rise	—	—	—	—	—	—	—	—	—	—	—	—	8,390.57	8,390.57	1.35741	0.16453	—	8,473.53
Total	—	—	—	—	—	—	—	—	—	—	—	—	8,390.57	8,390.57	1.35741	0.16453	—	8,473.53
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Apartments Mid Rise	—	—	—	—	—	—	—	—	—	—	—	—	1,389.15	1,389.15	0.22473	0.02724	—	1,402.89
Total	—	—	—	—	—	—	—	—	—	—	—	—	1,389.15	1,389.15	0.22473	0.02724	—	1,402.89

4.2.3. Natural Gas Emissions By Land Use - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Apartments Mid Rise	0.45772	0.22886	3.91140	1.66443	0.02497	0.31624	—	0.31624	0.31624	—	0.31624	—	4,964.84	4,964.84	0.43939	0.00935	—	4,978.61
Total	0.45772	0.22886	3.91140	1.66443	0.02497	0.31624	—	0.31624	0.31624	—	0.31624	—	4,964.84	4,964.84	0.43939	0.00935	—	4,978.61
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Apartments Mid Rise	0.45772	0.22886	3.91140	1.66443	0.02497	0.31624	—	0.31624	0.31624	—	0.31624	—	4,964.84	4,964.84	0.43939	0.00935	—	4,978.61
Total	0.45772	0.22886	3.91140	1.66443	0.02497	0.31624	—	0.31624	0.31624	—	0.31624	—	4,964.84	4,964.84	0.43939	0.00935	—	4,978.61
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Apartments Mid Rise	0.08353	0.04177	0.71383	0.30376	0.00456	0.05771	—	0.05771	0.05771	—	0.05771	—	821.987	821.987	0.07275	0.00155	—	824.266
Total	0.08353	0.04177	0.71383	0.30376	0.00456	0.05771	—	0.05771	0.05771	—	0.05771	—	821.987	821.987	0.07275	0.00155	—	824.266

4.3. Area Emissions by Source

4.3.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Source	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Hearths	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000

Source	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Consumer Products	25.8215	25.8215	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	4.65549	4.65549	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	22.7819	21.5675	2.32154	250.560	0.01083	0.11285	—	0.11285	0.08544	—	0.08544	—	667.272	667.272	0.02789	0.00554	—	669.620
Total	53.2589	52.0445	2.32154	250.560	0.01083	0.11285	—	0.11285	0.08544	—	0.08544	0.00000	667.272	667.272	0.02789	0.00554	—	669.620
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Hearths	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000
Consumer Products	25.8215	25.8215	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	4.65549	4.65549	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	30.4770	30.4770	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Hearths	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000
Consumer Products	4.71242	4.71242	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	0.84963	0.84963	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Source	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Landscape Equipment	2.05037	1.94107	0.20894	22.5504	0.00097	0.01016	—	0.01016	0.00769	—	0.00769	—	54.4806	54.4806	0.00228	0.00045	—	54.6722
Total	7.61242	7.50312	0.20894	22.5504	0.00097	0.01016	—	0.01016	0.00769	—	0.00769	0.00000	54.4806	54.4806	0.00228	0.00045	—	54.6722

4.4. Water Emissions by Land Use

4.4.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Apartments Mid Rise	—	—	—	—	—	—	—	—	—	—	—	299.339	565.340	864.679	30.7853	0.74036	—	1,854.94
Total	—	—	—	—	—	—	—	—	—	—	—	299.339	565.340	864.679	30.7853	0.74036	—	1,854.94
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Apartments Mid Rise	—	—	—	—	—	—	—	—	—	—	—	299.339	565.340	864.679	30.7853	0.74036	—	1,854.94
Total	—	—	—	—	—	—	—	—	—	—	—	299.339	565.340	864.679	30.7853	0.74036	—	1,854.94
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Apartments Mid Rise	—	—	—	—	—	—	—	—	—	—	—	49.5591	93.5984	143.157	5.09686	0.12258	—	307.106
Total	—	—	—	—	—	—	—	—	—	—	—	49.5591	93.5984	143.157	5.09686	0.12258	—	307.106

4.5. Waste Emissions by Land Use

4.5.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Apartments Mid Rise	—	—	—	—	—	—	—	—	—	—	—	1,554.25	0.00000	1,554.25	155.342	0.00000	—	5,437.80
Total	—	—	—	—	—	—	—	—	—	—	—	1,554.25	0.00000	1,554.25	155.342	0.00000	—	5,437.80
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Apartments Mid Rise	—	—	—	—	—	—	—	—	—	—	—	1,554.25	0.00000	1,554.25	155.342	0.00000	—	5,437.80
Total	—	—	—	—	—	—	—	—	—	—	—	1,554.25	0.00000	1,554.25	155.342	0.00000	—	5,437.80
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Apartments Mid Rise	—	—	—	—	—	—	—	—	—	—	—	257.324	0.00000	257.324	25.7186	0.00000	—	900.289
Total	—	—	—	—	—	—	—	—	—	—	—	257.324	0.00000	257.324	25.7186	0.00000	—	900.289

4.6. Refrigerant Emissions by Land Use

4.6.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Apartments Mid Rise	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	8.64176	8.64176
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	8.64176	8.64176
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Apartments Mid Rise	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	8.64176	8.64176
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	8.64176	8.64176
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Apartments Mid Rise	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1.43074	1.43074
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1.43074	1.43074

4.7. Offroad Emissions By Equipment Type

4.7.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.8. Stationary Emissions By Equipment Type

4.8.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.9. User Defined Emissions By Equipment Type

4.9.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Equipment Type	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10. Soil Carbon Accumulation By Vegetation Type

4.10.1. Soil Carbon Accumulation By Vegetation Type - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Vegetation	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.2. Above and Belowground Carbon Accumulation by Land Use Type - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.3. Avoided and Sequestered Emissions by Species - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Species	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Species	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

5. Activity Data

5.1. Construction Schedule

Phase Name	Phase Type	Start Date	End Date	Days Per Week	Work Days per Phase	Phase Description
Demolition	Demolition	6/1/2026	8/10/2026	5.00000	50.0000	—
Site Preparation	Site Preparation	8/11/2026	9/22/2026	5.00000	30.0000	—
Grading	Grading	9/23/2026	1/6/2027	5.00000	75.0000	—
Building Construction	Building Construction	1/7/2027	11/8/2029	5.00000	740.000	—
Paving	Paving	4/16/2030	7/1/2030	5.00000	55.0000	—
Architectural Coating	Architectural Coating	6/1/2028	4/13/2030	5.00000	487.000	—

5.2. Off-Road Equipment

5.2.1. Unmitigated

Phase Name	Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor
Demolition	Rubber Tired Dozers	Diesel	Average	2.00000	8.00000	367.000	0.40000
Demolition	Excavators	Diesel	Average	3.00000	8.00000	36.0000	0.38000
Demolition	Concrete/Industrial Saws	Diesel	Average	1.000000	8.00000	33.0000	0.73000
Site Preparation	Rubber Tired Dozers	Diesel	Average	3.00000	8.00000	367.000	0.40000
Site Preparation	Tractors/Loaders/ Backhoes	Diesel	Average	4.00000	8.00000	84.0000	0.37000
Grading	Graders	Diesel	Average	1.000000	8.00000	148.000	0.41000
Grading	Excavators	Diesel	Average	2.00000	8.00000	36.0000	0.38000

Phase Name	Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor
Grading	Tractors/Loaders/ Backhoes	Diesel	Average	2.00000	8.00000	84.0000	0.37000
Grading	Scrapers	Diesel	Average	2.00000	8.00000	423.000	0.48000
Grading	Rubber Tired Dozers	Diesel	Average	1.000000	8.00000	367.000	0.40000
Building Construction	Forklifts	Diesel	Average	3.00000	8.00000	82.0000	0.20000
Building Construction	Generator Sets	Diesel	Average	1.000000	8.00000	14.0000	0.74000
Building Construction	Cranes	Diesel	Average	1.000000	7.00000	367.000	0.29000
Building Construction	Welders	Diesel	Average	1.000000	8.00000	46.0000	0.45000
Building Construction	Tractors/Loaders/ Backhoes	Diesel	Average	3.00000	7.00000	84.0000	0.37000
Paving	Pavers	Diesel	Average	2.00000	8.00000	81.0000	0.42000
Paving	Paving Equipment	Diesel	Average	2.00000	8.00000	89.0000	0.36000
Paving	Rollers	Diesel	Average	2.00000	8.00000	36.0000	0.38000
Architectural Coating	Air Compressors	Diesel	Average	1.000000	6.00000	37.0000	0.48000

5.3. Construction Vehicles

5.3.1. Unmitigated

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
Demolition	Worker	15.0000	11.7000	LDA,LDT1,LDT2
Demolition	Vendor	—	8.40000	HHDT,MHDT
Demolition	Hauling	0.00000	20.0000	HHDT

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
Demolition	Onsite truck	—	—	HHDT
Site Preparation	Worker	17.5000	11.7000	LDA,LDT1,LDT2
Site Preparation	Vendor	—	8.40000	HHDT,MHDT
Site Preparation	Hauling	0.00000	20.0000	HHDT
Site Preparation	Onsite truck	—	—	HHDT
Grading	Worker	20.0000	11.7000	LDA,LDT1,LDT2
Grading	Vendor	—	8.40000	HHDT,MHDT
Grading	Hauling	0.00000	20.0000	HHDT
Grading	Onsite truck	—	—	HHDT
Building Construction	Worker	3,167.28	11.7000	LDA,LDT1,LDT2
Building Construction	Vendor	470.253	8.40000	HHDT,MHDT
Building Construction	Hauling	0.00000	20.0000	HHDT
Building Construction	Onsite truck	—	—	HHDT
Paving	Worker	15.0000	11.7000	LDA,LDT1,LDT2
Paving	Vendor	—	8.40000	HHDT,MHDT
Paving	Hauling	0.00000	20.0000	HHDT
Paving	Onsite truck	—	—	HHDT
Architectural Coating	Worker	633.456	11.7000	LDA,LDT1,LDT2
Architectural Coating	Vendor	—	8.40000	HHDT,MHDT
Architectural Coating	Hauling	0.00000	20.0000	HHDT
Architectural Coating	Onsite truck	—	—	HHDT

5.4. Vehicles

5.4.1. Construction Vehicle Control Strategies

Non-applicable. No control strategies activated by user.

5.5. Architectural Coatings

Phase Name	Residential Interior Area Coated (sq ft)	Residential Exterior Area Coated (sq ft)	Non-Residential Interior Area Coated (sq ft)	Non-Residential Exterior Area Coated (sq ft)	Parking Area Coated (sq ft)
Architectural Coating	2,985,984	995,328	0.00000	0.00000	—

5.6. Dust Mitigation

5.6.1. Construction Earthmoving Activities

Phase Name	Material Imported (cy)	Material Exported (cy)	Acres Graded (acres)	Material Demolished (sq. ft.)	Acres Paved (acres)
Demolition	0.00000	0.00000	0.00000	—	0.00000
Site Preparation	—	—	45.0000	0.00000	0.00000
Grading	—	—	225.000	0.00000	0.00000
Paving	0.00000	0.00000	0.00000	0.00000	—

5.6.2. Construction Earthmoving Control Strategies

Non-applicable. No control strategies activated by user.

5.7. Construction Paving

Phase Name	Land Use	Area Paved (acres)	% Asphalt
Paving	Apartments Mid Rise	—	0%

5.8. Construction Electricity Consumption and Emissions Factors

kWh per Year and Emission Factor (lb/MWh)

Year	kWh per Year	CO2	CH4	N2O
2026	0.00000	203.983	0.03300	0.00400
2027	0.00000	203.983	0.03300	0.00400
2028	0.00000	203.983	0.03300	0.00400
2029	0.00000	203.983	0.03300	0.00400
2030	0.00000	203.983	0.03300	0.00400

5.9. Operational Mobile Sources

5.9.1. Unmitigated

Land Use Type	Trips/Weekday	Trips/Saturday	Trips/Sunday	Trips/Year	VMT/Weekday	VMT/Saturday	VMT/Sunday	VMT/Year
Apartments Mid Rise	23,930.6	21,599.1	17,991.9	8,303,427	111,800	100,908	84,055.4	38,792,305

5.10. Operational Area Sources

5.10.1. Hearths

Land Use	Hearth Type	Unmitigated (number)	Mitigated (number)
Apartments Mid Rise	Wood Fireplaces	0	0
Apartments Mid Rise	Gas Fireplaces	0	0
Apartments Mid Rise	Propane Fireplaces	0	0
Apartments Mid Rise	Electric Fireplaces	0	0
Apartments Mid Rise	No Fireplaces	0	0
Apartments Mid Rise	Conventional Wood Stoves	0	0
Apartments Mid Rise	Catalytic Wood Stoves	0	0
Apartments Mid Rise	Non-Catalytic Wood Stoves	0	0
Apartments Mid Rise	Pellet Wood Stoves	0	0

5.10.2. Architectural Coatings

Residential Interior Area Coated (sq ft)	Residential Exterior Area Coated (sq ft)	Non-Residential Interior Area Coated (sq ft)	Non-Residential Exterior Area Coated (sq ft)	Parking Area Coated (sq ft)
2,443,389	814,463	0.00000	0.00000	—

5.10.3. Landscape Equipment

Season	Unit	Value
Snow Days	day/yr	0.00000
Summer Days	day/yr	180.000

5.11. Operational Energy Consumption

5.11.1. Unmitigated

Electricity (kWh/yr) and CO2 and CH4 and N2O and Natural Gas (kBTU/yr)

Land Use	Electricity (kWh/yr)	CO2	CH4	N2O	Natural Gas (kBTU/yr)
Apartments Mid Rise	15,013,783	203.983	0.0330	0.0040	15,491,643

5.12. Operational Water and Wastewater Consumption

5.12.1. Unmitigated

Land Use	Indoor Water (gal/year)	Outdoor Water (gal/year)
Apartments Mid Rise	156,212,229	0.00000

5.13. Operational Waste Generation

5.13.1. Unmitigated

Land Use	Waste (ton/year)	Cogeneration (kWh/year)
Apartments Mid Rise	2,883.91	0.00000

5.14. Operational Refrigeration and Air Conditioning Equipment

5.14.1. Unmitigated

Land Use	Equipment Type	Refrigerant	GWP	Quantity (kg)	Operations Leak Rate	Service Leak Rate	Times Serviced
Apartments Mid Rise	Average room A/C & Other residential A/C and heat pumps	R-410A	2,088.00	0.00225	2.50000	2.50000	10.00000

Land Use	Equipment Type	Refrigerant	GWP	Quantity (kg)	Operations Leak Rate	Service Leak Rate	Times Serviced
Apartments Mid Rise	Household refrigerators and/or freezers	R-134a	1,430.00	0.11538	0.60000	0.00000	1.000000

5.15. Operational Off-Road Equipment

5.15.1. Unmitigated

5.16. Stationary Sources

5.16.1. Emergency Generators and Fire Pumps

5.16.2. Process Boilers

5.17. User Defined

5.18. Vegetation

5.18.1. Land Use Change

5.18.1.1. Unmitigated

Vegetation Land Use Type	Vegetation Soil Type	Initial Acres	Final Acres

5.18.1. Biomass Cover Type

5.18.1.1. Unmitigated

Biomass Cover Type	Initial Acres	Final Acres

5.18.2. Sequestration

5.18.2.1. Unmitigated

Tree Type	Number	Electricity Saved (kWh/year)	Natural Gas Saved (btu/year)

6. Climate Risk Detailed Report

6.1. Climate Risk Summary

Cal-Adapt midcentury 2040–2059 average projections for four hazards are reported below for your project location. These are under Representation Concentration Pathway (RCP) 8.5 which assumes GHG emissions will continue to rise strongly through 2050 and then plateau around 2100.

Climate Hazard	Result for Project Location	Unit
Temperature and Extreme Heat	7.10000	annual days of extreme heat
Extreme Precipitation	7.50000	annual days with precipitation above 20 mm
Sea Level Rise	—	meters of inundation depth
Wildfire	0.00000	annual hectares burned

Temperature and Extreme Heat data are for grid cell in which your project are located. The projection is based on the 98th historical percentile of daily maximum/minimum temperatures from observed historical data (32 climate model ensemble from Cal-Adapt, 2040–2059 average under RCP 8.5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.

Extreme Precipitation data are for the grid cell in which your project are located. The threshold of 20 mm is equivalent to about ¾ an inch of rain, which would be light to moderate rainfall if received over a full day or heavy rain if received over a period of 2 to 4 hours. Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.

Sea Level Rise data are for the grid cell in which your project are located. The projections are from Radke et al. (2017), as reported in Cal-Adapt (Radke et al., 2017, CEC-500-2017-008), and consider inundation location and depth for the San Francisco Bay, the Sacramento-San Joaquin River Delta and California coast resulting different increments of sea level rise coupled with extreme storm events. Users may select from four scenarios to view the range in potential inundation depth for the grid cell. The four scenarios are: No rise, 0.5 meter, 1.0 meter, 1.41 meters

Wildfire data are for the grid cell in which your project are located. The projections are from UC Davis, as reported in Cal-Adapt (2040–2059 average under RCP 8.5), and consider historical data of climate, vegetation, population density, and large (> 400 ha) fire history. Users may select from four model simulations to view the range in potential wildfire probabilities for the grid cell. The four simulations make different assumptions about expected rainfall and temperature are: Warmer/drier (HadGEM2-ES), Cooler/wetter (CNRM-CM5), Average conditions (CanESM2), Range of different rainfall and temperature possibilities (MIROC5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.

6.2. Initial Climate Risk Scores

Climate Hazard	Exposure Score	Sensitivity Score	Adaptive Capacity Score	Vulnerability Score
Temperature and Extreme Heat	N/A	N/A	N/A	N/A
Extreme Precipitation	2	0	0	N/A
Sea Level Rise	1	0	0	N/A
Wildfire	1	0	0	N/A
Flooding	N/A	N/A	N/A	N/A
Drought	N/A	N/A	N/A	N/A
Snowpack Reduction	N/A	N/A	N/A	N/A
Air Quality Degradation	0	0	0	N/A

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.

The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.

The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores do not include implementation of climate risk reduction measures.

6.3. Adjusted Climate Risk Scores

Climate Hazard	Exposure Score	Sensitivity Score	Adaptive Capacity Score	Vulnerability Score
Temperature and Extreme Heat	N/A	N/A	N/A	N/A
Extreme Precipitation	2	1	1	3
Sea Level Rise	1	1	1	2
Wildfire	1	1	1	2
Flooding	N/A	N/A	N/A	N/A
Drought	N/A	N/A	N/A	N/A
Snowpack Reduction	N/A	N/A	N/A	N/A
Air Quality Degradation	1	1	1	2

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.

The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.

The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores include implementation of climate risk reduction measures.

6.4. Climate Risk Reduction Measures

7. Health and Equity Details

7.1. CalEnviroScreen 4.0 Scores

The maximum CalEnviroScreen score is 100. A high score (i.e., greater than 50) reflects a higher pollution burden compared to other census tracts in the state.

Indicator	Result for Project Census Tract
Exposure Indicators	—

Indicator	Result for Project Census Tract
AQ-Ozone	3.12383
AQ-PM	40.2240
AQ-DPM	61.5806
Drinking Water	4.20882
Lead Risk Housing	17.6055
Pesticides	0.00000
Toxic Releases	58.4521
Traffic	12.3250
Effect Indicators	—
CleanUp Sites	25.9239
Groundwater	80.3420
Haz Waste Facilities/Generators	95.9497
Impaired Water Bodies	0.00000
Solid Waste	0.00000
Sensitive Population	—
Asthma	5.49601
Cardio-vascular	29.6486
Low Birth Weights	90.1591
Socioeconomic Factor Indicators	—
Education	29.6760
Housing	99.4297

Indicator	Result for Project Census Tract
Linguistic	42.8069
Poverty	91.4573
Unemployment	33.5763

7.2. Healthy Places Index Scores

The maximum Health Places Index score is 100. A high score (i.e., greater than 50) reflects healthier community conditions compared to other census tracts in the state.

Indicator	Result for Project Census Tract
Economic	—
Above Poverty	12.61388426
Employed	4.042089054
Median HI	2.335429231
Education	—
Bachelor's or higher	94.63621199
High school enrollment	100
Preschool enrollment	95.7141024
Transportation	—
Auto Access	0.346464776
Active commuting	99.67919928
Social	—
2-parent households	0.230976517
Voting	21.98126524

Indicator	Result for Project Census Tract
Neighborhood	—
Alcohol availability	21.44232003
Park access	81.35506224
Retail density	99.80751957
Supermarket access	94.25125112
Tree canopy	34.80046195
Housing	—
Homeownership	0.757089696
Housing habitability	30.50173232
Low-inc homeowner severe housing cost burden	99.12742205
Low-inc renter severe housing cost burden	17.1435904
Uncrowded housing	46.38778391
Health Outcomes	—
Insured adults	87.86090081
Arthritis	99.0
Asthma ER Admissions	93.2
High Blood Pressure	99.1
Cancer (excluding skin)	98.9
Asthma	37.3
Coronary Heart Disease	98.5
Chronic Obstructive Pulmonary Disease	93.7

Indicator	Result for Project Census Tract
Diagnosed Diabetes	98.4
Life Expectancy at Birth	31.7
Cognitively Disabled	62.4
Physically Disabled	68.4
Heart Attack ER Admissions	90.9
Mental Health Not Good	47.3
Chronic Kidney Disease	99.0
Obesity	92.5
Pedestrian Injuries	90.9
Physical Health Not Good	89.8
Stroke	97.8
Health Risk Behaviors	—
Binge Drinking	35.4
Current Smoker	58.7
No Leisure Time for Physical Activity	70.6
Climate Change Exposures	—
Wildfire Risk	0.0
SLR Inundation Area	0.0
Children	97.0
Elderly	95.0
English Speaking	28.9

Indicator	Result for Project Census Tract
Foreign-born	67.8
Outdoor Workers	87.9
Climate Change Adaptive Capacity	—
Impervious Surface Cover	2.6
Traffic Density	52.1
Traffic Access	87.4
Other Indices	—
Hardship	47.8
Other Decision Support	—
2016 Voting	30.1

7.3. Overall Health & Equity Scores

Metric	Result for Project Census Tract
CalEnviroScreen 4.0 Score for Project Location (a)	36.0000
Healthy Places Index Score for Project Location (b)	31.0000
Project Located in a Designated Disadvantaged Community (Senate Bill 535)	No
Project Located in a Low-Income Community (Assembly Bill 1550)	Yes
Project Located in a Community Air Protection Program Community (Assembly Bill 617)	No

a: The maximum CalEnviroScreen score is 100. A high score (i.e., greater than 50) reflects a higher pollution burden compared to other census tracts in the state.

b: The maximum Health Places Index score is 100. A high score (i.e., greater than 50) reflects healthier community conditions compared to other census tracts in the state.

7.4. Health & Equity Measures

No Health & Equity Measures selected.

7.5. Evaluation Scorecard

Health & Equity Evaluation Scorecard not completed.

7.6. Health & Equity Custom Measures

No Health & Equity Custom Measures created.

8. User Changes to Default Data

8.1. Justifications

Screen	Justification
Land Use	Project would include 4,399 net new units
Operations: Hearths	No fireplaces or woodstoves
Operations: Energy Use	Assumes up to 60 percent of new development would be all-electric and the remainder of units would include natural gas connections.

8.3. Land Use

Model Parameter	Units	Default Value	New Value
Lot Area	acre	115.763	27.7000
Building Area	sq. ft	4,223,040	1,206,612
Landscape Area	sq. ft	—	0.00000
Special Landscape Area	sq. ft	—	0.00000

Model Parameter	Units	Default Value	New Value
Population	people	12,405.0	10,998.0

8.4. Construction

8.4.1. Construction Phases

Phase Type	Phase Name	Model Parameter	Default Value	New Value
Demolition	Demolition	End Date	7/13/2026	8/10/2026
Demolition	Demolition	Work Days per Phase	30.0000	50.0000
Site Preparation	Site Preparation	Start Date	7/14/2026	8/11/2026
Site Preparation	Site Preparation	End Date	8/11/2026	9/22/2026
Site Preparation	Site Preparation	Work Days per Phase	20.0000	30.0000
Grading	Grading	Start Date	8/12/2026	9/23/2026
Grading	Grading	End Date	10/14/2026	1/6/2027
Grading	Grading	Work Days per Phase	45.0000	75.0000
Building Construction	Building Construction	Start Date	10/15/2026	1/7/2027
Building Construction	Building Construction	End Date	6/22/2028	11/8/2029
Building Construction	Building Construction	Work Days per Phase	440.000	740.000
Paving	Paving	Start Date	6/23/2028	4/16/2030
Paving	Paving	End Date	8/11/2028	7/1/2030
Paving	Paving	Work Days per Phase	35.0000	55.0000
Architectural Coating	Architectural Coating	Start Date	8/12/2028	6/1/2028

Phase Type	Phase Name	Model Parameter	Default Value	New Value
Architectural Coating	Architectural Coating	End Date	9/30/2028	4/13/2030
Architectural Coating	Architectural Coating	Work Days per Phase	35.0000	487.000

8.4.8. Architectural Coatings

Phase Name	Model Parameter	Units	Default Value	New Value
Architectural Coating	Residential Exterior VOC	g/L	150.000	100.0000
Architectural Coating	Non-Residential Exterior VOC	g/L	150.000	100.0000
Architectural Coating	Residential Interior Area	sq ft	2,443,389	2,985,984
Architectural Coating	Residential Exterior Area	sq ft	814,463	995,328

8.5. Operations

8.5.2. Area Sources

8.5.2.1. Hearths

Land Use	Model Parameter	Default Value	New Value
Apartments Mid Rise	Gas Fireplaces	2,243	0
Apartments Mid Rise	No Fireplaces	2,156	0
Apartments Mid Rise	Hours/Day	4	0
Apartments Mid Rise	Days/Year	9	0

8.5.3. Energy Usage

Land Use	Model Parameter	Units	Default Value	New Value
Apartments Mid Rise	Electricity	kWh/yr	15,006,972	15,013,783
Apartments Mid Rise	Natural Gas	kBTU/yr	38,729,109	15,491,643
Apartments Mid Rise	Natural Gas (Subject to Title 24)	kBTU/yr	35,991,856	14,396,743
Apartments Mid Rise	Natural Gas (Not Subject to Title 24)	kBTU/yr	2,737,252	1,094,901

ORDINANCE NO. -N.S.

AMENDMENTS TO THE COMMERCIAL DISTRICT CHAPTER (BMC 23.204), SUPPLEMENTAL USE REGULATIONS CHAPTER (23.302), PARKING AND LOADING (23.322), COMMON PERMIT REQUIREMENTS (23.404),GLOSSARY (23.502), AND ZONING MAP TO ENCOURAGE HOUSING ALONG COLLEGE AVENUE, SHATTUCK AVENUE AND SOLANO AVENUE

BE IT ORDAINED by the Council of the City of Berkeley as follows:

Section 1. That the lines “Multi-Unit Residential,” “Mixed-Use Residential,” “Club/Lodge”, “Video Tape/ Disk Rental”, “Medical Practitioners”, “Office, Business and Professional”, “Entertainment Establishment”, “Group Instruction, Under 3,000 sq. ft.”, “Group Instruction, 3,000 sq. ft. or larger”, “Health and Fitness Facility, 7,500 sq. ft. or larger”, “Alternative Fuel Station”, “Gasoline Fuel Stations”, “Dry Cleaning and Laundry Plant”, “Primary Production Manufacturing”, “Semiconductors”, “Mini-storage”, “Warehouse”, “Manufacturing”,” Wholesale Activities”, “ATM, Exterior and Attached to Bank”, “ATM, Interior or Exterior and Not With Bank”, “Drive-in Uses”, within Table 23.204-1 Allowed Uses in the Commercial District within BMC Chapter 23.204.020 are amended to read as follows:

ZC = Zoning Certificate AUP = Administrative Use Permit UP(PH) = Use Permit NP = Not Permitted -- = Permitted with AUP, see 23.204.020(B) [#] = Table Note Permit Requirement * Use-Specific Regulations Apply	**COMMERCIAL DISTRICTS**											**USE-SPECIFIC REGULATIONS**
	C-C	**C-U**	**C-N**	**C-E**	**C-NS**	**C-SA**	**C-T**	**C-SO**	**C-DMU**	**C-W**	**C-AC**	
Multi-Unit Residential	UP(PH)*	UP(PH)*	UP(PH)*	UP(PH)*	UP(PH)*	UP(PH)*	UP(PH)*	UP(PH)*	UP(PH)*	UP(PH)*	UP(PH)*	23.204.060(B)(3) 23.204.080(D)(2) 23.204.090(D)(2) 23.204.120(D)(2) 23.302.070(H)
Mixed-Use Residential	UP(PH)*	UP(PH)*	UP(PH)*	UP(PH)*	UP(PH)*	UP(PH)*	UP(PH)*	UP(PH)*	UP(PH)*	UP(PH)*	UP(PH)*	23.204.060(B)(3) 23.204.080(D)(2) 23.204.090(D)(2) 23.204.120(D)(2) 23.302.070(H) 23.302.070(M)
Club/Lodge	UP(PH)	UP(PH)	UP(PH)	UP(PH)	~~NP~~ UP(PH)	UP(PH)	UP(PH)	~~NP~~ UP(PH)	UP(PH)	UP(PH)	UP(PH)	
Video Tape/Disk Rental	ZC	ZC	ZC	ZC ~~AUP~~	ZC	-	ZC	ZC	ZC	ZC	NP	
Medical Practitioners	ZC	ZC	AUP	UP(PH) ~~NP~~	UP(PH)	ZC	AUP*	UP(PH)	ZC*	ZC	ZC	23.204.040(B); 23.204.110(B)(4); 23.204.130.D.3
Office, Business and Professional	ZC	ZC	AUP*	ZC ~~AUP*~~	ZC*	ZC	ZC*	ZC ~~AUP*~~	ZC*	ZC	ZC	23.204.040(B); 23.204.110.(B)4;

ZC = Zoning Certificate AUP = Administrative Use Permit UP(PH) = Use Permit NP = Not Permitted -- = Permitted with AUP, see 23.204.020(B) [#] = Table Note Permit Requirement * Use-Specific Regulations Apply	**COMMERCIAL DISTRICTS**											**USE-SPECIFIC REGULATIONS**
	C-C	**C-U**	**C-N**	**C-E**	**C-NS**	**C-SA**	**C-T**	**C-SO**	**C-DMU**	**C-W**	**C-AC**	
												23.204.130(D)(3)
Entertainment Establishment	UP(PH)	UP(PH)	UP(PH)	UP(PH) ~~NP~~	UP(PH)	UP(PH)	UP(PH)	UP(PH)	UP(PH)	UP(PH)	UP(PH)	
Group Instruction, ~~Under 3,000 sq. ft.~~	ZC	ZC	ZC	ZC	ZC	ZC	ZC	ZC	ZC	ZC	ZC	
~~Group Instruction, 3,000 sq. ft. or larger~~	~~ZC~~	~~ZC~~	~~AUP~~	~~AUP~~	~~ZC~~	~~ZC~~	~~ZC~~	~~AUP~~	~~ZC~~	~~ZC~~	~~ZC~~	
Health and Fitness Facility, 7,500 sq. ft. or larger	ZC	ZC	AUP	AUP	AUP ~~ZC~~	ZC	ZC	AUP	ZC	ZC	ZC	
Alternative Fuel Station	UP(PH)	UP(PH)	UP(PH)	UP(PH) ~~NP~~	UP(PH)	UP(PH)	NP*	UP(PH)	NP	AUP*	UP(PH)	23.204.110(B)(2); 23.204.110(B)(3)
Gasoline Fuel Stations	UP(PH)	UP(PH)	UP(PH)	NP	NP ~~UP(PH)~~	UP(PH)	NP*	NP ~~UP(PH)~~	NP	UP(PH)*	UP(PH)	23.204.140.B.3
Dry Cleaning and Laundry Plant	UP(PH)	UP(PH)	NP	NP ~~--~~	NP	NP	NP	NP	UP(PH)	NP	NP	

ZC = Zoning Certificate AUP = Administrative Use Permit UP(PH) = Use Permit NP = Not Permitted -- = Permitted with AUP, see 23.204.020(B) [#] = Table Note Permit Requirement * Use-Specific Regulations Apply	**COMMERCIAL DISTRICTS**											**USE-SPECIFIC REGULATIONS**
	C-C	**C-U**	**C-N**	**C-E**	**C-NS**	**C-SA**	**C-T**	**C-SO**	**C-DMU**	**C-W**	**C-AC**	
					~~UP(PH)~~							
Primary Production Manufacturing	--	--	--	NP	NP	--	--	NP ~~--~~	--	UP(PH)	--	
Semiconductors	--	--	--	NP ~~--~~	NP	--	--	NP ~~--~~	--	UP(PH)	--	
Mini-storage	UP(PH)	NP	NP	NP	NP	NP	NP	NP ~~--~~	UP(PH)	NP	NP	
Warehouse	UP(PH)	NP	NP	NP	NP	NP	NP	NP ~~--~~	UP(PH)	NP	NP	
Warehouse-Based Non-Store Retailer	--	--	--	--	--	--	--	--	--	--	--	

ZC = Zoning Certificate AUP = Administrative Use Permit UP(PH) = Use Permit NP = Not Permitted -- = Permitted with AUP, see 23.204.020(B) [#] = Table Note Permit Requirement * Use-Specific Regulations Apply	**COMMERCIAL DISTRICTS**											**USE-SPECIFIC REGULATIONS**
	C-C	**C-U**	**C-N**	**C-E**	**C-NS**	**C-SA**	**C-T**	**C-SO**	**C-DMU**	**C-W**	**C-AC**	
Wholesale Trade	--	--	--	--	--	--	--	--	--	AUP [1]	--	
Manufacturing	AUP	AUP	UP(PH)	AUP ~~UP(PH)~~	AUP ~~NP~~	UP(PH)	AUP	AUP	AUP	AUP	AUP	
Wholesale Activities	AUP*	AUP*	UP(PH)*	AUP ~~UP(PH)*~~	AUP ~~NP~~	AUP*	AUP*	AUP*	AUP*	AUP	AUP	
ATM, Exterior and Attached to Bank	AUP	AUP	AUP	AUP ~~UP(PH)~~	AUP	AUP	AUP	AUP*	AUP	AUP	AUP	23.204.120.B.2
ATM, Interior or Exterior and Not With Bank	UP(PH)	UP(PH)	UP(PH)	UP(PH) ~~NP~~	UP(PH)	UP(PH)	UP(PH)	UP(PH) ~~NP~~	UP(PH)*	AUP	UP(PH)	23.204.130.B.2
Drive-in Uses	UP(PH)	NP	NP	NP	NP ~~UP(PH)~~	UP(PH)	NP	NP ~~UP(PH)~~	NP	NP	UP(PH)	

Section 2. That Table 23.204-2 New Floor Area Permit Requirements within BMC Chapter 23.204.030 is amended to read as follows:

DISTRICT/NEW GROSS FLOOR AREA	PERMIT REQUIRED FOR NEW FLOOR AREA
C-C, C-U	
Less than 5,000 sq. ft.	ZC
5,000 sq. ft. or more	UP(PH)
C-N~~, C-E, C-SO~~ (any amount of new floor area)	UP(PH)
C-NS, C-E, C-SO	
Less than 2,000 sq. ft.	ZC
2,000 sq. ft. or more	UP(PH)
C-SA	
Less than 3,000 sq. ft.	ZC
3,000 sq. ft. or more	UP(PH)
C-T	--
Less than 1,500 sq. ft.	AUP
1,500 sq. ft. or more	UP(PH)
C-DMU	
Less than 10,000 sq. ft.	ZC
10,000 sq. ft. or more	UP(PH)
C-W	
5,000 sq. ft. or more except when an AUP is required below	UP(PH)

DISTRICT/NEW GROSS FLOOR AREA	PERMIT REQUIRED FOR NEW FLOOR AREA
7,500 sq. ft. or less in a building containing only retail uses	AUP
20,000 sq. ft. or less in a building with residential and retail space that is more than 15% and less than 33% of the floor area being created	AUP
C-AC	
New Main Building or New Dwelling Unit	UP(PH)
Addition of 5,000 sq ft or more	UP(PH)

Section 3. That BMC Section 23.204.080 is amended to read as follows

A. *District Purpose.* The purpose of the Elmwood Commercial (C-E) district is to:

1. Implement the General Plan's designation for a Neighborhood ~~community~~ Ccommercial district in this area;

2. Maintain a scale and balance of retail goods and services in the district to compatibly serve the everyday needs of surrounding neighborhoods by:

(a) Providing locations for retail goods and service establishments to serve surrounding neighborhoods;

(b) ~~Preventing~~ Encouraging development ~~which exceeds the amount and intensity of use~~ that is compatible with adjacent residential neighborhoods;

(c) Limiting the space occupied by businesses that generate high traffic and/or parking demands;

(d) Controlling the proliferation of establishments which, if not limited, might expand to displace establishments needed to serve surrounding neighborhoods; and

(e) Permitting other uses which serve this objective; and

3. Ensure that new buildings, alterations, and additions to existing buildings

harmonize with their surroundings.

B. *Land Use Regulations.*

1. *Allowed Land Uses.* See Table 23.204-1: Allowed Uses in the Commercial Districts.

2. *Size Limitations.*

(a) Table 23.204-20 shows land uses subject to size limitations in the C-E district.

Table 23.204-20. C-E LAND USE NUMBER AND SIZE LIMITATIONS

USE	MAXIMUM SIZE	PERMIT REQUIRED
Art/Craft Shops, Gift/Novelty Shops, Jewelry/Watch Shops	1,500 sq. ft.	ZC
Bookstores, Periodical Stands	2,000 sq. ft.	ZC
Photocopy Stores, Printing, Fax, Magnetic Disk Reproduction Services	1,000 sq. ft.	ZC

(b) The ZAB may allow a use to exceed the limitations in Table 23.204-20 with a Use Permit upon finding that:

i. The use will result in the positive enhancement of the purposes of the district; and

ii. The use is likely to experience substantial patronage by surrounding residents as indicated by neighborhood resident support, merchant support, marketing surveys, or other information.

~~3. *Incidental Wholesale Activities.* In the C-E district, wholesale activities incidental to a primary use require permits as follows:~~

~~(a) Six or fewer employees: Zoning Certificate.~~

~~(b) Seven or more employees: AUP.~~

~~(c) New construction: Use Permit.~~

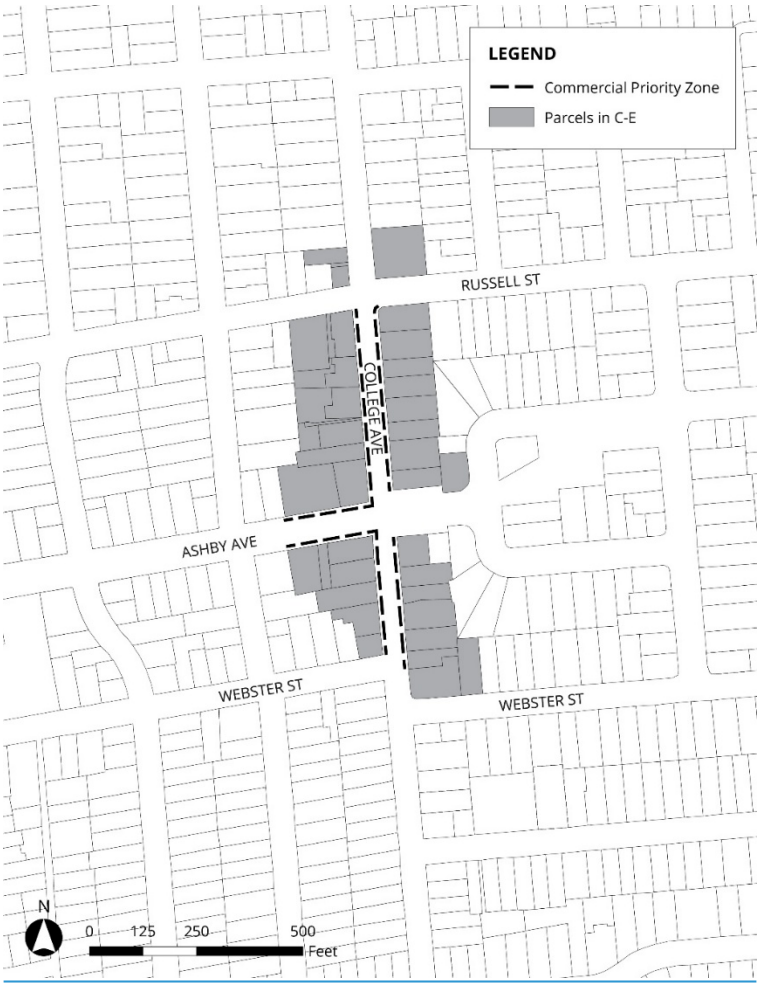
3. *Commercial Priority Zone.* The C-E district shall include a Commercial Priority Zone as shown in Figure 23.204-2

(a) Ground floor commercial uses shall be required along College Avenue and Ashby Avenue frontages within the Commercial Priority Zone.

(b) Residential uses are prohibited on ground floor frontages along College Avenue and Ashby Avenue within the Commercial Priority Zone.

4. *College Avenue.* For mixed-use projects outside of the Commercial Priority Zone, ground floor commercial uses or live/work units shall be required along College Avenue frontages.

Figure 23.204-2 COMMERCIAL PRIORITY ZONE IN THE C-E DISTRICT



C. *Additional Permit Requirements.* See Section 23.204.030 (Additional Permit Requirements).

D. *Development Standards.*

1. *Basic Standards.* See Table 23.204-21: C-E Development Standards. For residential-only projects, also see Table 23.204-22: C-E Setback and Building Separation Standards for Residential-Only Uses and Table 23.204-23: C-E Lot Coverage Standards for Residential-Only Uses.

2. *Mixed-Use Opportunity Areas.* The C-E district shall include Mixed-Use Opportunity Areas, as shown in Figure 23.204-3

(a) Different height and density standards shall apply within these areas, as specified in Table 23.204-21: C-E Development Standards.

(b) The purpose of the Mixed-Use Opportunity Areas is to:

I. Implement Housing Element policy to affirmatively further fair housing on priority commercial and transit corridors.

II. Promote equitable access to housing by producing new affordable housing units.

~~I.~~III. Preserve and support vibrant commercial corridors by adding new residents in commercial districts.

(c) Projects located in Mixed-Use Opportunity Areas may be approved with an Administrative Use Permit (AUP).

Figure 23.204-3 MIXED-USE OPPORTUNITY AREAS IN THE C-E DISTRICT



Table 23.204-21. C-E DEVELOPMENT STANDARDS

	Project Land Use			Supplemental Standards
	Non-Residential ~~and Mixed Use~~	Mixed Use	Residential Only	
Lot Area, Minimum	No minimum		5,000 sq. ft.	23.304.020--Lot Requirements
New Lots	No minimum		5,000 sq. ft.	
Per Group Living Accommodation Resident	350 sq. ft. [1]			
Usable Open Space				23.304.090--Usable Open Space
Per Dwelling Unit	200 sq. ft. [2]			
Per Group Living Accommodation Resident	90 sq. ft.[2]			
Non-Residential Floor Area Ratio, Maximum				
Corner Lot	1.0		No maximum	
All Other Lot	0.8			
Height				
Main Building Height, Minimum	No minimum		No minimum	
Main Building Height, Maximum	28 ft. and 2 stories [3]		35 ft. and 3 stories	
Mixed Use Opportunity Area Main Building Height, Maximum	N/A	58 ft. and 5 stories	N/A	
Density				
Residential Density, Minimum	N/A	25	25	

	Project Land Use			Supplemental Standards
	Non-Residential ~~and Mixed Use~~	**Mixed Use**	**Residential Only**	
(du/acre)				
Residential Density, Maximum (du/acre)	N/A	40	No maximum	
Mixed-Use Opportunity Area Residential Density, Maximum (du/acre)	N/A	115	N/A	
Lot Line Setbacks, Minimum				
Abutting/Confronting a Non-residential District	No minimum		See Table 23.204-22	23.304.030--Setbacks 23.204.080(D)(5)
Abutting/Confronting a Residential District	See Table 23.304-3			
Building Separation, Minimum	No minimum		See Table 23.204-22	
Lot Coverage, Maximum	100%		See Table 23.204-23	23.304.120--Lot Coverage

Notes:

[1] One additional resident is allowed for remaining lot area between 200 and 350 square feet.

[2] Open space requirements for mixed use projects may be modified by the ZAB. See 23.204.080.D.3

[3] A basement level devoted exclusively to parking is not counted as a story.

Table 23.204-22. C-E SETBACK AND BUILDING SEPARATION STANDARDS FOR RESIDENTIAL-ONLY USES

	STANDARDS BY BUILDING STORY			SUPPLEMENTAL STANDARDS
	1ST	2ND	3RD	
Lot Line Setbacks, Minimum				23.304.030—Setbacks 23.204.080(D)(5)
Front	15 ft.	15 ft.	15 ft.	
Rear	15 ft.	15 ft.	15 ft.	
Interior	4 ft.	4 ft.	6 ft.	
Street Side	6 ft.	8 ft.	10 ft.	
Building Separation, Minimum	8 ft.	12 ft.	16 ft.	23.304.040--Building Separation in Residential Districts

Table 23.204-23. C-E LOT COVERAGE STANDARDS FOR RESIDENTIAL-ONLY USES

	STANDARD BASED ON BUILDING HEIGHT			SUPPLEMENTAL STANDARDS
	1 STORY	2 STORIES	3 STORIES	
Lot Coverage, Maximum				23.304.120--Lot Coverage
Interior and Through Lots	45%	45%	40%	
Corner Lots	50%	50%	45%	

3. ~~2.~~ *Lots Abutting or Confronting a Residential District.* See 23.304.130 (Non-residential Districts Abutting a Residential District) for additional building feature requirements for lots that abut or confront a Residential District.

4. ~~3.~~ *Modifications to Standards-Mixed Use Open Space.* The ZAB may modify the usable open space requirement shown in Table 23.204-21 for mixed-use projects by

finding that the modification achieves one or more of the following:

(a) The modification encourages and maintains the present street frontage and pedestrian orientation of the district.

(b) The modification ~~is compatible~~complies with the established development pattern of the commercial district and the adjacent residential neighborhoods with respect to building height, lot coverage and setbacks. ~~in design and character with the commercial district and the adjacent residential neighborhoods~~.

(c) The modification is compatible with the purposes set forth in Section 23.204.080.A (District Purpose) and the existing character of the district.

5.~~4.~~ *Ground Floor ~~Residential Setbacks~~Residential Setbacks~~Uses~~.* ~~A ground floor residential use must be setback at least 20 feet from a property line along College or Ashby Avenue.~~ Ground floor residential uses like units, lobbies, and other shared or accessory spaces on streets other than College Avenue and Ashby Avenue shall be set back a minimum of 5 feet from the street-facing property line.

6.~~5.~~ *Projections into Right-of-Way.*

(a) Bay windows and balconies 11 feet or more above the sidewalk grade may project 3 feet into a street right-of-way.

(b) A maximum 60 percent of the length of a building frontage may project beyond the property line.

(c) All projections require a revocable encroachment permit from the City Council.

E. *Ground Floor Design Standards*

1. *Frontage*

(a) On all lots:

i. At least 80 percent of the College Avenue frontage shall consist of commercial or live/work frontage.

ii. Parking entries shall be prohibited on College Avenue frontages.

iii. Residential units and residential amenity spaces (excluding lobbies and emergency access) shall be prohibited on College Avenue frontages.

iv. Non-commercial frontages, including lobbies, emergency access, service areas, utilities, and refuse access, shall be designed to be consistent with commercial frontage treatments.

v. Utility transformers shall be located underground.

(b) On corner lots and through lots, residential entries, lobbies, service areas, utilities and refuse access shall be prohibited on College Avenue frontages.

(c) On interior lots, residential entries, lobbies, service areas, utilities and refuse access shall occupy a maximum of 15 feet of the lot frontage.

2. *Height.* Commercial spaces shall have a minimum floor-to-floor height of 18 feet.

3. *Depth*. Commercial spaces shall have an average depth of 40 feet, and a minimum depth of 30 feet.

4. *Shape*. Commercial spaces shall be rectilinear for a minimum of 75% of the floor area.

5. *Entries.* Commercial entries shall be recessed by a minimum of 3 feet.

6. *Setbacks*.

(a) Ground floor commercial frontages may be set back up to 5 feet from the property line.

(b) Ground floor commercial frontages may be set back up to 15 feet for up to 50% of the building frontage to provide space for outdoor seating.

(c) On lots with a lot width greater than 80 feet on College Avenue, ground floor commercial frontages shall be set back a minimum of 5 feet from the College Avenue lot line.

7. *Storefront Transparency*. Commercial storefronts shall be 60% transparent between 2.5 feet and 8 feet from finished grade.

8. *Storefront Lighting.* Storefront lighting fixtures shall be pedestrian-scale and directed downward or shielded to prevent glare and light trespass onto adjacent lots or the sidewalk. Pedestrian-scale lighting shall be oriented toward the sidewalk and mounted at a height between 7 feet and 15 feet above finished grade.

9. *Flexible Subdivision.* Commercial spaces shall be designed to allow subdivision into tenant spaces with widths between 15 and 20 feet and to accommodate individual entrances.

10. *Restaurant-Ready*. Commercial spaces shall be designed to accommodate restaurant tenants and shall include the following:

    (a) Provision for exhaust vents venting up to the roof.

    (b) Provision for plumbing and grease traps.

11. *Warm Shell/White Box Ready.* Commercial spaces shall be constructed to warm shell standards and include necessary infrastructure for tenant occupancy. Cold shells are prohibited.

12. *Live/Work Units:* Live/work units shall be designed to allow conversion to entirely commercial use and shall meet the following requirements:

    (a) *Height.* A minimum floor-to-floor height of 15 feet.

    (b) *Storefront Character.*

        i. A minimum of 50 percent of the live/work unit façade shall be designed as a storefront.

        ii. Storefront areas shall be 60% transparent between 2.5 feet and 8 feet from finished grade.

        iii. Storefront areas shall be designed to include signage and lighting when being used for commercial use.

        iv. Storefront areas shall be accessible and include an entry fronting the sidewalk. Entry may be used as residential entry when unit is being used for living or storefront area may have a separate entrance from living areas.

(c) *Width. A* maximum width of 25 feet; and

(d) *Setback.* A minimum setback of 8 feet from the property line.

(e) Other Standards: Live/work units shall comply with the requirements of Section 23.312.040 Standards for Live/Work, in addition to the standards set forth in this Section.

F. Permit Findings. To approve an AUP or Use Permit for a project in the C-E district, the review authority must make the findings in Section 23.406.040 (Use Permits) and find the following:

1. The proposed use or structure will:

   (a) Encourage and maintain the present street frontage and pedestrian orientation of the district;

   ~~(b) Be compatible in design and character with the commercial district and the adjacent residential neighborhoods; and~~

   (~~c~~b) Be compatible with the purposes set forth in Section 23.204.080.A (District Purpose)~~ and the existing character of the district~~.

2. The proposed use or structure will not:

   (a) Interfere with the continuity of retail or compatible service facilities at the ground level;

   (b) Interrupt a continuous wall of building facades;

   (c) Generate traffic and parking demand beyond the capacity of the commercial district or significantly increase impacts on adjacent residential neighborhoods;

   (d) Result in domination of this district by one type of use; and

   (e) Generate objectionable odors nor excessive levels of noise.

Section 4. That BMC Section 23.204.090 is amended to read as follows:

A. *District Purpose.* The purpose of the North Shattuck Commercial (C-NS) district is

to:

1. Implement the General Plan's designations for Neighborhood ~~Community~~ Commercial ~~and Commercial/Residential~~ in this area;

2. Encourage the maintenance and establishment of retail and service activities that provide goods and services to serve the residents of the adjacent and outlying neighborhoods; but do not generate high traffic volume;

3. Provide locations for other activities compatible with these commercial activities;

4. Promote compatibility between such commercial areas and adjacent residential neighborhoods;

5. Limit the space occupied by businesses that generate high traffic volumes;

6. Support the retention of types of businesses serving adjacent neighborhoods;

7. Limit space occupied by commercial uses, especially offices, that are more appropriately located in the downtown business district;

8. Prevent development of commercial spaces exceeding the amount and intensity of use that can be served by available traffic capacity and potential parking supply;

9. Encourage an adequate commercial and residential mix along Shattuck Avenue; and

10. Ensure that new buildings and additions to existing buildings harmonize with their surroundings.

B. *Allowed Land Uses.*

1. *General.* See Table 23.204-1: Allowed Uses in the Commercial Districts.

2. *Commercial Priority Zone.* The C-NS district shall include a Commercial Priority Zone, as shown in Figure 23.204-4.

(a) Ground floor commercial uses shall be required along Shattuck Avenue and Vine Street frontages within the Commercial Priority Zone.

(b) Residential uses are prohibited on ground floor frontages along Shattuck Avenue and Vine Street within the Commercial Priority Zone.

3. *Shattuck Avenue*: For mixed-use projects outside of the Commercial Priority Zone, ground floor commercial uses or live/work units shall be required along Shattuck Avenue frontages.

Figure 23.204-4 COMMERCIAL PRIORITY ZONE IN THE C-NS DISTRICT



C. *Additional Permit Requirements.* See Section 23.204.030 (Additional Permit Requirements).

D. *Development Standards.*

1. *Basic Standards.* See Table 23.204-24: C-NS Development Standards. See also Table 23.204-25: C-NS Setback Standards for Residential-Only Uses and Building Separation Standards for Mixed Use and Residential-Only Uses and Table 23.204-26: C-NS Lot Coverage Standards for Residential-Only Uses.

2. *Mixed-Use Opportunity Areas.* The C-NS district shall include Mixed-Use Opportunity Areas, as shown in Figure 23.204-5.

(a) Different height and density standards shall apply within these areas, as specified in Table *23.204-24: C-NS Development Standards*.

(b) The purpose of the Mixed-Use Opportunity Areas is to:

i. Implement Housing Element policy to affirmatively further fair housing on priority commercial and transit corridors.

ii. Promote equitable access to housing by producing new affordable housing units.

iii. Preserve and support vibrant commercial corridors by adding new residents in commercial districts.

(c) Projects located in Mixed-Use Opportunity Areas may be approved with an Administrative Use Permit (AUP).

Figure 23.204-5 MIXED-USE OPPORTUNITY AREAS IN THE C-NS DISTRICT



Table 23.204-24. C-NS DEVELOPMENT STANDARDS

	Project Land Use			Supplemental Standards
	Non-Residential ~~and Mixed Use~~	Mixed Use	Residential Only	
Lot Area, Minimum				
New Lots	4,000 sq. ft.		5,000 sq. ft.	23.304.020
Per Group Living Accommodation Resident	350 sq. ft. [1]			
Usable Open Space, Minimum				
Per Dwelling Unit	40 sq. ft. [2]		200 sq. ft.	23.304.090--Usable Open Space
Per Group Living Accommodation Resident	No minimum		90 sq. ft.	
Non-Residential **Floor Area Ratio, Maximum**	1.0 [3]		No maximum	
Main Building Height [4]				
Minimum	2 stories		No minimum	
Maximum	3~~8~~5 ft. and 3 stories		28 ft. and 2 stories	
Mixed Use Opportunity Area Maximum	N/A	78 ft. and 7 stories	N/A	
Density				
Residential Density, Minimum (du/acre)	N/A	40	40	
Residential Density, Maximum	N/A	85	No	

	Project Land Use			Supplemental Standards
	Non-Residential ~~and Mixed Use~~	**Mixed Use**	**Residential Only**	
(du/acre)			maximum	
Mixed-Use Opportunity Area Residential Density, Maximum (du/acre)	N/A	165	N/A	
Lot Line Setbacks, Minimum				23.304.030 23.204.090(D)(3)
Abutting/Confronting a Non-residential District	No minimum		See Table 23.204-25	
Abutting/Confronting a Residential District	See 23.304.030.C.2			
Building Separation, Minimum	No minimum ~~[5]~~		See Table 23.204-25	23.304.040
Lot Coverage, Maximum	100%		See Table 23.204-26	23.304.120

Notes:

[1] One additional resident is allowed for remaining lot area between 200 and 350 square feet.

[2] For mixed use projects, usable open space dimensions may be smaller than required in 23.304.090.B.3, but no dimension may be less than 6 feet.

[3] For mixed-use residential projects, no maximum floor area ratio.

[4] Basement levels devoted exclusively to parking are not counted as a story.

~~**[5]** For mixed use projects, minimum building separation shall be as required for residential-only projects. See Table 23.204-25.~~

Table 23.204-25. C-NS SETBACK STANDARDS FOR RESIDENTIAL-ONLY USES AND BUILDING SEPARATION STANDARDS FOR MIXED USE AND RESIDENTIAL-ONLY USES

	STANDARDS BY BUILDING STORY			SUPPLEMENTAL STANDARDS
	1ST	2ND	3RD	
Lot Line Setbacks, Minimum				23.304.030--Setbacks
Front	15 ft.	15 ft.	15 ft.	
Rear	15 ft.	15 ft.	15 ft.	
Interior	4 ft.	4 ft.	6 ft.	
Street Side	6 ft.	8 ft.	10 ft.	
Building Separation, Minimum	8 ft.	12 ft.	16 ft.	23.304.040--Building Separation in Residential Districts

Table 23.204-26. C-NS LOT COVERAGE STANDARDS FOR RESIDENTIAL-ONLY USES

	STANDARD BASED ON BUILDING HEIGHT			SUPPLEMENTAL STANDARDS
	1 STORY	2 STORIES	3 STORIES	
Lot Coverage, Maximum				
Interior and Through Lot	45%	45%	40%	23.304.120--Lot Coverage
Corner Lot	50%	50%	45%	

2. *Lots Abutting or Confronting a Residential District.* See Section 23.304.130--Non-Residential Districts Abutting a Residential District for additional building feature requirements for lots that abut or confront a Residential District.

3. *Ground Floor* *Residential Setbacks.* ~~*Dwelling Units in Mixed-Use Buildings.* Ground floor dwelling units in a mixed-use building shall be located at least 20 feet~~

~~from a property line next to a public right-of-way.~~ Ground floor residential uses like units, lobbies, and other shared or accessory spaces on streets other than Shattuck Avenue and Vine Street shall be set back at least 5 feet from the side street property line.

4. *Residential Window Setback.* Mixed-use buildings shall be setback at least ten feet from an interior property line opposite a required window in any habitable room of a residential use.

E. Ground Floor Design Standards.

1. *Frontage*.

(a) On all lots:

i. At least 80% of frontage on Shattuck Avenue shall consist of commercial or live/work frontage.

ii. Parking entries are prohibited on Shattuck Avenue frontages.

iii. Residential units and amenity spaces (excluding lobbies and emergency access) are prohibited on Shattuck Avenue frontages.

iv. Non-commercial frontages, including lobbies, emergency access, service areas, utilities, and refuse access, shall be designed to be consistent with commercial frontage treatments.

v. Utility transformers shall be located underground.

(b) On corner lots and through lots, residential entries, lobbies, service areas, utilities and refuse access shall be prohibited on Shattuck Avenue frontages.

(c) On interior lots, residential entries, lobbies, service areas, utilities and refuse access shall occupy a maximum of 15 feet of the lot frontage.

2. *Height.* Commercial spaces shall have a minimum clear ceiling height of 14 feet.

3. *Depth*. Commercial spaces shall have an average depth of 40 feet, and a minimum depth of no less than 30 feet.

4. *Shape*. Commercial spaces shall be rectilinear for a minimum of 75% of the floor area.

5. *Entries.* Commercial entries shall be recessed by a minimum of 3 feet.

6. *Setbacks.*

   (a) Ground floor commercial frontages may be set back up to 5 feet from the property line.

   (b) On lots with lot width greater than 80 feet on Shattuck Avenue, ground floor commercial frontages shall be set back a minimum of 5 feet from the Shattuck Avenue lot line.

   (c) Ground floor commercial frontages may be set back up to 15 feet for up to 50% of the building frontage to provide space for outdoor seating.

7. *Storefront Transparency*. Commercial storefronts shall be 60% transparent between 2.5 feet and 8 feet from finished grade.

8. *Storefront Lighting.* Storefront lighting fixtures shall be pedestrian-scale and directed downward or shielded to prevent glare and light trespass onto adjacent lots or the sidewalk. Pedestrian-scale lighting shall be oriented toward the sidewalk and mounted at a height between 7 feet and 15 feet above finished grade.

9. *Flexible Subdivision.* Commercial spaces shall be designed to allow subdivision into tenant spaces with widths between 15 and 20 feet and to accommodate individual entrances.

10. *Restaurant-Ready*. Commercial spaces shall be designed to accommodate restaurant tenants and shall include the following:

    (a) Provision for exhaust vents venting up to the roof.

    (b) Provision for plumbing and grease traps.

11. *Warm Shell/White Box Ready.* Commercial spaces shall be constructed to warm shell standards and include necessary infrastructure for tenant occupancy. Cold shells are prohibited.

12. *Anchor Tenant Preservation.* If an existing commercial space greater than 18,000 square feet is proposed to be demolished, a commercial space with a minimum size of 10,000 square feet shall be built on-site. The space shall be able to accommodate one tenant but may be subdivided into smaller commercial spaces.

13. Live/work units: Live/work units shall be designed to allow conversion to commercial use and shall meet the following requirements:

(a) *Height. A minimum* floor-to-floor height of 15 feet.

(b) *Storefront Character.*

i. A minimum of 50 percent of the live/work unit façade shall be designed as a storefront.

ii. Storefront areas shall be 60% transparent between 2.5 feet and 8 feet from finished grade.

iii. Storefront area shall be designed to include signage and lighting when being used for commercial use.

iv. Storefront areas shall be accessible and include an entry fronting the sidewalk. Entry may be used as residential entry when unit is being used for living or storefront area may have a separate entrance from living areas.

(c) *Width. A* maximum width of 25 feet.

(d) *Setback. A* minimum setback of 8 feet from the property line.

(e) Other Standards: Live/work units shall comply with the requirements of Section 23.312.040 Standards for Live/Work, in addition to the standards set forth in this Section.

F.~~E.~~ *Permit Findings.* To approve an AUP or Use Permit for a project in the C-NS district, the review authority must make the findings in Section 23.406.040--Use Permits and find that the proposed use or structure:

~~1. Is compatible in design and character with the commercial district and the adjacent residential neighborhoods;~~

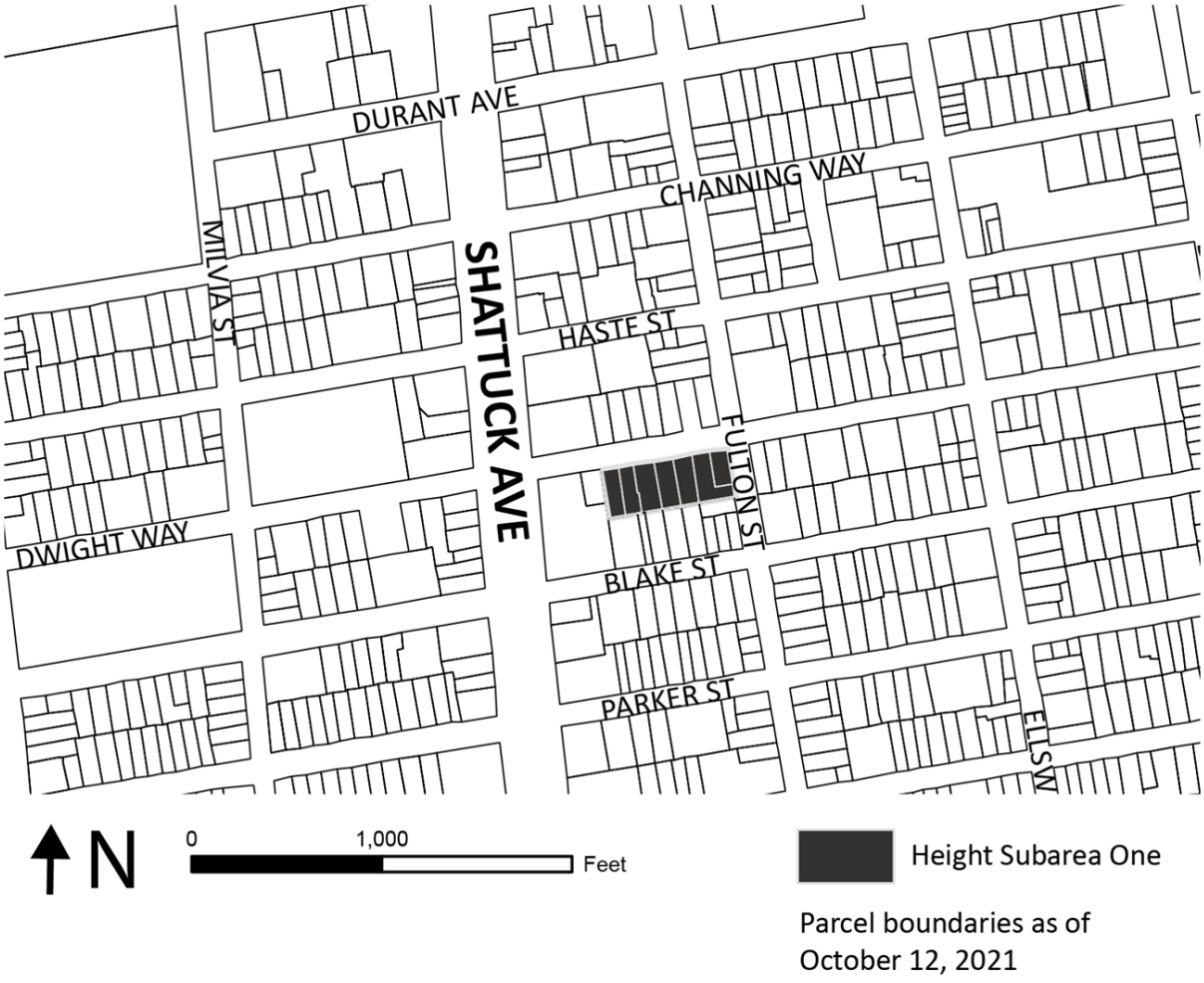
1.~~2.~~ Is compatible with the purposes ~~and the existing character~~ of the district.

2.~~3.~~ Does not interfere with the continuity of retail or compatible service facilities at the ground level;

~~4. Does not exceed the amount and intensity of use that can be served by available traffic capacity and potential parking supply.~~

Section 5. That BMC Section 23.204.100 is amended to read as follows:

Figure 23.204-6~~3~~. C-SA Building Height Subarea One



Section 6. That BMC Section 23.204.120 is amended to read as follows:

A. *District Purpose.* The purpose of the Solano Avenue Commercial (C-SO) district is to:

1. Implement the General Plan's designations for Neighborhood ~~Community~~ Commercial ~~and Commercial Service areas~~;

2. Maintain a scale and balance of commercial activity on Solano Avenue that will:

(a) Enhance the surrounding neighborhood and serve its residents;

(b) Encourage the location of businesses on Solano Avenue that serve the everyday needs of local residents;

(c) Discourage the location of businesses on Solano Avenue that serve a larger regional clientele, and should more appropriately be located in the Central Business District;

(d) Limit the number of businesses on Solano Avenue that generate traffic or parking demand in excess of commercial parking availability, causing the overflow of traffic circulation and parking onto adjacent residential streets;

(e) Encourage location of late-night commerce in appropriate areas in Berkeley, such as the downtown area, and allow businesses to address demand for late night service on Solano Avenue by establishing a 12:00 midnight closing time for businesses on Solano Avenue; and

(f) Ensure that all construction, alterations, or additions to buildings will be in functional and aesthetic harmony with adjacent buildings and areas; and

(g) Protect local residents from commercial noise, offensive odors and parking and traffic problems.

B. *Allowed Land Uses.*

1. *General.* See Table 23.204-1: Allowed Uses in the Commercial Districts.

2. *Automatic Teller Machines (ATM).* A maximum of two exterior ATMs are allowed per bank establishment and only when off-street parking is provided.

3. *Commercial Priority Zone.* The C-SO district shall include a Commercial Priority Zone, as shown in Figure 23.204-7.

(a) Ground floor commercial uses shall be required along Solano Avenue frontages within the Commercial Priority Zone.

(b) Residential uses are prohibited on ground floor frontages along Solano Avenue within the Commercial Priority Zone.

4. *Solano Avenue*. For mixed-use projects outside of the Commercial Priority Zone, ground floor commercial uses or live/work units shall be required along Solano Avenue frontages.

Figure 23.204-7 COMMERCIAL PRIORITY ZONE IN THE C-SO DISTRICT



C. *Additional Permit Requirements.* See Section 23.204.030 (Additional Permit Requirements).

D. *Development Standards.*

1. *Basic Standards.* See Table 23.204-33: C-SO Development Standards. For residential-only projects, see also Table 23.204-34: C-SO Setback and Building Separation Standards for Residential-Only Uses and Table 23.204-35: C-SO Lot Coverage Standards for Residential-Only Uses.

2. *Mixed-Use Opportunity Areas.* The C-SO district shall include Mixed-Use Opportunity Areas, as shown in Figure 23.204-8.

(a) Different height and density standards shall apply within these areas, as specified in Table 23.204-33: C-SO Development Standards.

(b) The purpose of the Mixed-Use Opportunity Areas is to:

i. Implement Housing Element policies to affirmatively further fair housing on priority commercial and transit corridors;
ii. Promote equitable access to housing by facilitating the development of new affordable housing units; and
iii. Support vibrant commercial corridors by introducing additional residential uses.

(c) Projects located in Mixed-Use Opportunity Areas may be approved with an Administrative Use Permit (AUP).

Figure 23.204-8 MIXED-USE OPPORTUNITY AREAS IN THE C-SO DISTRICT



Table 23.204-33. C-SO DEVELOPMENT STANDARDS

	Project Land Use			Supplemental Standards
	Non-Residential ~~and Mixed Use~~	Mixed-Use [1]	Residential Only [1]	
Lot Area, Minimum				
New Lots	No minimum		5,000 sq. ft	23.304.020--Lot Requirements
Per Group Living Accommodation Resident	350 sq. ft. [2]			
Usable Open Space, Minimum				23.304.090--Usable Open Space
Per Dwelling Unit	40 sq. ft. [43]		200 sq. ft.	
Per Group Living Accommodation Resident	No minimum		90 sq. ft.	
Non-Residential Floor Area Ratio, Maximum	2.0		No maximum	
Height				
Main Building Height, Minimum	No minimum			
Main Building Height, Maximum	28 ft. and 2 stories			23.304.050--Building Height
Mixed Use Opportunity Area Main Building Height, Maximum	N/A	68 ft. and 6 stories	N/A	
Density				

	Project Land Use			Supplemental Standards
	Non-Residential ~~and Mixed Use~~	**Mixed-Use [1]**	**Residential Only [1]**	
Residential Density, Minimum (du/acre)	N/A	40	40	
Residential Density, Maximum (du/acre)	N/A	60	No maximum	
Mixed-Use Opportunity Area Residential Density, Maximum (du/acre)	N/A	140	N/A	
Lot Line Setbacks, Minimum				
Abutting/Confronting a Non-residential District	No minimum		See Table 23.204 34	23.304.030--Setbacks 23.204.120(D)(4)
Abutting/Confronting a Residential District	See 23.304.030.C.2			
Building Separation, Minimum	No minimum ~~[3]~~		See Table 23.204 34	23.304.040--Building Separation in Residential Districts
Lot Coverage, Maximum	100%		See Table 23.204 35	23.304.120--Lot Coverage

[1] For mixed use and residential only projects, development standards included in this table may be modified. See 23.204.120(D)(3).

[2] One additional resident is allowed for remaining lot area between 200 and 350 square feet.

~~**[3]** For mixed-use projects, minimum building separation shall be as required for residential-only projects~~

[34] No dimension may be less than 6 feet.

Table 23.204-34. C-SO SETBACK AND BUILDING SEPARATION STANDARDS FOR

RESIDENTIAL-ONLY USES

	STANDARDS BY BUILDING STORY			SUPPLEMENTAL STANDARDS
	1ST	2ND	3RD	
Lot Line Setbacks, Minimum [1]				
Front	15 ft.	15 ft.	15 ft.	
Rear	15 ft.	15 ft.	15 ft.	23.304.030--Setbacks
Interior	4 ft.	4 ft.	6 ft.	
Street Side	6 ft.	8 ft.	10 ft.	
Building Separation, Minimum [1]	8 ft.	12 ft.	16 ft.	23.304.040--Building Separation in Residential Districts

[1] For mixed use and residential-only projects, development standards included in this table may be modified. See 23.204.120(D)(3).

Table 23.204-35. C-SO LOT COVERAGE STANDARDS FOR RESIDENTIAL-ONLY USES

	STANDARD BASED ON BUILDING HEIGHT			SUPPLEMENTAL STANDARDS
	1 STORY	2 STORIES	3 STORIES	
Lot Coverage, Maximum [1]				
Interior and Through Lots	45%	45%	40%	23.304.120--Lot Coverage
Corner Lots	50%	50%	45%	

[1] For mixed use and residential-only projects, development standards included in this table may be modified. See 23.204.120(D)(3).

2. *Lots Abutting or Confronting a Residential District.* See 23.304.130 (Non-residential Districts Abutting a Residential District) for additional building feature requirements for lots that abut or confront a Residential District.

3. *Modification to Standards--Mixed Use and Residential-Only Projects.* The ZAB may modify development standards in Table 23.204-33, Table 23.204-34, and Table 23.204-35 for a mixed-use or residential-only project with a Use Permit upon making one of the following findings:

(a) The modification will encourage public transit utilization and existing off-street parking facilities in the area of the proposed building.

(b) The modification will facilitate the construction of residential or tourist hotel uses where appropriate.

(c) The modification will permit consistency with the building setbacks existing in the immediate area where a residential building setback would not serve a useful purpose.

4. ~~*Ground Floor Residential Uses.* A ground floor residential uses shall be setback at least 320 feet from a street side property line.~~ *Ground Floor Residential Setbacks.* Ground floor residential uses like units, lobbies, and accessory spaces on streets other than Solano Avenue shall be setback at least 5 feet from the street-facing property line.

5. *Projections into Right-of-Way.*

(a) Bay windows and balconies 11 feet or more above the finished ~~sidewalk~~ grade may project 3 feet into a street right-of-way.

(b) A maximum 60 percent of the length of a building frontage may project beyond the property line.

(c) All projections require an encroachment permit from the Public Works Department.

6. *Limitations Adjacent to a R District.* The following requirements apply to commercial uses adjacent to a residential district or fronting any street other than

Solano Avenue.

(a) All openings other than fixed windows and required fire exits must be setback at least 50 feet from any property located in an Residential District to reduce noise and odor problems in residential areas.

(b) Customer use of rear or side exits which open onto residential streets (with the exception of emergency access) is not permitted.

(c) Garbage and recycled materials may not be placed for collection on residential streets from storage areas located at the rear of any building. All such materials shall be stored in an enclosed area for health and sanitation reasons.

(d) Deliveries to non-residential establishments from residential streets are not permitted.

E. *Ground Floor Design Standards*

1. *Frontage*.

(a) On all lots:

i. At least 80% of the Solano Avenue frontage shall consist of commercial or live/work frontage.

ii. Parking entries are prohibited on Solano Avenue frontages.

iii. Residential units and amenity spaces (excluding lobbies and emergency access) are prohibited on Solano Avenue frontages.

iv. Non-commercial Solano Avenue frontages, including lobbies, emergency access, service areas, utilities, and refuse access, shall be designed to be consistent with commercial frontage treatments.

v. Utility transformers shall be located underground.

(b) On corner lots and through lots, residential entries, lobbies, service areas, utilities and refuse access shall be prohibited on Solano Avenue frontages.

(c) On interior lots, residential entries, lobbies, service areas, utilities and refuse access shall occupy a maximum of 15 feet of the lot frontage.

2. *Height.* Commercial spaces shall have a minimum clear ceiling height of 14 feet.

3. *Depth*. Commercial spaces shall have an average depth of 40 feet, and a minimum depth of no less than 30 feet.

4. *Shape*. Commercial spaces shall be rectilinear for a minimum of 75% of the floor area.

5. *Entries.* Commercial entries shall be recessed by a minimum of 3 feet.

6. *Setbacks.*

(a) Ground floor commercial frontages may be set back up to 5 feet from the property line.

(b) On lots with lot width greater than 80 feet on Solano Avenue, ground floor commercial frontages shall be set back a minimum of 5 feet from the Solano Avenue lot line to expand the sidewalk area.

(c) Ground floor commercial frontages may be set back up to 15 feet for up to 50% of the building frontage to provide space for outdoor seating.

7. *Storefront Transparency*. Commercial storefronts shall be 60% transparent between 2.5 feet and 8 feet from sidewalk grade.

8. *Storefront Lighting.* Storefront lighting fixtures shall be pedestrian-scale and directed downward or shielded to prevent glare and light trespass onto adjacent lots or the sidewalk. Pedestrian-scale lighting shall be oriented toward the sidewalk and mounted at a height between 7 feet and 15 feet above finished grade.

9. *Flexible Subdivision.* Commercial spaces shall be designed to allow subdivision into tenant spaces with widths between 15 and 20 feet and to accommodate individual entrances.

10. *Restaurant-Ready*. Commercial spaces shall be designed to accommodate restaurant tenants and shall include the following:.

(a) Provision for exhaust vents venting up to the roof.

(b) Provision for plumbing and grease traps.

11. *Warm Shell/White Box Ready.* Commercial spaces shall be constructed to warm shell standards and include necessary infrastructure for tenant occupancy. Cold shells are prohibited.

12. *Anchor Tenant Preservation.* If an existing commercial space greater than 18,000 square feet is proposed to be demolished, a commercial space with a minimum size of 10,000 shall be built on-site. The space shall be able to accommodate one tenant but may be subdivided into smaller commercial spaces.

13. Live/work units shall be designed to allow conversion to commercial use and shall meet the following requirements:

(a) *Height.* Live/work units shall have a minimum floor-to-floor height of 15 feet.
(b) *Storefront Character.*
i. A minimum of 50 percent of the live/work unit façade shall be designed as a storefront.
ii. Storefront areas shall be 60% transparent between 2.5 feet and 8 feet from finished grade.
iii. Storefront area shall be designed to include signage and lighting when being used for commercial use.
iv. Storefront areas shall be accessible and include an entry fronting the sidewalk. Entry may be used as residential entry when unit is being used for living or storefront area may have a separate entrance from living areas.
(c) *Width.* Live/work units shall have a maximum width of 25 feet.
(d) *Setback.* Live/work unit frontages shall be set back a minimum of 8 feet from the property line.

F.~~E.~~ *Permit Findings.* To approve an AUP or Use Permit for a project in the C-SO district, the review authority must make the findings in Section 23.406.040 (Use Permits) and find that the proposed use or structure:

1. Encourages and maintains the character of the street frontage and pedestrian orientation of the district;

~~2. Is compatible in design and character with the district and the adjacent residential neighborhood;~~

2.~~3.~~ Is compatible with the purposes set forth in this set of regulations ~~and the existing character of Solano Avenue~~;

3. ~~4.~~ Does not interfere with the continuity of retail or compatible service facilities at the ground level, or interrupt a continuous wall of building facades~~; and~~

~~5. Does not generate traffic and parking demand to significantly increase impacts on adjacent residential neighborhoods.~~

Section 7. That BMC Section 23.302.070(E) amended to read as follows:

E. Food Service Establishments.

1. Outdoor Cafe Seating.

(a) Outdoor cafe seating on private property outside of the public right-of-way is allowed in the commercial districts with the following permits:

i. Zoning Certificate when seating does not abut a residential district.

ii. AUP when seating abuts a residential district.

(b) Outdoor cafe seating on private property outside of the public right-of-way is allowed in the MU-LI and MU-R districts with an AUP.

(c) Sidewalk cafe seating within the public right-of-way is subject to 23.302.060 (Sidewalk Cafe Seating).

~~2. Building Openings--C-E and C-NS Districts. Food service establishments in the C-E and C-NS districts may have no openings, other than fixed windows and required fire exits, within 50 feet of a residential district.~~

~~3~~2. C-SP District Requirements.

(a) Food service drive-through is not permitted on properties fronting San Pablo Avenue.

~~4~~3. MU-LI, MU-R, and M-RD District--Findings.

(a) To approve an AUP or Use Permit to establish or expand a food service establishment in the MU-LI, MU-R, or M-RD district, the review authority must find that the establishment of the use, given its size, location, physical appearance and other relevant characteristics, will not have a significant detrimental impact on the industrial character of the area.

Section 8. That Table 23.302-7 within BMC Chapter 23.302.070 is amended to read:

Table 23.302-7. PERMIT REQUIREMENTS FOR PARKING LOTS/STRUCTURES

DISTRICT	PERMIT REQUIRED
Residential Districts	
R-3	Use Permit for all parking lots and structures. [1]
R-S, R-SMU, R-BMU	Use Permit for parking structures only. Parking lots are not permitted, except on lots between Acton Street and Virginia Gardens and between Peralta Avenue and Northside Avenue in the R-BMU.
All other residential districts	Use Permit for all parking lots and structures.
Commercial Districts	
C-C, C-U	Zoning Certificate for parking lots and structures with 5 spaces or fewer. Use Permit for more than 5 spaces.
~~C-SO~~	~~AUP for parking lots and structures with 5 spaces or fewer. Use Permit for more than 5 spaces.~~
C-DMU	AUP for parking lots with 8 spaces or fewer. Use Permit for all parking structures. Lots with more than 8 spaces not permitted.
C-N, C-E, C-NS, C-SA, C-SO	Use Permit for all parking lots and structures.
C-T	Use Permit for all parking structures. All parking lots not permitted.
C-W	AUP for parking lots and structures with 10 spaces or fewer. Use Permit for parking lots and structures with more than 10 spaces.
Manufacturing Districts	
M, MM	AUP for parking lots and structures with 10 or fewer spaces exclusively for uses in the district. Use Permit for parking lots and structures with any number of spaces not exclusively for uses in the district.
MU-LI, M-RD	Zoning Certificate for parking lots and structures with 10 or fewer spaces exclusively for uses in the district. AUP for parking lots and structures with 11 spaces or more exclusively for uses in the district. Use Permit for parking lots and structures with any number of spaces not exclusively for uses in the district.
MU-R	Zoning Certificate for parking lots and structures exclusively for uses in the district. Use Permit for parking lots and structures not exclusively for uses in the

DISTRICT	PERMIT REQUIRED
	district.

Section 9. That BMC Chapter 23.322.120(A)(2) is amended to read:

2. If so resolved, the following districts are required to pay a TSF: R-S, R-SMU, C-C, C-U, C-N, C-NS, C-T, C-SO, C-E, M, and MM.

Section 10. That BMC Sections 23.404.020(D) is amended to read as follows:

D. *Pre-Application Notice* ~~*Posted by Applicant.*~~

1. Before submitting an application for a discretionary permit, an applicant shall post a conspicuous notice of the proposed project readily visible from the street adjacent to the property's primary frontage, and shall provide written notice to any existing commercial tenants.

2. The form and contents of the notice shall be as specified by the Department.

Section 11. That BMC Sections 23.502.020(C)(22) – (26) are amended to read as follows:

22. **Cold Shell (Commercial Space).** A commercial tenant space that is delivered in an unfinished condition and is not suitable for occupancy without substantial tenant improvements. A cold shell space consists of a structural shell with minimal interior improvements and limited building systems.

A cold shell space includes:

(a) Structural elements, including exterior walls, roof, and floor slab; and

(b) Utility connections or stub-outs for mechanical, electrical, and plumbing systems.

A cold shell space excludes installed and operational mechanical, electrical, and plumbing systems, interior finishes, and fixtures necessary for occupancy.

23.~~22.~~ *Controlled Rental Unit.* Any dwelling unit, live/work unit, bedroom or sleeping quarters portion of a group living accommodation or other unit that is subject to the City's Rent Stabilization Ordinance (Municipal Code Chapter 13.76).

24.~~23.~~ *Construction.* The placing of construction materials and their fastening in a permanent manner to the ground or a structure or building for the purpose of creating or altering a structure or building, or excavation of a basement.

25.~~24.~~ *Contractors Yard.* A storage facility for any person who contracts to undertake and complete a construction project or a discrete part of a construction project, including all persons defined as contractors and subject to Division 3, Chapter 9 of the State of California Business and Professions Code.

26. ~~25.~~ *Conversion, Residential.* The physical change of the floor area and/or walls of a building that is used for dwelling unit, group living accommodation or residential hotel room purposes, so as to change the number of dwelling units, sleeping rooms or residential hotel rooms, or reduce the floor area and/or habitable space of any residential living quarters.

27. ~~26.~~ *Craft.* An occupation, avocation or trade requiring special manual dexterity or artistic skill in the creation of a product.

Section 12. That BMC Sections 23.502.020(R)(8) – (R)(18) are amended to read as follows:

8. **Rectilinear.** A space or floor area configured in a regular, orthogonal shape defined primarily by straight lines and right angles (90 degrees), with minimal irregularities, recesses, or non-orthogonal angles. A rectilinear space is generally rectangular or composed of adjoining rectangular forms that allow for efficient layout, circulation, and subdivision.

~~8.~~9. *Resident.* A person whose primary residence is in Berkeley.

10.~~9.~~ *Residential Care Facility.* See Community Care Facility.

11.~~10.~~ *Residential Hotel.* See Hotel, Residential.

12.~~11.~~ *Residential Addition.* See Addition, Residential.

13. ~~12.~~ *Residential Districts.* The districts listed under the Residential Districts heading in Table 23.108-1: Zoning Districts.

14. ~~13.~~ *Residential Hotel Room.* A room which is:

(a) Used, designed, or intended to be used for sleeping for a period of 14 consecutive days or more;

(b) Not a complete dwelling unit, as defined in this chapter; and

(c) Not a Tourist Hotel Room, as defined in this chapter.

15. ~~14.~~ *Residential Use.* Any legal use of a property as a place of residence, including but not limited to dwelling units, group living accommodations, and residential hotels.

16. ~~15.~~ *Retail, General.* A retail establishment engaged in the sales of personal, consumer, or household items to the customers who will use such items. This use includes antique stores, art galleries, arts and crafts supply stores, bicycle shops, building materials and garden supplies stores, clothing stores, computer stores, cosmetic/personal care items, department stores, drug paraphernalia stores, drug stores, fabric, textile and sewing supply shops, flower and plant stores, food product stores, furniture stores, garden supply stores, nurseries, gift/novelty shops, household hardware and housewares stores, household electronics/electrical stores, jewelry/watch shops, linen shops includes bedding, musical instruments and materials stores, office supply stores, paint stores, photography equipment supply stores, secondhand stores, sporting goods stores, stationery, cards and paper goods stores toy stores and variety stores. This use excludes video rental stores, service of vehicle parts, and firearm/munition sales.

17. ~~16.~~ *Retaining Wall.* A wall designed to contain and resist the lateral displacement of soil and of which such soil is at a higher elevation on one side of the wall.

18. ~~17.~~ *Review Authority.* The City official or body responsible for approving or denying a permit application or other form of requested approval under the Zoning Ordinance.

19. ~~18.~~ *Rooming House.* A building used for residential purposes, other than a hotel, where lodging for 5 or more persons, who are not living as a single household, is provided for compensation, whether direct or indirect. In determining the number of persons lodging in a rooming house, all residents shall be counted, including those acting as manager, landlord, landlady or building superintendent. See also Boarding House.

Section 13. That BMC Sections 23.502.020(W)(3) – (W)(5) are amended to read as follows:

3. **Warm Shell (Commercial Space).** A commercial tenant space that is delivered in a partially improved condition suitable for occupancy with limited additional tenant improvements. A warm shell space includes installed and operational mechanical, electrical, plumbing, and life safety systems, and interior finishes sufficient to support tenant build-out.

A warm shell space includes:

(a) Heating, ventilation, and air conditioning (HVAC) systems;
(b) Electrical service, lighting, and outlets;
(c) Plumbing infrastructure, including restrooms or fixture stub-outs; and
(d) Finished interior walls, ceilings, and floors.

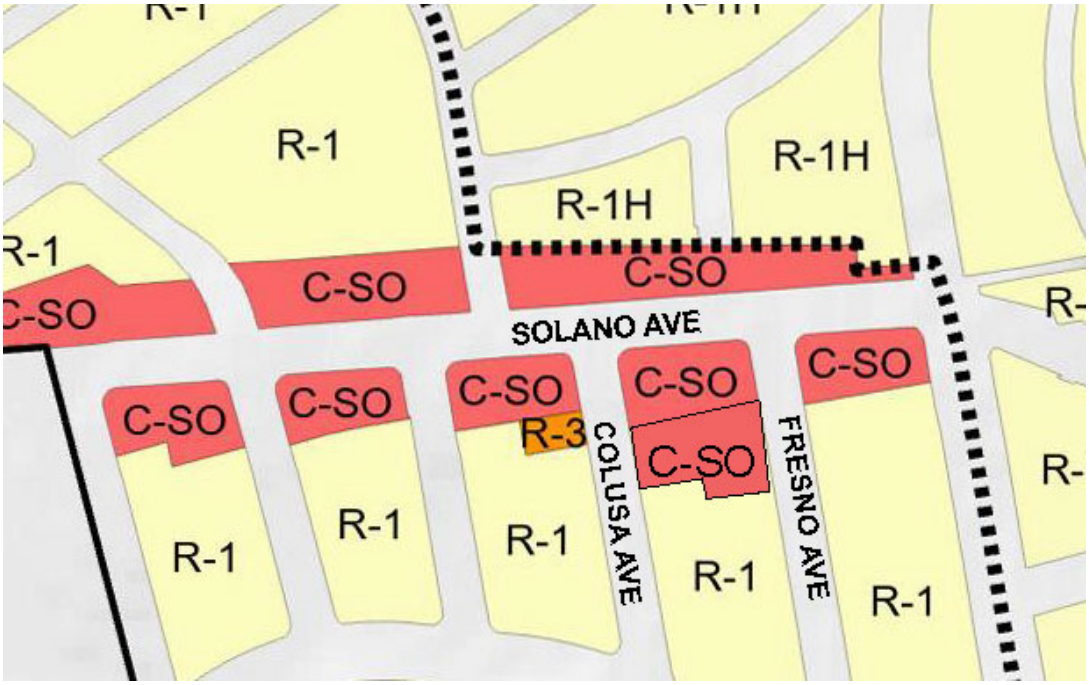
A warm shell space excludes tenant-specific improvements, including specialized equipment, custom layouts, and finish selections unique to a particular tenant.

43. *Wheelchair Ramp.* A sloping ramp, designed in width and steepness to allow a person in a wheelchair to reach an entrance doorway of a building or a landing at the same level as the doorway.

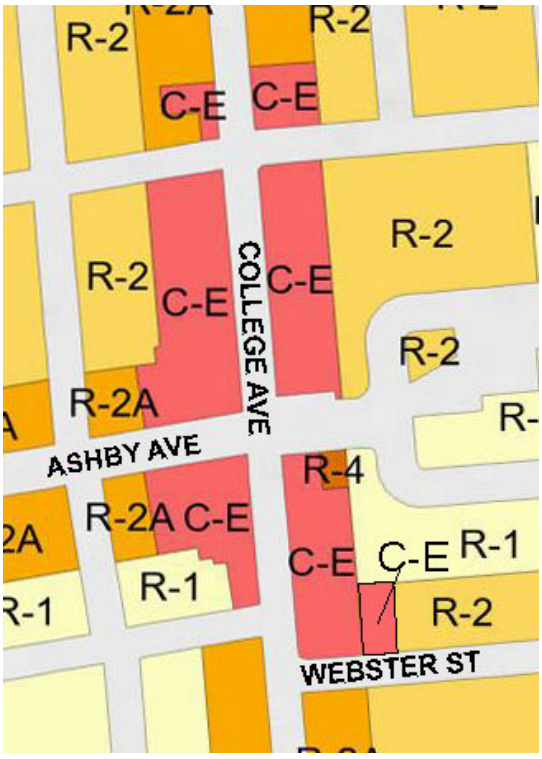
5.4. *Wholesale Trade.* The sale of goods to other businesses for resale. Any use defined as conducting Wholesale Trade under Municipal Code Section 9.04.150 is considered a wholesale trade establishment.

6.5. *Windmill.* A device that converts the kinetic energy of the wind to a usable form of electrical or mechanical energy, usually by rotating blades.

Section 14. That the Official Zoning Map be amended to rezone parcels associated with the Andronico's parking lot site on Solano Avenue that are currently zoned R-1 (Residential District) to Solano Commercial (C-SO) as indicated in the diagram below.



Section 15. That the Official Zoning Map be amended to rezone parcels associated with the USPS Parking Lot in the Residential Multi-Unit 2 (R-2) to Commercial-Elmwood(C-E) as indicated in the diagram below.



Section 16. This ordinance shall take effect thirty (30) days after the second reading consistent with the City Charter. However, if the General Plan Amendment adopted by Resolution XXXXX, is not yet effective as of that date, this ordinance shall not take effect until the effective date of the General Plan Amendment adopted by Resolution XXXXX.

Attachment 3: Housing Capacity Analysis

This analysis compares the additional units, including affordable units, that would result from three rezoning scenarios for the College Avenue, Shattuck Avenue and Solano Avenue corridors, and details assumptions about utilization of State Density Bonus and estimates of affordable housing production.

The three scenarios analyzed are:

- A scenario which includes 7 story maximum base heights across all three corridors.
- The Higher Density Alternative presented to the Planning Commission in September 2025 and to the City Council in November 2025. The Higher Density Alternative assumed base heights of 4 stories in the C-E zoning district, 5 stories in the C-SO zoning district, and 6 stories in the C-NS zoning district.
- The updated Mixed-Use Opportunity Areas site selection approach recommended by the Planning Commission, which includes an assumption of base heights of 5 stories in the C-E zoning district, 6 stories in the C-SO zoning district, and 7 stories in the C-NS zoning district for parcels within the Mixed-Use Opportunity Areas, with no change to other parcels.

The capacity analysis identifies parcels that are most likely to redevelop. Estimates assume buildout of these sites, with utilization of State Density Bonus at a 50% level, at a maximum height of 8 stories, consistent with recent development trends in Berkeley for projects that utilize the State Density Bonus. The analysis reflects reasonable redevelopment assumptions for likely sites rather than full theoretical buildout of all parcels and is intended to illustrate comparative differences in capacity across scenarios.

The proposed Mixed-Use Opportunity Areas approach results in an estimated reduction of approximately 0.5 percent in total residential capacity across the three corridors compared to the Higher Density Alternative that was presented to the City Council in November 2025.

State Density Bonus

Projects in Mixed-Use Opportunity Areas in the C-SO and C-NS zoning districts are considered unlikely to utilize State Density Bonus at a 100% level, as the maximum allowable heights for Mixed-Use Opportunity Areas in the C-SO and C-NS zoning districts allow projects to reach the 8 stories using State Density Bonus at approximately 50% level. Projects in Mixed-Use Opportunity Areas in the C-E zoning district may

utilize State Density Bonus at a 100% level, as the maximum allowable height for Mixed-Use Opportunity Areas in the C-E district only allows projects to reach up to 6 stories using State Density Bonus at a 50% level. Based on current development trends, projects outside of Mixed-Use Opportunity Areas, where existing zoning regulations would be largely unchanged, are considered unlikely to utilize State Density Bonus at a 100% level.

Affordable Housing

For the purposes of this analysis, the number of on-site affordable units is estimated as approximately 10% of total projected residential units. This assumption is informed by a review of recent Berkeley development projects utilizing the State Density Bonus over the past five years, including analysis of issued permits and completed projects. Based on this sample, the median share of on-site affordable units as a percentage of total units generally ranges from approximately 8% to 12%. This reflects typical project configurations where developers provide the minimum required affordable units to qualify for a 50% density bonus and may meet remaining inclusionary requirements through in-lieu fees.

Under this approach, affordable units are calculated as a percentage of the base project, while State Density Bonus units are not required to be affordable. As a result, when bonus units are included in the total unit count, the overall share of on-site affordable units decreases relative to the base requirement. Accordingly, a 10% assumption represents a reasonable midpoint for estimating on-site affordable housing production under current market and regulatory conditions and is consistent with observed development patterns in Berkeley.

Consistent with the reduction in overall residential capacity compared to the Higher Density Alternative that was presented to the City Council in November 2025, the proposed Mixed-Use Opportunity Area would result in a corresponding decrease in the estimated number of affordable units. Compared to the Higher Density Alternative, the Mixed-Use Opportunity Area approach would result in a reduction of approximately 3 affordable units.

Development projects along the corridors, both inside and outside the Mixed-Use Opportunity Areas, may also contribute affordable housing in-lieu fees to the Affordable Housing Trust Fund. Affordable units developed as a result of these in-lieu fees are not included in Table 1.

Table 1: Comparison of Projected Number of Units Over Existing Conditions

	College Avenue (C-E)	Solano Avenue (C-SO)	North Shattuck (C-NS)	Total Berkeley Corridors
Total Projected Units				
7 Stories Across All Three Corridors	215 units	682 units	1,132 units	**2,029 units**
Higher Density Alternative (2025)	140 units	578 units	1,040 units	**1,758 units**
Mixed-Use Opportunity Areas	143 units	528 units	1,080 units	**1,751 units**
On-site Affordable Units (10% of total projected units)*				
7 Stories Across All Three Corridors	22 units	68 units	113 units	**203 units**
Higher Density Alternative (2025)	14 units	58 units	104 units	**176 units**
Mixed-Use Opportunity Areas	14 units	53 units	108 units	**175 units**

While the Higher Density Alternative rezoned all parcels in each corridor, staff analysis concluded that only a limited number of sites would be redeveloped; even with the Higher Density Alternative upzoning, most parcels would not redevelop. The parcels included in the Mixed-Use Opportunity Areas were among those identified as most likely to redevelop in the Higher Density Alternative.

The Mixed-Use Opportunity Areas approach provides an additional story of allowable development compared to the Higher Density Alternative, hence the slightly larger unit totals in the C-E and C-NS zoning districts.

In the C-SO zoning district, the Higher Density Alternative designated all parcels located between Ensenada and Colusa Avenues as likely to be redeveloped with upzoning. These parcels are not designated as Mixed-Use Opportunity Areas. As a result, the unit totals for the C-SO zoning district are slightly lower in the Planning Commission

recommendation than the Higher Density Alternative, even with the additional permitted story of development.

Attachment 4

NOTICE OF PUBLIC HEARING
BERKELEY CITY COUNCIL

ADOPTION OF ZONING ORDINANCE AND GENERAL PLAN AMENDMENTS TO ENCOURAGE HOUSING ALONG COLLEGE AVENUE, SHATTUCK AVENUE AND SOLANO AVENUE

The public may participate in this hearing by remote video or in-person.

Notice is hereby given by the City Council of the City of Berkeley that on TUESDAY, December 1, 2026 at 6:00 P.M. a public hearing will be conducted to consider the Department of Planning and Development's proposed amendments to the City's Zoning Ordinance (Title 23), Zoning Map, and General Plan Amendment to increase housing capacity along higher resource areas such as Solano Avenue, Shattuck Avenue, and College Avenue, consistent with the City's Housing Element and Affirmatively Furthering Fair Housing (AFFH) obligations, per Program 27— Priority Development Areas, Commercial and Transit Corridors and Program 33—Zoning Code Amendment: Residential of the 2023-2031 Housing Element Update.

The recommended Zoning Ordinance and Map amendments require conforming edits to the General Plan before they can be adopted by the City Council. The proposed Plan amendments include revisions to the Neighborhood Commercial Area land use description and designations, as well as technical edits to reflect the recommended Zoning Ordinance amendments.

Proposed amendments affect the following Chapters of Title 23: 23.204 (Commercial Districts), 23.302 (Supplemental Use Regulations), 23.322 (Parking and Loading), 23.404 (Common Permit Requirements), 23.502 (Glossary) and the Zoning Map.

LOCATION: The proposed Zoning Ordinance amendments would apply to parcels currently located in the Elmwood Commercial (C-E), Solano Avenue Commercial (C-SO), and North Shattuck Commercial (C-NS) zoning districts. The amendments would also apply to APN 52-1567-62-12, a parcel located adjacent to the College Avenue post office, currently zoned Residential Multi-Unit 2 (R-2), and four parcels adjacent to the Andronico's supermarket on Solano Avenue (APNs 61-2611-25-4, 61-2611-4, 61-2611-25-3, and a portion of APN 61-2611-28-1), currently zoned Residential Multi-Unit 1 (R-1).

The hearing will be held on December 1, 2026, at 6:00 p.m. in the School District Board Room, located at 1231 Addison Street, Berkeley CA 94702.

A copy of the agenda material for this hearing will be available on the City's website at https://berkeleyca.gov/ as of November 19, 2026. **Once posted, the agenda for this meeting will include a link for public participation using Zoom video technology, as well as any health and safety requirements for in-person attendance.**

For further information, please contact Principal Planner Justin Horner at jhorner@berkeleyca.gov. Written comments should be mailed or delivered directly to the City Clerk, 2180 Milvia Street, Berkeley, CA 94704, or e-mailed

to council@berkeleyca.gov in order to ensure delivery to all Councilmembers and inclusion in the agenda packet.

Communications to the Berkeley City Council are public record and will become part of the City's electronic records, which are accessible through the City's website. **Please note: e-mail addresses, names, addresses, and other contact information are not required, but if included in any communication to the City Council, will become part of the public record.** If you do not want your e-mail address or any other contact information to be made public, you may deliver communications via U.S. Postal Service or in person to the City Clerk. If you do not want your contact information included in the public record, please do not include that information in your communication. Please contact the City Clerk at (510) 981-6900 or clerk@berkeleyca.gov for further information.

Published: November 20, 2026 – The Berkeley Voice

Public Hearing required by BMC 23.404.040, BMC 23.412.050 and Govt Code 65853; notice provided according to Govt Code 65090 and BMC 23.404.040.

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I hereby certify that the Notice for this Public Hearing of the Berkeley City Council was posted at the display case located near the walkway in front of the Maudelle Shirek Building, 2134 Martin Luther King Jr. Way, as well as on the City's website, on November 19, 2026.

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Mark Numainville, City Clerk
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