Appendix A. Notice of Preparation

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City of Brea
Notice of Preparation of a Draft Program Environmental Impact Report for "Brea 2050: Focused General Plan Update and Brea Core Specific Plan" and Notice of Scoping Meeting

Date: August 25, 2025

Subject: Notice of Preparation of a Draft Program Environmental Impact Report for "Brea 2050: Focused General Plan Update and Brea Core Specific Plan" and Notice of Scoping Meeting

To: State Clearinghouse, Responsible and Trustee Agencies, Interested Individuals and Organizations

Lead Agency: City of Brea, Community Development Department, Planning Division

Project Title: Brea 2050: Focused General Plan Update and Brea Core Specific Plan

NOTICE IS HEREBY GIVEN that the City of Brea (City) will prepare a Program Environmental Impact Report (PEIR) for "Brea 2050: Focused General Plan Update (Focused GPU) and Brea Core Specific Plan (BCSP)" (together referred to as the project). The purpose of this notice is to (1) serve as a Notice of Preparation (NOP) of the PEIR pursuant to the California Environmental Quality Act (CEQA) Guidelines, Section 15082; (2) advise and solicit comments and suggestions regarding the scope and content of the PEIR to be prepared for the project; and (3) notice the public scoping meeting.

NOTICE OF PREPARATION: The City, as the lead agency under CEQA, is soliciting public and agency input. The City requests that responsible and trustee agencies respond in a manner consistent with the CEQA Guidelines, Section 15082(b). Pursuant to California Public Resources Code, Section 21080.4, responsible and trustee agencies must submit any comments in response to this notice no later than 30 days after receipt. The public review period will start on Monday, August 25, 2025, and will close on Wednesday, September 24, 2025. A copy of the NOP can be viewed electronically on the City's website at: https://www.cityofbrea.gov/166/Projects-in-Process and https://brea.generalplan.org/, as well as at the City of Brea, Community Development Department Counter (Planning Division), 3rd floor, 1 Civic Center Circle, Brea CA 92821.

WRITTEN COMMENTS: We ask that any person wishing to comment on the NOP provide written comments by the end of the public review period at 5:00 p.m., Wednesday, September 24, 2025. Comments may be submitted in hard copy/mail to City of Brea, Planning Division, 1 Civic Center Circle, Brea, CA 92821, or via email at brea2050@cityofbrea.gov. Please include **"CEQA Comments for Brea 2050: Focused GPU and BCSP"** in the subject line.

PUBLIC SCOPING MEETING: The City will hold a scoping meeting in conjunction with this NOP to present the project and the PEIR process and to provide an opportunity for agency representatives and the public to assist the lead agency in determining the scope and content of the environmental analysis for the PEIR. The public scoping meeting will be held during the time and location listed below:

Date: Thursday, September 4, 2025
Time: 6:00 p.m.– 7:00 p.m.
Location: City of Brea City Hall
Conference Center (2nd floor)
1 Civic Center Circle
Brea, CA 92821

PROJECT LOCATION: The project encompasses the City and its sphere of influence, collectively referred to as the planning area. The City is in the northeastern corner of Orange County, where the boundaries of Orange, Los Angeles, and San Bernardino Counties converge. The City is bordered by unincorporated Orange County land and the Los Angeles County line to the north; Chino Hills State Park and the San Bernardino County line to the east; the Cities of Yorba Linda, Placentia, and Fullerton to the south; and the City of La Habra to the west. The Orange Freeway (State Route [SR-] 57) bisects the City from north to south. The three major east–west roadways are Imperial Highway (SR-90), Carbon Canyon Road (SR-142), and Lambert Road.

The BCSP area is generally bounded by Lambert Road to the north, Imperial Highway (SR-90) to the south, Berry Street to the west, and SR-57 and Associated Road to the east. Figure 1, Regional Location, shows the planning area in a regional context, and Figure 2, Proposed Focused General Plan Update Land Uses, illustrates the City's planning boundaries, including its sphere of influence and the BCSP area.

PROJECT BACKGROUND: State law requires that every local jurisdiction adopt a comprehensive, long-term general plan, typically with a 20-year horizon. A general plan represents the community's view of its future and is often referred to as a blueprint for growth and development. State law requires that a general plan contain eight elements: land use, circulation, housing, open space, noise, safety, environmental justice, and conservation. General plans must be periodically updated to respond to new state laws, changing conditions, and emerging issues and opportunities. The purpose of the Brea General Plan is to create a policy framework that articulates a vision for the City's long-term physical form and development while preserving and enhancing the quality of life for the City's residents.

In 2003, the City adopted the Brea General Plan. The 2003 Brea General Plan comprises six chapters—Introduction, Community Development, Housing, Community Resources, Community Services, and Public Safety—that cover the required elements and additional topics of local relevance. Since 2003, the Housing chapter has been updated three times in compliance with California Housing Element law, with the most recent update adopted in August 2022 for the 6th Cycle Housing Element. No updates to the current Housing Element are expected to occur because of the Focused GPU or preparation of the new BCSP. In addition, the Public Safety chapter was last amended in 2021 in conjunction with the 6th Cycle Housing Element, and the land use designation map has been periodically amended to accommodate specific projects. At the time of its preparation, the 2003 Brea General Plan was based on forecasting and projections with a horizon year of 2020. As such, it is no longer a visioning document for the community and is due for an update.

In 2017, the City adopted the Brea Envisions Community Strategic Plan (2017 Brea Envisions) that identified several initiatives and values that the community had for the City's future. Following the adoption of the 2017 Brea Envisions, the City began to prepare a long-range plan for the central core of the City, known as the Brea Core Plan. As a first step, the Brea Connecting the Core Active Transportation Plan (Core Active Transportation Plan) was prepared and adopted in 2020. The 2020 Core Active Transportation Plan focuses on improving safety and access along major east–west corridors such as Lambert Road and Imperial Highway (SR-90), as well as north–south corridors such as Brea Boulevard and State College Boulevard. It identifies mobility challenges and recommends a toolbox of potential solutions to improve circulation within the City's core.

PROPOSED PROJECT: The project includes a focused update to, and implementation of, the 2003 Brea General Plan, specifically the Community Development (land use, circulation, economic development), Community Resources (open space), Community Services (recreation, education, cultural arts), and Public Safety chapters, with an emphasis on the land use and circulation components. Table 1, Existing, 2003 Brea General Plan, and Proposed Land Use Summary, includes the existing conditions and the proposed Focused GPU land use summary. As detailed in Table 1, the Focused GPU would allow for additional housing units and non-residential square footage across various land use categories within the incorporated City limits and would continue to allow for limited housing units in the unincorporated sphere of influence, consistent with the 2003 Brea General Plan. No changes to the development potential of existing Specific

Plans are proposed as part of the project. Figure 2 illustrates the City boundary and the City's sphere of influence, which together compose the Focused GPU planning area.

The project also includes a new specific plan, the BCSP, which would implement the values identified in the 2017 Brea Envisions and the goals, policies, and recommendations of the 2020 Core Active Transportation Plan. The BCSP would establish land uses, provide mobility recommendations and streetscape improvements, propose infrastructure upgrades to support proposed development, and outline implementation strategies for the BCSP area. This area is identified as the Specific Plan – Brea Core Study Area on Figure 2, which depicts the proposed Focused GPU land uses. Figure 3, Proposed Brea Core Specific Plan Zoning, illustrates the proposed zoning for the BCSP area. The BCSP would allow for the development of 4,752 residential units and 6,379,588 square feet of non-residential uses within the BCSP area.

Table 1. Existing, 2003 Brea General Plan, and Proposed Land Use Summary

General Plan Designation	Existing Conditions				2003 Brea General Plan				Proposed General Plan Update			
	Units	Pop.	NRSF	Jobs	Units	Pop.	NRSF	Jobs	Units	Pop.	NRSF	Jobs
Cemetery	–	–	–	–	–	–	–	–	–	–	–	–
General Commercial	–	–	285,349	690	–	–	362,776	874	–	–	351,758	848
General Industrial	–	–	4,489,591	10,855	–	–	5,178,449	12,478	–	–	5,178,449	12,478
High Density Residential	2,556	7,285	–	–	2,592	7,388	101,393	244	2,677	7,630	–	–
Hillside Residential	127	361	–	–	615	1,752	–	770	615	1,752	–	–
Light Commercial	–	–	132,251	320	–	–	135,153	326	–	–	135,153	326
Light Industrial	–	–	7,477,742	18,080	–	–	10,481,374	27,073	–	–	10,481,374	25,256
Low Density Residential	6,668	19,005	–	–	6,702	19.100	6,819	16	6,775	19,310	–	–
Medium Density Residential	1,545	4,403	–	–	1,575	4,489	–	–	1,575	4,489	–	–
MU-18	130	369	160,691	389	256	730	197,495	476	256	730	197,495	476
MU-50	1,692	4,823	1,752,420	4,237	1,724	4,913	2,680,921	4,643	2,727	7,772	5,047,309	12,162
Open Space	–	–	–	–	–	–	–	–	–	–	–	–
Parcelized ROW	–	–	–	–	–	–	–	–	–	–	–	–
Parks/Recreation	–	–	843,197	2,039	24	69	1,403,516	3,382	–	–	974,932	2,349
Public Facilities	–	–	33,598	81	27	78	76,737	185	–	–	76,502	184
Recreational Commercial	–	–	49,657	120	–	–	369,077	120	–	–	369,077	889
Specific Plan – Birch Hills	475	1,353	572,055	1,383	475	1,353	572,055	1,383	475	1,353	572,055	1,383
Specific Plan – Brea 265	–	–	–	–	1,100	3,134	17,424	42	1,100	3,134	17,424	42

Table 1. Existing, 2003 Brea General Plan, and Proposed Land Use Summary

General Plan Designation	Existing Conditions				2003 Brea General Plan				Proposed General Plan Update			
	Units	Pop.	NRSF	Jobs	Units	Pop.	NRSF	Jobs	Units	Pop.	NRSF	Jobs
Specific Plan – Brea Core Study Area (Proposed)	**1,417**	**4,040**	**5,113,863**	**12,365**	**2,461**	**7,013**	**6,087,642**	**14,669**	**4,752**	**13,542**	**6,379,588**	**15,373**
Specific Plan – Brea Industrial[1]	–	–	570,000	1,378	–	–	806,078	1,942	–	–	806,078	1,942
Specific Plan – Olinda Ranch	622	1,773	–	–	622	1.773	–	–	622	1,773	–	–
Specific Plan – Tomlinson Park	321	915	–	–	321	915	–	–	321	915	–	–
Specific Plan – Tonner Hills	793	2,259	–	–	793	2,259	–	–	793	2,259	–	–
City Limit Total	**16,345**	**46,585**	**21,480,414**	**51,937**	**19,287**	**54,967**	**28,476,908**	**68,624**	**22,688**	**64,660**	**30,587,193**	**73,709**
Hillside Residential	–	–	–	–	1,048	2,987	–	–	1,048	2,987	–	–
Open Space	–	–	–	–	–	–	–	–	–	–	–	–
Parks/Recreation	–	–	–	–	–	–	–	–	–	–	–	–
Public Facilities	–	–	–	–	–	–	–	–	–	–	–	–
SOI Total	**–**	**–**	**–**	**–**	**1,048**	**2,987**	**–**	**–**	**1,048**	**2,987**	**–**	**–**
Grand Total	**16,345**	**46,585**	**21,480,414**	**51,937**	**20,335**	**57,954**	**28,476,908**	**68,624**	**23,736**	**67,647**	**30,587,193**	**73,709**

Notes: MU = Mixed Use; NRSF = non-residential square feet; Pop = population; ROW = right-of-way; SOI = sphere of influence

[1] Additional development potential exists within the Brea Industrial Specific Plan area under the existing/adopted Specific Plan; this development potential (beyond existing conditions) is reflected accordingly in the Proposed General Plan Update development potential totals.

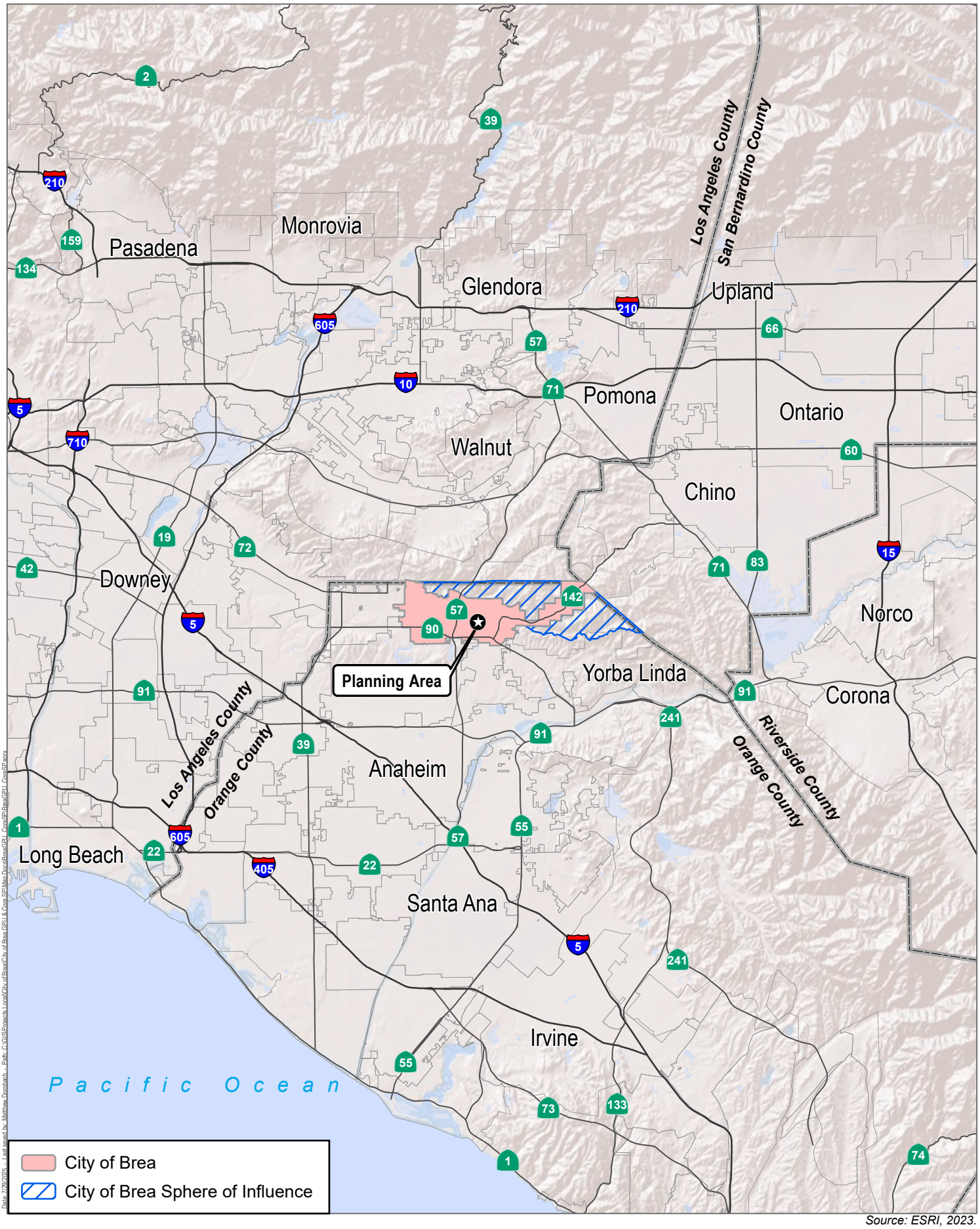
POTENTIAL ENVIRONMENTAL EFFECTS: In compliance with CEQA Guidelines, Sections 15060(d) and 15082, the City will not be preparing an initial study and will begin work directly on the Draft PEIR. CEQA Guidelines, Section 15168, states that a PEIR may be prepared on a series of actions that can be characterized as one large project and are related either (1) geographically; (2) as logical parts in the chain of contemplated actions; (3) in connection with issuance of rules, regulations, plans, or other general criteria to govern the conduct of a continuing program; or (4) as individual activities carried out under the same authorizing statutory or regulatory authority and having generally similar environmental effects that can be mitigated in similar ways. The PEIR will be prepared in accordance with the requirements of the CEQA Statute and Guidelines, as amended. Pursuant to CEQA Guidelines, Section 15146, the degree of specificity in the PEIR will correspond to the degree of specificity involved in the Focused GPU and BCSP. The PEIR will focus on the primary effects that can be expected to follow from adoption of the project and will not be as detailed as an EIR on the specific development or construction projects that may follow. However, the PEIR can serve to streamline environmental review of future projects, including any future updates to the Brea City Code (BCC), which may be necessary to create consistency with the Focused GPU and/or BCSP.

The City's preliminary review anticipates that the project would not result in potentially significant impacts as it relates to the Agriculture and Forestry Resources and Mineral Resources impact areas. The City will

focus on potentially significant effects of the project in the PEIR while briefly explaining the reasons that other effects will not be potentially significant. The City anticipates that the project could result in potentially significant impacts for the following impact areas: 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, Population and Housing, Public Services, Recreation, Transportation, Tribal Cultural Resources, Utilities and Service Systems, and Wildfire.

The Draft PEIR will address the short- and long-term effects of the project on the environment. Mitigation measures will be proposed for impacts that are determined to be potentially significant. In addition, the PEIR will describe a range of reasonable alternatives to the project in accordance with CEQA Guidelines, Section 15126, which would feasibly attain most of the basic objectives of the project but would avoid or substantially lessen any of the significant effects of the project.

SCOPING REVIEW PERIOD: This NOP will be available for review from Monday, August 25, 2025, to Wednesday, September 24, 2025, on the City's website at https://www.cityofbrea.gov/166/Projects-in-Process and https://brea.generalplan.org/, as well as at the City's Community Development Department Counter (Planning Division), 3rd floor, 1 Civic Center Circle, Brea, CA 92821.



Source: ESRI, 2023.

Harris & Associates

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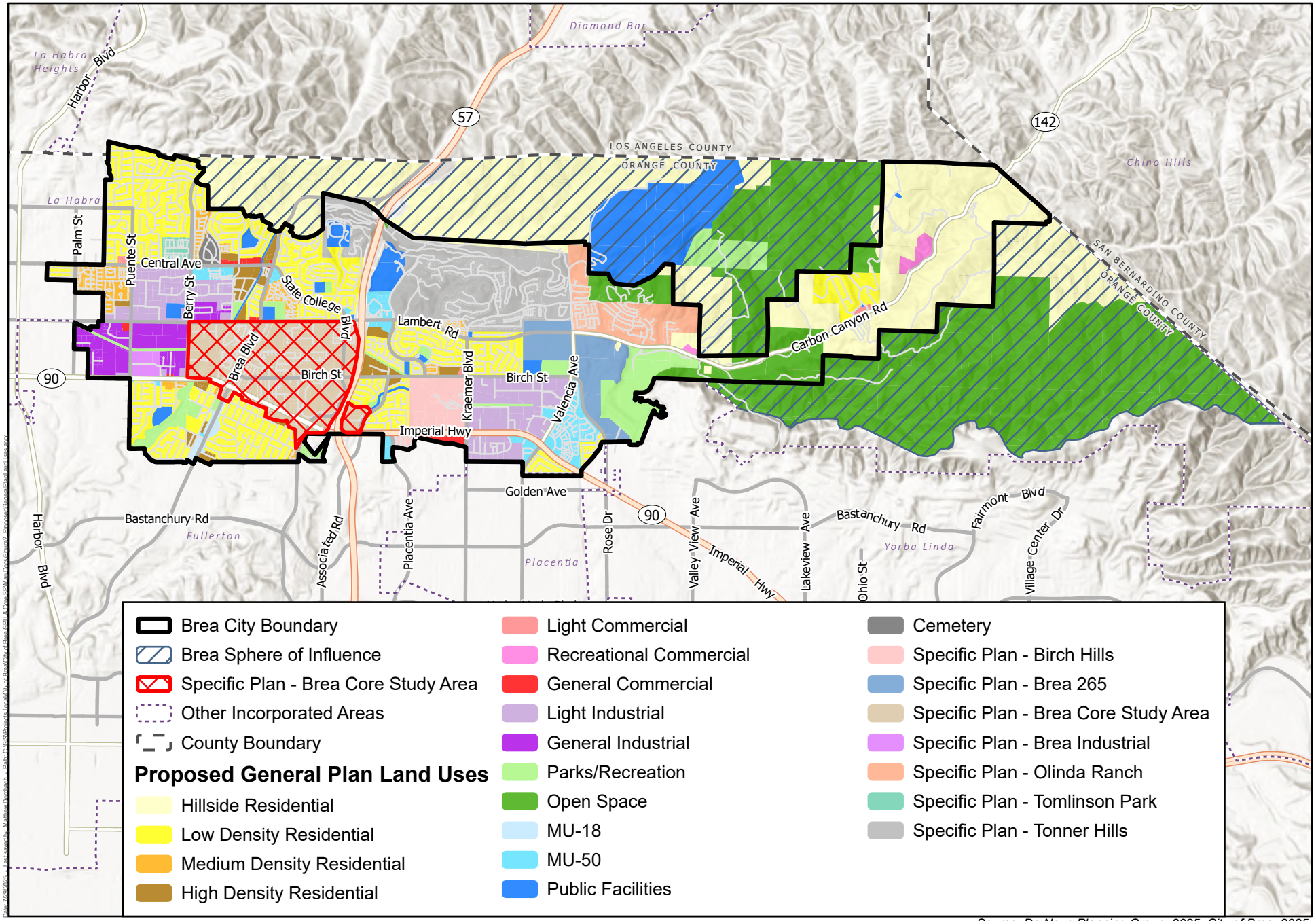
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Figure 1

Regional Location

Focused General Plan Update and Brea Core Specific Plan



Source: De Novo Planning Group, 2025; City of Brea, 2025.

Harris & Associates

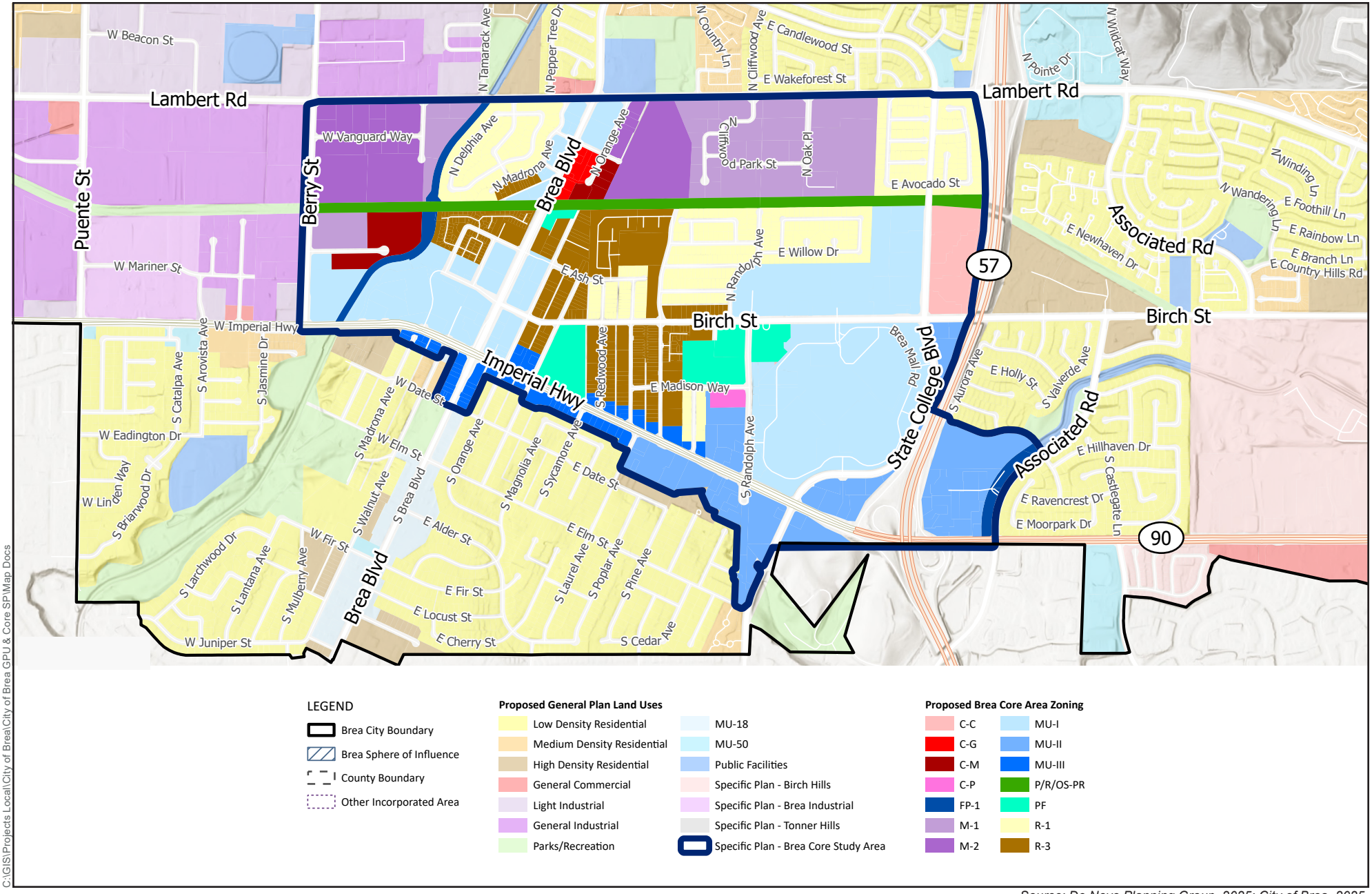
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Figure 2

Proposed Focused General Plan Update Land Uses



LEGEND

- Brea City Boundary
- Brea Sphere of Influence
- County Boundary
- Other Incorporated Area

Proposed General Plan Land Uses

- Low Density Residential
- Medium Density Residential
- High Density Residential
- General Commercial
- Light Industrial
- General Industrial
- Parks/Recreation
- MU-18
- MU-50
- Public Facilities
- Specific Plan - Birch Hills
- Specific Plan - Brea Industrial
- Specific Plan - Tonner Hills
- Specific Plan - Brea Core Study Area

Proposed Brea Core Area Zoning

- C-C
- C-G
- C-M
- C-P
- FP-1
- M-1
- M-2
- MU-I
- MU-II
- MU-III
- P/R/OS-PR
- PF
- R-1
- R-3

C:\GIS\Projects Local\City of Brea\City of Brea GPU & Core SP\Map Docs

Source: De Novo Planning Group, 2025; City of Brea, 2025.

Harris & Associates

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Figure 3

Proposed Brea Core Specific Plan Zoning

Focused General Plan Update and Brea Core Specific Plan

Appendix B. Notice of Preparation Comment Letters

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California Department of Transportation

DISTRICT 12
1750 East 4th Street, Suite 100 | SANTA ANA, CA 92705
(657) 328-6000 | FAX (657) 328-6522 TTY 711
https://dot.ca.gov/caltrans-near-me/district-12

September 22, 2025

Ms. Joanne Hwang
City Planner
City of Brea
1 Civic Center Circle
Brea, CA. 92821

File: LDR/CEQA
SCH: 2025081123
12-ORA-2025-02916
SR-90, SR-57, SR-142

Dear Ms. Hwang,

Thank you for including the California Department of Transportation (Caltrans) in the review of the Notice of Preparation (NOP) of a Draft Environmental Impact Report (DEIR) for City of Brea's: Brea 2050 - Focused General Plan Update and Brea Core Specific Plan. The project includes a focused update to, and implementation of, the 2003 Brea General Plan, specifically the Community Development (land use, circulation, economic development), Community Resources (open space), Community Services (recreation, education, cultural arts), and Public Safety chapters, with an emphasis on the land use and circulation components. The Focused General Plan Update (GPU) would allow for additional housing units and non-residential square footage across various land use categories within the incorporated City limits and would continue to allow for limited housing units in the unincorporated sphere of influence, consistent with the 2003 Brea General Plan. The project also includes a new specific plan, the Brea Core Specific Plan (BCSP), which would implement the values identified in the 2017 Brea Envisions and the goals, policies, and recommendations of the 2020 Core Active Transportation Plan. The Focused GPU would allow for the grand total of 23,736 residential units and 30,587,193 SF of non-residential uses within the City's planning area, which includes development of 4,752 residential units and 6,379,588 square feet of non-residential uses within the BCSP area.

The project encompasses the City and its sphere of influence, collectively referred to as the planning area. The City is in the northeastern corner of Orange County, where the boundaries of Orange, Los Angeles, and San Bernardino Counties converge. The City is bordered by unincorporated Orange County land and the Los Angeles County line to the north; Chino Hills State Park and the

San Bernardino County line to the east; the Cities of Yorba Linda, Placentia, and Fullerton to the south; and the City of La Habra to the west. The Orange Freeway State Route 57 (SR-57) bisects the City from north to south. The three major east–west roadways are Imperial Highway (SR-90), Carbon Canyon Road (SR-142), and Lambert Road.

State Route 57, State Route 90, and State Route 142 are all owned and operated by Caltrans. Therefore, Caltrans is a commenting agency on this project, and has the following comments:

1. Caltrans recognizes there is a strong link between transportation and land use. Development can have a significant impact on traffic and congestion on State transportation facilities. In particular, the pattern of land use can affect both local vehicle miles traveled and the number of trips. Caltrans supports collaboration with local agencies to work towards a safe, functional, interconnected, multi-modal transportation network integrated through applicable "smart growth" type land use planning and policies. Additionally, Caltrans supports the City's progress in meeting its Regional Housing Needs Assessment (RHNA) allocation, and we encourage the City to promote the development of housing units for a variety of income levels.

2. Encourage the use of transit among future residents, visitors, and workers of the proposed areas of developments. Increasing multimodal transportation will lead to a reduction to congestion, Vehicle Miles Traveled and improve air quality.

3. Caltrans supports the integration of the 2020 Core Active Transportation Plan into the new BCSP. Caltrans encourages objectives of infill, mixed-use, and live/work development that allows for creating spaces that are "more walkable, bike-friendly, and transit-oriented."

4. Caltrans supports the City's plan to implement high-quality Complete Streets that are safe and accessible for people of all ages and abilities. Caltrans also encourages the City to use safety measures such as physically separated sidewalks and bike lanes, pedestrian-oriented LED lighting, high-visibility continental crosswalk striping, raised crosswalks, ADA curb ramps, refuge islands, wayfinding signage, and safe connections to existing and proposed bicycle facilities. These improvements will also promote regional connectivity, improve air quality, reduce congestion, promote improved first-/last-mile connections, and increase safety for all modes of transportation.

5. During any future construction, please ensure that appropriate detours and safety measures are in place that prioritize the mobility, access, and safety of bicyclists, pedestrians, and transit users.

6. Please note that future projects should not present adverse impacts to the overall transportation system including traffic circulation and the local State. Highway Systems (SHS). If future developments disrupt or impede traffic circulation or the local State Highway System, Caltrans will request a Traffic Impact Analysis (TIA) of these assets. The TIA will also need to include existing and future average daily traffic volumes, traffic generation including peak hour, traffic distribution, Highway Capacity Manual (HCM) intersection analysis along with current and projected capacities of local street, and state highways or freeways including ramps that might be impacted.

7. When analyzing future proposed projects, please note potential short- and long-term traffic impacts with respect to regional vehicle miles traveled (VMT's), please use the Governor's Office of Planning and Research Guidance to identify VMT related impacts.

8. If future impact analysis leads to findings of significance on State facilities, please coordinate with Caltrans District 12 Local Development on development of a Traffic Mitigation Agreement or similar effort.

9. Any work performed within Caltrans right-of-way (R/W) will require discretionary review and approval by Caltrans and an encroachment permit will be required for any work within the Caltrans R/W prior to construction. Prior to submitting to Caltrans Permit's branch, applicant should fill out Applicant's Checklist to Determine Applicable Review Process (QMAP List) Form TR-0416 to determine if project oversight/coordination with Caltrans Project Manager is needed. Applicant must submit a signed Standard Encroachment Permit application form TR-0100 along with a deposit payable to Caltrans. Deposit amount will be dependent on when the application is submitted. Public corporations are legally exempt from encroachment permit fees. However, contractors working for public corporations are not exempt from fees. Please note that all utility work should be disclosed prior to permit submittal, and utility companies are to apply for separate permits for their corresponding work.

10. Project plans and traffic control plans must be stamped and signed by a licensed engineer. For all plans, including traffic control plans, Caltrans R/W lines should be clearly labeled, which includes existing and proposed (if there are any changes to Caltrans R/W), the north arrow, the edge of pavement, and edge of the sidewalk, if applicable. When submitting the application, please include final Environmental Clearance Documentation, relevant design details including design exception approvals and construction and drainage plans, traffic control plans, traffic management plan and traffic impact study if proposed traffic delay of 30 minutes above normal recurring traffic delay is anticipated, any Caltrans R/W certifications if needed, maintenance agreement as needed, shoring plans for any excavation 5-feet or more, ADA certification, and any letter of authorizations.

11. Please submit all applications and associated documents/plans via email to D12.Permits@dot.ca.gov until further notice. Caltrans Encroachment Permits will be transitioning to an online web portal base for all applications in Fall 2023. Further details to be announced on the Caltrans Encroachment Permits homepage. Additional information regarding encroachment permits may be obtained by contacting the Caltrans Permits Office at (657) 328-6246. For specific details on Caltrans Encroachment Permits procedure and any future updates regarding the application process and permit rates, please visit the Caltrans Encroachment Permits homepage at https://dot.ca.gov/programs/traffic-operations/ep.

Caltrans' mission is to improve lives and communities through transportation. Please continue to coordinate with Caltrans for any future developments that could potentially impact State transportation facilities. If you have any questions, please do not hesitate to contact Julie Lugaro at Julie.lugaro@dot.ca.gov.

Sincerely,

Scott Shelley (Sep 22, 2025 15:59:12 PDT)

Scott Shelley
Branch Chief,
Local Development Review - Climate Change - Transit Grants
Caltrans, District 12

NATIVE AMERICAN HERITAGE COMMISSION

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Michelle Carr

NAHC HEADQUARTERS
1550 Harbor Boulevard
Suite 100
West Sacramento,
California 95691
(916) 373-3710
nahc@nahc.ca.gov

August 26, 2025

Joanne Hwang
City of Brea
1 Civic Center Circle
Brea CA 92821

Re 2025081123 Brea 2050: Focused General Plan Update and Brea Core Specific Plan Project Orange County

Dear Ms. Hwang:

The Native American Heritage Commission (NAHC) has received the Notice of Preparation (NOP), Draft Environmental Impact Report (DEIR) or Early Consultation for the project referenced above. The California Environmental Quality Act (CEQA) (Pub. Resources Code §21000 et seq.), specifically Public Resources Code §21084.1, states that a project that may cause a substantial adverse change in the significance of a historical resource, is a project that may have a significant effect on the environment. (Pub. Resources Code § 21084.1; Cal. Code Regs., tit.14, §15064.5 (b) (CEQA Guidelines §15064.5 (b)). If there is substantial evidence, in light of the whole record before a lead agency, that a project may have a significant effect on the environment, an Environmental Impact Report (EIR) shall be prepared. (Pub. Resources Code §21080 (d); Cal. Code Regs., tit. 14, § 5064 subd.(a)(1) (CEQA Guidelines §15064 (a)(1)). In order to determine whether a project will cause a substantial adverse change in the significance of a historical resource, a lead agency will need to determine whether there are historical resources within the area of potential effect (APE).

CEQA was amended significantly in 2014. Assembly Bill 52 (Gatto, Chapter 532, Statutes of 2014) (AB 52) amended CEQA to create a separate category of cultural resources, "tribal cultural resources" (Pub. Resources Code §21074) and provides that a project with an effect that may cause a substantial adverse change in the significance of a tribal cultural resource is a project that may have a significant effect on the environment. (Pub. Resources Code §21084.2). Public agencies shall, when feasible, avoid damaging effects to any tribal cultural resource. (Pub. Resources Code §21084.3 (a)). **AB 52 applies to any project for which a notice of preparation, a notice of negative declaration, or a mitigated negative declaration is filed on or after July 1, 2015.** If your project involves the adoption of or amendment to a general plan or a specific plan, or the designation or proposed designation of open space, on or after March 1, 2005, it may also be subject to Senate Bill 18 (Burton, Chapter 905, Statutes of 2004) (SB 18). **Both SB 18 and AB 52 have tribal consultation requirements**. If your project is also subject to the federal National Environmental Policy Act (42 U.S.C. § 4321 et seq.) (NEPA), the tribal consultation requirements of Section 106 of the National Historic Preservation Act of 1966 (154 U.S.C. 300101, 36 C.F.R. §800 et seq.) may also apply.

The NAHC recommends consultation with California Native American tribes that are traditionally and culturally affiliated with the geographic area of your proposed project as early as possible in order to avoid inadvertent discoveries of Native American human remains and best protect tribal cultural resources. Below is a brief summary of portions of AB 52 and SB 18 as well as the NAHC's recommendations for conducting cultural resources assessments.

Consult your legal counsel about compliance with AB 52 and SB 18 as well as compliance with any other applicable laws.

AB 52

AB 52 has added to CEQA the additional requirements listed below, along with many other requirements:

1. Fourteen Day Period to Provide Notice of Completion of an Application/Decision to Undertake a Project: Within fourteen (14) days of determining that an application for a project is complete or of a decision by a public agency to undertake a project, a lead agency shall provide formal notification to a designated contact of, or tribal representative of, traditionally and culturally affiliated California Native American tribes that have requested notice, to be accomplished by at least one written notice that includes:

- **a.** A brief description of the project.
- **b.** The lead agency contact information.
- **c.** Notification that the California Native American tribe has 30 days to request consultation. (Pub. Resources Code §21080.3.1 (d)).
- **d.** A "California Native American tribe" is defined as a Native American tribe located in California that is on the contact list maintained by the NAHC for the purposes of Chapter 905 of Statutes of 2004 (SB 18). (Pub. Resources Code §21073).

2. Begin Consultation Within 30 Days of Receiving a Tribe's Request for Consultation and Before Releasing a Negative Declaration, Mitigated Negative Declaration, or Environmental Impact Report: A lead agency shall begin the consultation process within 30 days of receiving a request for consultation from a California Native American tribe that is traditionally and culturally affiliated with the geographic area of the proposed project. (Pub. Resources Code §21080.3.1, subds. (d) and (e)) and prior to the release of a negative declaration, mitigated negative declaration or Environmental Impact Report. (Pub. Resources Code §21080.3.1(b)).

- **a.** For purposes of AB 52, "consultation shall have the same meaning as provided in Gov. Code §65352.4 (SB 18). (Pub. Resources Code §21080.3.1 (b)).

3. Mandatory Topics of Consultation If Requested by a Tribe: The following topics of consultation, if a tribe requests to discuss them, are mandatory topics of consultation:

- **a.** Alternatives to the project.
- **b.** Recommended mitigation measures.
- **c.** Significant effects. (Pub. Resources Code §21080.3.2 (a)).

4. Discretionary Topics of Consultation: The following topics are discretionary topics of consultation:

- **a.** Type of environmental review necessary.
- **b.** Significance of the tribal cultural resources.
- **c.** Significance of the project's impacts on tribal cultural resources.
- **d.** If necessary, project alternatives or appropriate measures for preservation or mitigation that the tribe may recommend to the lead agency. (Pub. Resources Code §21080.3.2 (a)).

5. Confidentiality of Information Submitted by a Tribe During the Environmental Review Process: With some exceptions, any information, including but not limited to, the location, description, and use of tribal cultural resources submitted by a California Native American tribe during the environmental review process shall not be included in the environmental document or otherwise disclosed by the lead agency or any other public agency to the public, consistent with Government Code §6254 (r) and §6254.10. Any information submitted by a California Native American tribe during the consultation or environmental review process shall be published in a confidential appendix to the environmental document unless the tribe that provided the information consents, in writing, to the disclosure of some or all of the information to the public. (Pub. Resources Code §21082.3 (c)(1)).

6. Discussion of Impacts to Tribal Cultural Resources in the Environmental Document: If a project may have a significant impact on a tribal cultural resource, the lead agency's environmental document shall discuss both of the following:

- **a.** Whether the proposed project has a significant impact on an identified tribal cultural resource.
- **b.** Whether feasible alternatives or mitigation measures, including those measures that may be agreed to pursuant to Public Resources Code §21082.3, subdivision (a), avoid or substantially lessen the impact on the identified tribal cultural resource. (Pub. Resources Code §21082.3 (b)).

7. Conclusion of Consultation: Consultation with a tribe shall be considered concluded when either of the following occurs:

a. The parties agree to measures to mitigate or avoid a significant effect, if a significant effect exists, on a tribal cultural resource; or

b. A party, acting in good faith and after reasonable effort, concludes that mutual agreement cannot be reached. (Pub. Resources Code §21080.3.2 (b)).

8. Recommending Mitigation Measures Agreed Upon in Consultation in the Environmental Document: Any mitigation measures agreed upon in the consultation conducted pursuant to Public Resources Code §21080.3.2 shall be recommended for inclusion in the environmental document and in an adopted mitigation monitoring and reporting program, if determined to avoid or lessen the impact pursuant to Public Resources Code §21082.3, subdivision (b), paragraph 2, and shall be fully enforceable. (Pub. Resources Code §21082.3 (a)).

9. Required Consideration of Feasible Mitigation: If mitigation measures recommended by the staff of the lead agency as a result of the consultation process are not included in the environmental document or if there are no agreed upon mitigation measures at the conclusion of consultation, or if consultation does not occur, and if substantial evidence demonstrates that a project will cause a significant effect to a tribal cultural resource, the lead agency shall consider feasible mitigation pursuant to Public Resources Code §21084.3 (b). (Pub. Resources Code §21082.3 (e)).

10. Examples of Mitigation Measures That, If Feasible, May Be Considered to Avoid or Minimize Significant Adverse Impacts to Tribal Cultural Resources:

a. Avoidance and preservation of the resources in place, including, but not limited to:

i. Planning and construction to avoid the resources and protect the cultural and natural context.

ii. Planning greenspace, parks, or other open space, to incorporate the resources with culturally appropriate protection and management criteria.

b. Treating the resource with culturally appropriate dignity, taking into account the tribal cultural values and meaning of the resource, including, but not limited to, the following:

i. Protecting the cultural character and integrity of the resource.

ii. Protecting the traditional use of the resource.

iii. Protecting the confidentiality of the resource.

c. Permanent conservation easements or other interests in real property, with culturally appropriate management criteria for the purposes of preserving or utilizing the resources or places.

d. Protecting the resource. (Pub. Resource Code §21084.3 (b)).

e. Please note that a federally recognized California Native American tribe or a non-federally recognized California Native American tribe that is on the contact list maintained by the NAHC to protect a California prehistoric, archaeological, cultural, spiritual, or ceremonial place may acquire and hold conservation easements if the conservation easement is voluntarily conveyed. (Civ. Code §815.3 (c)).

f. Please note that it is the policy of the state that Native American remains and associated grave artifacts shall be repatriated. (Pub. Resources Code §5097.991).

11. Prerequisites for Certifying an Environmental Impact Report or Adopting a Mitigated Negative Declaration or Negative Declaration with a Significant Impact on an Identified Tribal Cultural Resource: An Environmental Impact Report may not be certified, nor may a mitigated negative declaration or a negative declaration be adopted unless one of the following occurs:

a. The consultation process between the tribes and the lead agency has occurred as provided in Public Resources Code §21080.3.1 and §21080.3.2 and concluded pursuant to Public Resources Code §21080.3.2.

b. The tribe that requested consultation failed to provide comments to the lead agency or otherwise failed to engage in the consultation process.

c. The lead agency provided notice of the project to the tribe in compliance with Public Resources Code §21080.3.1 (d) and the tribe failed to request consultation within 30 days. (Pub. Resources Code §21082.3 (d)).

The NAHC's PowerPoint presentation titled, "Tribal Consultation Under AB 52: Requirements and Best Practices" may be found online at: http://nahc.ca.gov/wp-content/uploads/2015/10/AB52TribalConsultation_CalEPAPDF.pdf

SB 18

SB 18 applies to local governments and requires local governments to contact, provide notice to, refer plans to, and consult with tribes prior to the adoption or amendment of a general plan or a specific plan, or the designation of open space. (Gov. Code §65352.3). Local governments should consult the Governor's Office of Planning and Research's "Tribal Consultation Guidelines," which can be found online at: https://www.opr.ca.gov/docs/09_14_05_Updated_Guidelines_922.pdf.

Some of SB 18's provisions include:

1. Tribal Consultation: If a local government considers a proposal to adopt or amend a general plan or a specific plan, or to designate open space it is required to contact the appropriate tribes identified by the NAHC by requesting a "Tribal Consultation List." If a tribe, once contacted, requests consultation the local government must consult with the tribe on the plan proposal. **A tribe has 90 days from the date of receipt of notification to request consultation unless a shorter timeframe has been agreed to by the tribe.** (Gov. Code §65352.3 (a)(2)).

2. No Statutory Time Limit on SB 18 Tribal Consultation. There is no statutory time limit on SB 18 tribal consultation.

3. Confidentiality: Consistent with the guidelines developed and adopted by the Office of Planning and Research pursuant to Gov. Code §65040.2, the city or county shall protect the confidentiality of the information concerning the specific identity, location, character, and use of places, features and objects described in Public Resources Code §5097.9 and §5097.993 that are within the city's or county's jurisdiction. (Gov. Code §65352.3 (b)).

4. Conclusion of SB 18 Tribal Consultation: Consultation should be concluded at the point in which:

- **a.** The parties to the consultation come to a mutual agreement concerning the appropriate measures for preservation or mitigation; or
- **b.** Either the local government or the tribe, acting in good faith and after reasonable effort, concludes that mutual agreement cannot be reached concerning the appropriate measures of preservation or mitigation. (Tribal Consultation Guidelines, Governor's Office of Planning and Research (2005) at p. 18).

Agencies should be aware that neither AB 52 nor SB 18 precludes agencies from initiating tribal consultation with tribes that are traditionally and culturally affiliated with their jurisdictions before the timeframes provided in AB 52 and SB 18. For that reason, we urge you to continue to request Native American Tribal Contact Lists and "Sacred Lands File" searches from the NAHC. The request forms can be found online at: http://nahc.ca.gov/resources/forms/.

NAHC Recommendations for Cultural Resources Assessments

To adequately assess the existence and significance of tribal cultural resources and plan for avoidance, preservation in place, or barring both, mitigation of project-related impacts to tribal cultural resources, the NAHC recommends the following actions:

1. Contact the appropriate regional California Historical Research Information System (CHRIS) Center (https://ohp.parks.ca.gov/?page_id=30331) for an archaeological records search. The records search will determine:

- **a.** If part or all of the APE has been previously surveyed for cultural resources.
- **b.** If any known cultural resources have already been recorded on or adjacent to the APE.
- **c.** If the probability is low, moderate, or high that cultural resources are located in the APE.
- **d.** If a survey is required to determine whether previously unrecorded cultural resources are present.

2. If an archaeological inventory survey is required, the final stage is the preparation of a professional report detailing the findings and recommendations of the records search and field survey.

- **a.** The final report containing site forms, site significance, and mitigation measures should be submitted immediately to the planning department. All information regarding site locations, Native American human remains, and associated funerary objects should be in a separate confidential addendum and not be made available for public disclosure.
- **b.** The final written report should be submitted within 3 months after work has been completed to the appropriate regional CHRIS center.

3. Contact the NAHC for:

a. A Sacred Lands File search. Remember that tribes do not always record their sacred sites in the Sacred Lands File, nor are they required to do so. A Sacred Lands File search is not a substitute for consultation with tribes that are traditionally and culturally affiliated with the geographic area of the project's APE.

b. A Native American Tribal Consultation List of appropriate tribes for consultation concerning the project site and to assist in planning for avoidance, preservation in place, or, failing both, mitigation measures.

4. Remember that the lack of surface evidence of archaeological resources (including tribal cultural resources) does not preclude their subsurface existence.

a. Lead agencies should include in their mitigation and monitoring reporting program plan provisions for the identification and evaluation of inadvertently discovered archaeological resources per Cal. Code Regs., tit. 14, §15064.5(f) (CEQA Guidelines §15064.5(f)). In areas of identified archaeological sensitivity, a certified archaeologist and a culturally affiliated Native American with knowledge of cultural resources should monitor all ground-disturbing activities.

b. Lead agencies should include in their mitigation and monitoring reporting program plans provisions for the disposition of recovered cultural items that are not burial associated in consultation with culturally affiliated Native Americans.

c. Lead agencies should include in their mitigation and monitoring reporting program plans provisions for the treatment and disposition of inadvertently discovered Native American human remains. Health and Safety Code §7050.5, Public Resources Code §5097.98, and Cal. Code Regs., tit. 14, §15064.5, subdivisions (d) and (e) (CEQA Guidelines §15064.5, subds. (d) and (e)) address the processes to be followed in the event of an inadvertent discovery of any Native American human remains and associated grave goods in a location other than a dedicated cemetery.

If you have any questions or need additional information, please contact me at my email address: Andrew.Green@NAHC.ca.gov.

Sincerely,

Andrew Green

Andrew Green
Cultural Resources Analyst

cc: State Clearinghouse

From: Hwang, Joanne
To: Amanda Tropiano
Cc: Perry Banner; Elizabeth Kim; William Halligan
Subject: FW: Brea Safety Element
Date: Tuesday, September 9, 2025 9:13:37 AM
Attachments: image001.png
image002.png
image003.png
image004.png
image005.png
image006.png
image007.png
image008.png
image009.png
image010.png
image011.png
Importance: High

Hello Amanda,

Please see Jason's email below. We got a request from CalFire, requesting a meeting regarding the Safety Element and the City's recently adopted LHMP. We believe it would be good to include De Novo staff in this meeting so you are kept updated on this matter. Regina Mendoza from the City's team will reach out soon to coordinate a meeting.

Elizabeth, I'm copying you and Bill because we think CalFire's email should be recorded as the NOP agency comment.

Thanks!

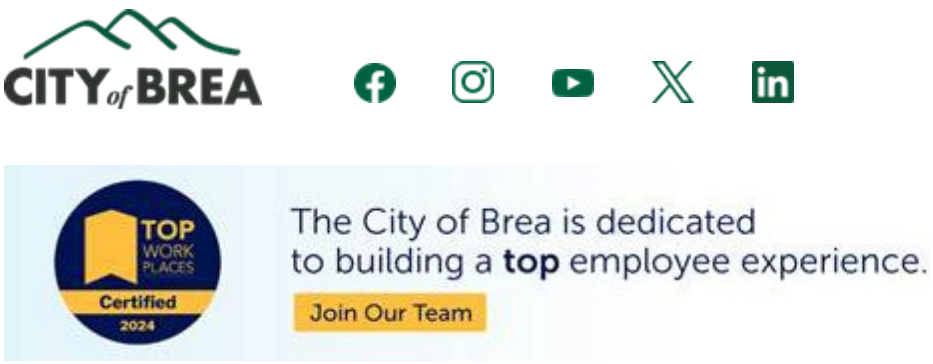
Sincerely,

JOANNE HWANG, AICP

City Planner
Community Development | Planning

P: 714-990-7143 | **E:** joanneh@cityofbrea.gov | **W:** www.cityofbrea.gov
Brea Civic & Cultural Center | 1 Civic Center Circle | Brea, California 92821

Facility Operating Hours



From: Killebrew, Jason <jasonk@cityofbrea.gov>
Sent: Monday, September 8, 2025 4:10 PM
To: Hwang, Joanne <joanneh@cityofbrea.gov>; Keyworth, Lisa <lisak@cityofbrea.gov>
Cc: Mendoza, Regina <reginam@cityofbrea.gov>
Subject: Fwd: Brea Safety Element

Hi Team,

Please see the email below and coordinate accordingly. I would like to be a part of the meeting if possible. Thank you.

JK
Sent from my iPhone

Begin forwarded message:

> **From:** "Kennedy, Joseph@CALFIRE" <Joseph.Kennedy@fire.ca.gov>
> **Date:** September 8, 2025 at 2:42:00 PM PDT
> **To:** "Killebrew, Jason" <jasonk@cityofbrea.gov>
> **Subject: Brea Safety Element**
>
> Good afternoon,
>
> My name is Joe Kennedy, and I am one of five fire captains with CAL FIRE's Land Use Planning Program. I understand, from CAL OES, that the city's Local Hazard Mitigation Plan was recently updated. I know the Safety Element was reviewed by the Board of Forestry in 2021 but the revision of the LHMP would trigger another Board review. This email is to request a meeting with you to discuss the CAL FIRE Land Use Planning Program (LUPP) and the related changes to Government Code Section 65302 as it pertains to the Safety Element and LHMP. These changes are a result of Senate Bill 379 (2015) and Senate Bill 1035 (2018), Based on these Government Code changes, when a jurisdiction revises their LHMP this action will automatically trigger a safety element review/revision. Therefore, this meeting will focus on an introduction to the potential services and process of the LUPP, and the General Plan's housing element and safety element. We will provide the city with information on how to move forward with compliance of the Government Code and how to maintain the internal consistency with the city's General Plan.
>
> Please let me know your availability for this introductory meeting. I look forward to meeting with you and your staff.
>
> Sincerely,

Joe

Joseph Kennedy
Fire Captain – Land Use Planning Program
23300 Castle St., Riverside, CA 92518
(951) 233-7426 Cell

From: Frost, Erik@DOC
To: brea2050@cityofbrea.gov
Cc: OLRA@DOC; LCI State Clearinghouse
Subject: Brea 2050: Focused General Plan Update and Brea Core Specific Plan (SCH #2025081123) - CGS comment
Date: Tuesday, September 23, 2025 9:38:40 AM

You don't often get email from erik.frost@conservation.ca.gov. Learn why this is important

Hello,

The California Geological Survey (CGS) received a Notice if Preparation of a Draft Environmental Impact Report (DEIR) for the Brea 2050 Focused General Plan Update and Brea Core Specific Plan.

Please be advised that CGS has prepared Earthquake Zone of Required Investigation Maps (EZRIM) within the planning area. The DEIR should address these zones of required investigation with respect to the General Plan and Core Specific Plan. All maps, reports, and data for EZRIM are available here:
https://maps.conservation.ca.gov/cgs/informationwarehouse/eqzapp/
https://maps.conservation.ca.gov/cgs/informationwarehouse/regulatorymaps/

In addition, the DEIR should refer to CGS maps and reports related to mineral land classification as necessary. All such products are available here:
https://maps.conservation.ca.gov/cgs/informationwarehouse/mlc/

Please let me know if you have any questions.

Erik

Dr. Erik K. Frost
Senior Engineering Geologist | Seismic Hazards Program
California Geological Survey
715 P Street, MS 1901, Sacramento, CA 95814
(916) 205-8255
erik.frost@conservation.ca.gov

Appendix C. Brea 2050 General Plan: Goals, Policies, and Actions

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Brea 2050 General Plan: Goals, Policies, and Actions

This document provides a comprehensive list of the goals, policies, and actions included in the Public Review Draft *Brea 2050* General Plan.

Community Development Element

Goal CD-1: Balanced Mix of Land Uses Provide a balanced mix of land uses that integrates residential, commercial, and employment uses with open space and public facilities to support a vibrant, sustainable community offering a high quality of life.

- **Policy CD-1.1: Land Use Pattern.** Provide a coordinated mix of housing, employment, service, and recreational opportunities.
- **Policy CD-1.2: Housing Options.** Support a diverse range of housing development options and densities.
- **Policy CD-1.3: Commercial and Industrial Uses.** Provide a balanced distribution of functional commercial and industrial areas.
- **Policy CD-1.4: Open Space Areas.** Preserve open space wherever possible, particularly in hillside areas.
- **Policy CD-1.5: Employment/Housing Balance.** Strive to balance local jobs and housing.
- **Policy CD-1.6: Economic Growth.** Support the preservation and growth of diverse commercial sectors.
- **Policy CD-1.7: Development Flexibility.** Allow for flexible standards in the Zoning Ordinance when balanced with impacts.
- **Policy CD-1.8: Sustainable Development Practices.** Encourage efficient use of land and infrastructure.
- **Policy CD-1.9: Connectivity.** Connect neighborhoods with trails, greenways, and parks.
- **Policy CD-1.10: Maintain and Expand Public Facilities.** Ensure planning and maintenance of essential infrastructure and services.

- **Policy CD-1.11: Multi-Jurisdictional Coordination.** Coordinate with neighboring areas to ensure land use compatibility.

- **Policy CD-1.12: Annexations.** Consider annexation of adjacent unincorporated properties in the Sphere of Influence.

- **Action CD-1a:** Update the City's Zoning Map for consistency with the Land Use Designations Map.

- **Action CD-1b:** Review and amend Zoning Ordinance standards as necessary.

- **Action CD-1c:** File an annual progress report with the City Council and OPR.

Goal CD-2: Community Design and Placemaking Create a visually appealing and cohesive community that emphasizes high-quality design and fosters a strong sense of place.

- **Policy CD-2.1: Distinct Identity.** Foster clearly defined districts and neighborhoods.

- **Policy CD-2.2: Site Planning and Design.** Emphasize high-quality architecture and functional spaces.

- **Policy CD-2.3: Streetscape Design.** Balance aesthetics and functionality in public spaces and gateways.

- **Policy CD-2.4: Sustainable Design.** Integrate natural and energy-efficient elements into design.

- **Policy CD-2.5: Landscape Design.** Require native, non-invasive landscaping that complements the environment.

- **Policy CD-2.6: Neighborhood Setting.** Ensure new projects are appropriately scaled and transition smoothly to surroundings.

- **Policy CD-2.7: Public Gathering Spaces.** Encourage walkable projects featuring outdoor gathering areas.

- **Policy CD-2.8: Pedestrian-Friendly Environments.** Prioritize tree-lined sidewalks and human-scale frontages.

- **Policy CD-2.9: Residential Open Spaces.** Ensure new multifamily projects include

usable outdoor spaces.

- **Policy CD-2.10: Façade and Ancillary Improvements.** Encourage revitalization of aging commercial buildings.
- **Policy CD-2.11: Above-Ground Utilities.** Carefully place and design utilities to minimize streetscape impact.
- **Policy CD-2.12: Historic Preservation.** Respect historic heritage and architectural local context.
- **Policy CD-2.13: Hillsides.** Minimize visual and environmental impact on sensitive hillside areas.
- **Policy CD-2.14: Gateways.** Use public art and signage to reinforce points of entry.
- **Action CD-2a:** Plan for gateway improvements as funding becomes available.

Goal CD-3: Neighborhood Preservation Preserve the safety and tranquility of established residential neighborhoods while fostering social interaction.

- **Policy CD-3.1: Preserve Single-Family Neighborhoods.** Focus growth in underutilized commercial/mixed use areas.
- **Policy CD-3.2: New Development Sensitivity.** Ensure new projects complement low-density neighborhoods.
- **Policy CD-3.3: Neighborhood Character.** Enhance the visual quality of individual neighborhoods.
- **Policy CD-3.4: Property Maintenance and Reinvestment.** Promote renovations and Code enforcement for attractive aesthetics.
- **Policy CD-3.5: Neighborhood Infrastructure.** Maintain local facilities and services to support livability.
- **Policy CD-3.6: Community Programming.** Support local outreach that strengthens community connections.
- **Action CD-3a:** Ensure development review minimizes nonresidential conflicts (scale, glare, noise, emissions) with residential areas.

Goal CD-4: Hillside Development Minimize development in the hillsides and mitigate adverse consequences of urbanization.

- **Policy CD-4.1: Development Level.** Maintain low density/intensity designations in hillside areas.
- **Policy CD-4.2: Constraints.** Base development on infrastructure capacity and physical constraints.
- **Policy CD-4.3: Natural Grading.** Encourage techniques that blend with existing topography.
- **Policy CD-4.4: Hillside Development Ordinance.** Enforce standards for density, ridgelines, and grading.
- **Policy CD-4.5: Regional Coordination.** Coordinate with Orange County on projects in unincorporated areas.
- **Policy CD-4.6: Natural Fire Breaks.** Preserve fire breaks through Open Space land use.
- **Policy CD-4.7: Building Design.** Ensure materials and colors blend with the natural landscape.
- **Action CD-4a:** Require a constraints analysis for all proposed hillside development.
- **Action CD-4b:** Continue implementation of the Hillside Development Ordinance.

Goal CD-5: Infrastructure Provide sufficient levels of water, sewer, and storm drain service throughout the community.

- **Policy CD-5.1: System Capacity.** Coordinate demand from new development with system capacity.
- **Policy CD-5.2: Master Plans.** Implement water, sewer, and drainage master plans.
- **Policy CD-5.3: Development Impacts.** Require new developments to fund their fair share of infrastructure costs.
- **Policy CD-5.4: Funding.** Ensure adequate funding via developer bonds for required

infrastructure.

- **Policy CD-5.5: Sewer Discharge Elimination.** Prevent toxic or obstructive material discharge into wastewater systems.
- **Policy CD-5.6: Stormwater Treatment.** Pursue maximum feasible beneficial use of stormwater runoff.
- **Policy CD-5.7: Stormwater Overflow.** Investigate cost-effective methods to reduce stormwater flow into wastewater systems.
- **Policy CD-5.8: Stormwater Quality.** Update and enforce standards for discharged stormwater.
- **Action CD-5a:** Implement the CIP for streets, traffic safety, water, sewer, and parks.
- **Action CD-5b:** Regularly study funding and phasing mechanisms for new infrastructure.
- **Action CD-5c:** Require fiscal/service impact analysis for major projects.

Goal CD-6: Growth Management Promote balanced growth with supporting public services infrastructure.

- **Policy CD-6.1: Development and Services.** Balance quality development with equitable distribution of services.
- **Policy CD-6.2: Land Use and Transportation.** Integrate planning to provide adequate service standards.
- **Policy CD-6.3: Local Services.** Monitor and maintain service level standards.
- **Policy CD-6.4: Adequate Services.** Ensure development is balanced with provision of services and funding.
- **Policy CD-6.5: Growth Pattern.** Encourage infill development that reduces sprawl and preserves open space.
- **Policy CD-6.6: Local Employment.** Support programs that match residents with local jobs.
- **Policy CD-6.7: Transportation Facilities.** Assist in providing regional and local

facilities.

- **Policy CD-6.8: Interregional Cooperation.** Coordinate with other agencies on growth and infrastructure.
- **Policy CD-6.9: Alternative Modes of Travel.** Promote expansion of non-vehicular transportation.
- **Policy CD-6.10: Employment Proximity.** Encourage housing development near jobs and services.
- **Action CD-6a:** Actively participate in regional planning with SCAG and Orange County.

Mobility Element

Goal M-1: Regional Circulation Maintain an effective regional transportation network.

- **Policy M-1.1: Caltrans Coordination.** Work with Caltrans to improve access to SR-57, SR-90, and SR-142.
- **Policy M-1.2: Inter-Agency Coordination.** Engage with FHWA, SCAG, and OCTA for balanced multi-modal planning.
- **Policy M-1.3: OCTA Coordination.** Ensure MPAH consistency with local roadway plans.
- **Policy M-1.4: Emerging Technology.** Plan with regional partners for new transportation modes.
- **Policy M-1.5: Arterial Network System Coordination.** Cooperate with neighbors for efficient arterial operations.
- **Policy M-1.6: Minimize Cut-Through Traffic.** Discourage regional traffic from using local streets.
- **Policy M-1.7: Goods Movement on Regional Routes.** Maintain efficient freight flow for economic vitality.
- **Policy M-1.8: Carpooling.** Encourage carpooling for residents and incoming employees.
- **Policy M-1.9: VMT Reduction Facilities.** Support park-and-rides and mobility hubs to

reduce vehicle miles traveled.

- **Action M-1a:** Participate in regional planning forums to ensure Brea's concerns are represented.
- **Action M-1b:** Monitor neighboring jurisdictions' planning for impacts to Brea.
- **Action M-1c:** Implement traffic control and coordination to improve commercial vehicle safety.
- **Action M-1d:** Coordinate to maintain capacity on state highways and discourage local cut-throughs.
- **Action M-1e:** Share monitoring resources with Caltrans to improve traffic flow.

Goal M-2: Local Circulation Provide a safe local circulation system that facilitates the efficient flow of traffic and goods.

- **Policy M-2.1: Roadway Requirements.** Design roads for all modes/users and maintain according to best practices.
- **Policy M-2.2: Level of Service.** Strive to maintain acceptable LOS along City facilities per TIA Guidelines.
- **Policy M-2.3: Non-Local Traffic.** Discourage regional traffic from passing through neighborhoods.
- **Policy M-2.4: Traffic Management.** Apply creative strategies to minimize congestion at schools and drive-throughs.
- **Policy M-2.5: Trees.** Promote native street trees to provide shaded, cooled pathways.
- **Policy M-2.6: New Development – Transportation Studies.** Require TIA-consistent studies for new projects.
- **Policy M-2.7: Evacuation Routes.** Maintain and improve routes consistent with Public Safety planning.
- **Policy M-2.8: Truck Route Network.** Maintain and update local routes to reduce community impacts.

- **Policy M-2.9: Public Input.** Support community participation via the Traffic Committee.
- **Policy M-2.10: School Zones.** Facilitate safe peak-period circulation around schools.
- **Action M-2a:** Use speed management and control devices to keep through traffic on arterials.
- **Action M-2b:** Require projects to address effects on local roadway operations during review.
- **Action M-2c:** Periodically assess vehicular LOS to determine necessary CIP improvements.
- **Action M-2d:** Develop and maintain traffic signal and data communication systems.
- **Action M-2e:** Review and update designated truck routes periodically.
- **Action M-2f:** Evaluate and implement traffic calming in residential areas.
- **Action M-2g:** Incorporate public input into transportation facility design.
- **Action M-2h:** Use creative parking and traffic controls to reduce congestion.

Goal M-3: Complete Streets Provide a safe and convenient transportation network accessible for all modes and users.

- **Policy M-3.1: Complete Streets Principles.** Implement best practices for all road users.
- **Policy M-3.2: Identify Gaps.** Address missing facilities for bikes, peds, and transit riders.
- **Policy M-3.3: Safe Routes to School.** Coordinate to support safe student walking and biking.
- **Policy M-3.4: Context Sensitivity.** Consider surrounding land use and design when building roadways.
- **Policy M-3.5: New Mobility Technologies.** Monitor and implement tech that aids all transportation modes.
- **Policy M-3.6: Curb Management.** Adjust curb zones to match land use needs and non-

motorized choices.

- **Policy M-3.7: Roadway Design Principles.** Support designs that create safe, comfortable pedestrian experiences.
- **Policy M-3.8: Traffic Calming.** Use context-sensitive methods to balance auto, transit, and pedestrian needs.
- **Policy M-3.9: New Development – Multi-Modal Facilities.** Require land dedication for sidewalks and bike lanes.
- **Policy M-3.10: Community Event Street Management.** Support temporary closures for events while maintaining safety.
- **Action M-3.a:** Require projects to study effects on walking, biking, and transit networks.
- **Action M-3.b:** Incorporate complete streets concepts into roadway planning.
- **Action M-3.c:** Pursue Safe Routes to School funding and education outreach.
- **Action M-3.d:** Seek design features that improve efficiency and safety for all modes.
- **Action M-3.e:** Apply for grants for complete streets and safety projects.
- **Action M-3.f:** Engage the Traffic Committee in evaluating resident-requested calming measures.

Goal M-4: Pedestrian and Bicycle Facilities Develop extensive networks that enable and encourage non-motorized travel.

- **Policy M-4.1: System of Bikeways.** Develop a comprehensive system for commuting and recreation.
- **Policy M-4.2: The Tracks at Brea.** Improve access and coordinate westward extension to Whittier.
- **Policy M-4.3: Pedestrian Connections.** Provide safe routes to Downtown and major activity centers.
- **Policy M-4.4: Users of All Abilities.** Ensure ADA-compliant sidewalks, ramps, and signals.

- **Policy M-4.5: Birch Street Corridor.** Establish this route as a ped/bike-friendly travel way.
- **Policy M-4.6: New Development – Alternative Modes.** Require trails and transit features in large projects.
- **Policy M-4.7: Bicycle, Pedestrian, and Connectivity Improvements.** Provide secure bike parking and lighting.
- **Policy M-4.8: Emerging Travel Modes.** Plan for safety and enforcement needs of new technologies.
- **Policy M-4.9: Caltrans Coordination.** Improve ped/bike crossings at state highways and freeway ramps.
- **Policy M-4.10: Bicycle and Pedestrian Connectivity.** Plan neighborhood routes as a fully connected system.
- **Policy M-4.11: Planning and Design for E-Bikes.** Support safe e-bike use via design and education.
- **Policy M-4.12: Sidewalk Design Standards.** Support wider sidewalks and landscaped buffers.
- **Action M-4.a:** Develop a comprehensive Citywide Active Transportation Plan (ATP).
- **Action M-4.b:** Incorporate state and national best practices (NACTO, FHWA) into design.
- **Action M-4.c:** Install secure bicycle parking at City-owned facilities.
- **Action M-4.d:** Implement site design features that support active transport during project review.
- **Action M-4.e:** Include active transportation projects in the CIP.
- **Action M-4.f:** Consider bicycle and pedestrian access during TIA site plan reviews.
- **Action M-4.g:** Develop a wayfinding plan for The Tracks at Brea.
- **Action M-4h:** Seek and apply for grants for regional/local ped-bike facilities.

- **Action M-4i:** Prioritize safety with buffered or protected bike lanes where appropriate.
- **Action M-4j:** Investigate corner bulb-outs and sidewalk extensions to improve pedestrian visibility.
- **Action M-4k:** Evaluate restricting right-turns on red and leading pedestrian intervals.

Goal M-5: Public Transportation System Facilitate and encourage increased use of public transit and multi-modal services.

- **Policy M-5.1: Working Partnership.** Maintain proactive partnerships with OCTA and Foothill Transit.
- **Policy M-5.2: Regional Destinations.** Collaborate on microtransit/shuttles for seniors and students.
- **Policy M-5.3: Design Features.** Incorporate transit-supportive features into public projects.
- **Policy M-5.4: Mobility Hubs.** Establish first/last mile amenities at the Brea Mall and major centers.
- **Policy M-5.5: Bus Stop Locations.** Prioritize curbside bus stop placement over other parking uses.
- **Policy M-5.6: Bus Shelters.** Promote high-quality shelters that protect riders from weather.
- **Policy M-5.7: Transportation Needs of Seniors and Students.** Plan services to meet their daily mobility needs.
- **Policy M-5.8: New Development – Transit Connections.** Require projects to facilitate transit use.
- **Action M-5.a:** Work with operators to support integration between local bus and rail services.
- **Action M-5.b:** Require new developments to include transit-supportive design features.
- **Action M-5.c:** Monitor federal, state, and OCTA funding for local transit programs.

- **Action M - 5d:** Seek to improve non-motorized access to public transit stops.

Community Resources Element

Goal CR-1: Accessible Park and Trail System An accessible, integrated system of parks and recreational amenities that meet the needs of all residents.

- **Policy CR - 1.1: Acreage Requirements.** Ensure 5 acres of parkland per 1,000 residents.
- **Policy CR - 1.2: Diverse Recreation Types.** Promote public and private facilities distributed equitably.
- **Policy CR - 1.3: Service Area Radius.** Focus new facilities in areas outside a 1/2-mile walking radius from green space.
- **Policy CR - 1.4: Park and Trail Maintenance.** Maintain and enhance existing facilities to meet community needs.
- **Policy CR - 1.5: Design Standards.** Ensure high quality for safety, utility, and aesthetics.
- **Policy CR - 1.6: Funding.** Explore innovative partnerships and grants, focusing on underserved areas.
- **Policy CR - 1.7: Trail Extensions.** Support development of urban pathways connecting to nature.
- **Policy CR - 1.8: Community Engagement.** Collaborate with residents to adapt programming.
- **Policy CR - 1.9: Regional Collaboration.** Work with County and state partners to protect resources.
- **Action CR - 1a:** Evaluate development for negative effects on nearby public parks.
- **Action CR - 1b:** Pursue federal/state grants and private donations for park development.
- **Action CR - 1c:** Periodically update park in-lieu fee ordinances.
- **Action CR - 1d:** Organize periodic community workshops for park network improvement.

Goal CR-2: High-Quality Human Services Human services that enhance the livelihood of Brea residents of all ages and abilities.

- **Policy CR-2.1: Recreation and Human Services.** Support programming responsive to all socioeconomic groups.
- **Policy CR-2.2: Multigenerational Programming.** Encourage opportunities that build intergenerational connections.
- **Policy CR-2.3: Funding.** Identify opportunities to sustain programs for underserved populations.
- **Policy CR-2.4: Encourage Wellness.** Support health, fitness, and wellness activities.
- **Policy CR-2.5: Partnerships.** Partner with non-profits and public/private organizations for comprehensive programming.
- **Policy CR-2.6: Community Input.** Ensure programming reflects diverse interests.
- **Policy CR-2.7: Multilingual Services.** Develop and deliver community information in multiple languages.
- **Policy CR-2.8: Volunteer Opportunities.** Offer meaningful volunteer roles to support City services.
- **Action CR-2a:** Continue cultural/recreational classes at the Community Center and parks.
- **Action CR-2b:** Offer childcare referrals and mental health services.
- **Action CR-2c:** Research and apply for philanthropic and state grants.
- **Action CR-2d:** Update awareness campaigns regarding family well-being.
- **Action CR-2e:** Promote volunteerism for human service programs.
- **Action CR-2f:** Gather input via surveys and social media for event planning.
- **Action CR-2g:** Translate program materials into commonly spoken languages.

Goal CR-3: Open Space Preservation The preservation and maintenance of open spaces for nature, recreation, and scenic enjoyment.

- **Policy CR-3.1: Open Space Preservation.** Preserve lands for habitat protection and flood management.
- **Policy CR-3.2: Sensitive Species and Habitats.** Support conservation through creative site design.
- **Policy CR-3.3: Hillside Preservation.** Conserve sensitive ridgelines and canyons.
- **Policy CR-3.4: Mature Vegetation.** Avoid removing mature trees; balance aesthetics with long-term health.
- **Policy CR-3.5: Rewilding.** Explore ecological restoration projects to increase biodiversity.
- **Policy CR-3.6: Open Space Education.** Develop materials promoting resource conservation.
- **Action CR-3a:** Assess development proposals for geologic and scenic impacts pursuant to CEQA.
- **Action CR-3b:** Adopt design guidelines that limit encroachment near open space.
- **Action CR-3c:** Collaborate with conservation organizations on regional resource protection.
- **Action CR-3d:** Distribute guides regarding public access and protection of open space.

Goal CR-4: Scenic Resources Visual resources that reflect Brea's natural beauty and help guide responsible development.

- **Policy CR-4.1: Trails and Viewing Areas.** Encourage inclusive viewing points at scenic resources.
- **Policy CR-4.2: Key Roadways.** Recognize aesthetic value of visually sensitive roadways.
- **Policy CR-4.3: Tree Resources.** Manage mature tree stands in accordance with the

Tree Preservation Ordinance.

- **Policy CR-4.4: Regional Collaboration.** Work with neighboring counties to protect resources in the SOI.

- **Action CR-4a:** Assess development proposals for visual resource impacts, including ridgelines and glare.

- **Action CR-4b:** Apply design standards to preserve views along prominent roadways.

- **Action CR-4c:** Install informational signage and viewing platforms at local vistas.

Goal CR-5: Biological Resources A resilient ecosystem that safeguards habitats for biological resources and wildlife.

- **Policy CR-5.1: Habitat Conservation.** Support identification and conservation of suitable habitats.

- **Policy CR-5.2: Local Coordination.** Coordinate with organizations to protect biological resources.

- **Policy CR-5.3: Invasive Plant Species.** Monitor and manage invasive species with regional partners.

- **Policy CR-5.4: Protective Landscaping.** Exclude known invasive species from landscape planting.

- **Policy CR-5.5: Sustainable Landscaping.** Minimize herbicides/pesticides to help restore the ecosystem.

- **Policy CR-5.6: Riparian Habitats.** Protect riparian habitats through development practices and mitigation.

- **Policy CR-5.7: Wildlife Corridors.** Encourage preservation of habitat connectivity.

- **Policy CR-5.8: Urban Canopy.** Expand trees to reduce heat and improve air quality.

- **Policy CR-5.9: Outdoor Lighting.** Mitigate harmful effects of light pollution.

- **Policy CR-5.10: Biological Resource Education.** Promote awareness of steps residents can take to enhance resources.

- **Action CR-5a:** Maintain a buffer area between natural waterways and urban development.
- **Action CR-5b:** Continue CEQA assessment of significant natural resources for all proposals.
- **Action CR-5c:** Require project consultation with regulatory agencies (USFWS, CDFG).
- **Action CR-5d:** Seek funding for wildlife corridor improvements like overcrossings.
- **Action CR-5e:** Evaluate the potential for a Dark Sky ordinance.
- **Action CR-5f:** Maintain the City's tree inventory to identify canopy expansion areas.

Goal CR-6: Artistic, Cultural, and Historic Resources A community that preserves, protects, and celebrates resources that define Brea's identity.

- **Policy CR-6.1: Cultural Services.** Offer events that reflect Brea's rich heritage.
- **Policy CR-6.2: Cultural Facilities.** Maintain the Curtis Theatre, Brea Gallery, and Community Center.
- **Policy CR-6.3: Placemaking.** Integrate murals and art into streetscapes and civic spaces.
- **Policy CR-6.4: Historic Resources.** Evaluate conditions and rehabilitation costs before considering demolition.
- **Policy CR-6.5: Archaeological and Paleontological Resources.** Evaluate discovered resources for cultural relevance.
- **Policy CR-6.6: Human Remains.** Ensure sensitivity and compliance with Health and Safety Codes.
- **Policy CR-6.7: Tribal Consultation.** Consult with Native American tribes on proposed policy changes.
- **Policy CR-6.8: Planning Considerations.** Prioritize cultural history in new design development.

- **Policy CR-6.9: Regional Collaboration.** Establish funding mechanisms to restore archaeological sites.

- **Policy CR-6.10: Public Engagement.** Maintain the Brea Museum and Olinda Oil Museum.

- **Policy CR-6.11: Celebrate Heritage.** Promote heritage through artwork and context-sensitive design.

- **Action CR-6a:** Organize City-sponsored cultural celebrations highlighting diverse communities.

- **Action CR-6b:** Research funding (tax incentives, grants) for historical resource restoration.

- **Action CR-6c:** Add resources that meet the Historic Preservation Ordinance to registers.

- **Action CR-6d:** Use artwork and signs in parks to promote heritage.

- **Action CR-6e:** Work with the Historical Society to increase awareness of preservation.

Goal CR-7: Education Services High-quality educational facilities and lifelong learning opportunities.

- **Policy CR-7.1: Support Public Education.** Work closely with BOUSD to meet community needs.

- **Policy CR-7.2: School Siting.** Plan facilities to accommodate capacity near residential development.

- **Policy CR-7.3: Lifelong Learning.** Promote adult education, vocational training, and library services.

- **Policy CR-7.4: Library Resources.** Collaborate with OC Public Library to meet resident needs.

- **Policy CR-7.5: Joint Use Agreements.** Maintain agreements with BOUSD for public use of recreational spaces.

- **Policy CR-7.6: Higher Education.** Collaborate with CSUF and Fullerton College.

- **Policy CR - 7.7: Arts and Education.** Pursue partnerships to support cultural arts education.

Public Safety Element

Goal PS- 1: Wildland Fire Abatement A community minimally impacted by fires through implementation of proactive abatement strategies.

- **Policy PS - 1.1: Services and Facilities.** Provide adequate fire prevention services per department standards.
- **Policy PS - 1.2: Fire Hazard Identification.** Regularly update Fire Hazard Severity Zones maps.
- **Policy PS - 1.3: City Standards.** Require development in FHSZs to meet designated standards.
- **Policy PS - 1.4: Regional Coordination.** Coordinate with OCFA and the Carbon Canyon Fire Safe Council.
- **Policy PS - 1.5: Development in VHFHSZs.** Minimize new residential development in VHFHSZs.
- **Policy PS - 1.6: Fire Protection Plans.** Require adequate plans and emergency access for VHFHSZ projects.
- **Policy PS - 1.7: Fire Protection Buffers.** Require fire breaks and fuel breaks at private expense.
- **Policy PS - 1.8: Fire Safe Design.** Encourage fire-resistant materials and landscaping.
- **Policy PS - 1.9: Fire Hazard Reduction Projects.** Maintain community fire breaks and road clearance.
- **Policy PS - 1.10: Standards for New Development.** Require brush management and visible signage/addressing.
- **Policy PS - 1.11: Rebuilding After a Fire.** Identify design methods to minimize future damage.

- **Policy PS-1.12: Adequate Water Supply.** Require development to demonstrate sufficient fire protection water capacity.

- **Policy PS-1.13: Response Time.** Require projects to demonstrate that fire service standards are maintained.

- **Policy PS-1.14: Access.** Require sufficient ingress/egress for firefighting activities.

- **Policy PS-1.15: Education.** Educate community on fire safety, focusing on at-risk populations.

- **Policy PS-1.16: Subdivision Map Act.** Ensure compliance with structural protection and ingress/egress requirements.

- **Policy PS-1.17: Fire and Building Codes.** Require compliance with current California Codes.

- **Policy PS-1.18: Critical Facilities.** Locate new essential facilities outside of VHFHSZs when feasible.

- **Policy PS-1.19: Mutual Aid.** Maintain disaster response agreements with state and county partners.

- **Policy PS-1.20: Public Information.** Continue annual programs explaining emergency preparedness.

- **Action PS-1a:** Regularly update FHSZ maps for consistency with CAL FIRE designations.

- **Action PS-1b:** Maintain an ongoing fire inspection program for large buildings and critical facilities.

- **Action PS-1c:** Mitigate existing nonconforming development to contemporary standards.

- **Action PS-1d:** Assess site constraints during land use amendments to avoid wildfire hazards.

- **Action PS-1e:** construct development to minimize risk of structural loss from wildland fires.

- **Action PS-1f:** Design projects to reduce risk from topographic features like ridge

saddles.

- **Action PS-1g:** Review street networks to evaluate emergency engine accessibility.
- **Action PS-1h:** Conduct periodic evaluations of fire flow pressures.
- **Action PS-1i:** Create a plan to address post-fire recovery and minimize repetitive losses.
- **Action PS-1j:** Coordinate debris flow prediction and monitoring after significant wildfires.
- **Action PS-1k:** Require habitable structures to meet recent California Building and Fire Codes.

Goal PS-2: Geologic and Seismic Hazard Reduction Reduce risk from ground shaking, fault rupture, liquefaction, and landslides.

- **Policy PS-2.1: Geologic Hazard Identification.** Continuously update maps consistent with Geologic Survey data.
- **Policy PS-2.2: Hillside Development.** Require site-specific geologic studies for hillside projects.
- **Policy PS-2.3: Alquist-Priolo Act.** Enforce development requirements within earthquake fault zones.
- **Policy PS-2.4: Building Codes.** Adhere to latest California Building Codes for earthwork and grading.
- **Policy PS-2.5: Critical Infrastructure.** Require site-specific seismic structural design for essential facilities.
- **Policy PS-2.6: Liquefaction.** Require special studies in high-risk areas to identify siting measures.
- **Policy PS-2.7: Education.** Compile and distribute earthquake preparedness information.
- **Policy PS-2.8: Retrofitting Buildings.** Encourage assessment and retrofitting of soft-story structures.

- **Policy PS-2.9: Historic Hazards.** Discourage development in identified landslide and flood plain areas.

- **Policy PS-2.10: Maintain Water Supply.** Ensure supplies are not interrupted by seismic events.

- **Action PS-2a:** Ensure compliance with the Earthquake Protection Law.

- **Action PS-2b:** Update local codes to comply with the Unreinforced Masonry Law.

- **Action PS-2c:** Establish a public relations program for seismic hazard awareness.

Goal PS-3: Flood Hazard Protection Protect the community from potential flood hazards, including dam inundation.

- **Policy PS-3.1: Flood Hazard Identification.** Update maps consistent with FEMA amendments.

- **Policy PS-3.2: New Development.** Avoid and minimize flood risks for new projects.

- **Policy PS-3.3: Areas Susceptible to Flooding.** Require development to incorporate flood mitigation measures.

- **Policy PS-3.4: Education.** Notify residents of impending hazards and evacuation procedures.

- **Policy PS-3.5: Joint Use of Flood Control Facilities.** Develop facilities as parks or golf courses.

- **Policy PS-3.6: Interagency Coordination.** Consider impacts from development in neighboring jurisdictions.

- **Policy PS-3.7: Stormwater Runoff.** Require Low Impact Development (LID) best management practices.

- **Policy PS-3.8: Critical Facilities.** Prohibit new essential facilities in the 100-year floodplain.

- **Policy PS-3.9: Open Space Area.** Preserve open space for flood mitigation.

- **Policy PS-3.10: Flood Control Facilities.** Coordinate with Orange County on channel

improvements.

- **Policy PS-3.11: Infrastructure Maintenance.** Maintain an active storm drain inspection program.
- **Policy PS-3.12: Water Storage Facilities.** Monitor facilities that might pose inundation hazards.
- **Action PS-3a:** Monitor changes in federal/state laws related to flood protection.
- **Action PS-3b:** Provide preparedness information to the public.
- **Action PS-3c:** Communicate with FEMA annually regarding FIRM updates.
- **Action PS-3d:** Incorporate flood control best practices into the Municipal Code.

Goal PS-4: Hazardous Materials Safety Protect the community by ensuring safe transport, use, storage, and disposal of hazardous materials.

- **Policy PS-4.1: Regulations.** Enforce the Uniform Fire Code for hazardous materials.
- **Policy PS-4.2: Measures to Reduce Risks.** Incorporate OC Hazardous Waste Management Plan standards.
- **Policy PS-4.3: Transport.** Limit hazardous waste transport to designated routes.
- **Policy PS-4.4: Emergency Response.** Ensure fire department capacity for materials incidents.
- **Policy PS-4.5: Regional Compliance.** Coordinate with federal/state agencies on toxic disposal.
- **Policy PS-4.6: Education.** Distribute materials regarding the dangers of hazardous waste.
- **Policy PS-4.7: Oil Fields.** Ensure active operations comply with current regulations.
- **Policy PS-4.8: Abandoned Oil Facilities.** Support CalGEM regulations.
- **Policy PS-4.9: Remediation.** Require comprehensive investigation of former oil field properties.

- **Action PS-4a:** Require projects to address risks associated with hazardous materials.
- **Action PS-4b:** Require businesses to submit materials info to the Fire Department.
- **Action PS-4c:** Promote off-site hazardous and electronic waste drop-off.

Goal PS-5: Climate Resiliency A community resilient to changing environmental patterns and severe weather events.

- **Policy PS-5.1: Community Preparedness.** Educate community on hazards caused by climate change.
- **Policy PS-5.2: Collaboration.** Coordinate resiliency strategies with regional partners.
- **Policy PS-5.3: Energy Supply.** Promote plans that increase sustainable energy sources.
- **Policy PS-5.4: Water Supply.** Collaborate to protect water infrastructure.
- **Policy PS-5.5: Programs.** Improve drought preparation for vulnerable community members.
- **Policy PS-5.6: Leadership.** Demonstrate leadership through municipal operations policies.
- **Policy PS-5.7: Storms.** Provide access to sandbags before and during events.
- **Policy PS-5.8: Special Assistance.** Ensure equitable access to shelter during extreme heat.
- **Policy PS-5.9: Greenhouse Gas Reductions.** Actively support regional GHG reduction efforts.
- **Policy PS-5.10: Monitoring.** Track climate effects with state and federal partners.
- **Policy PS-5.11: Extreme Heat Vulnerabilities.** Encourage projects to address urban heat island effects.
- **Action PS-5a:** Provide public information on City climate mitigation steps.
- **Action PS-5b:** Implement energy-efficient LED street lights.

- **Action PS-5c:** Consider purchasing electric vehicles for the City fleet.
- **Action PS-5d:** Evaluate new City facilities for CalGreen Tier 1 standards.
- **Action PS-5e:** Encourage sustainable energy sources in new development.
- **Action PS-5f:** Explore renewable energy (solar, wind) for City facilities.
- **Action PS-5g:** Implement programs to improve drought preparation.
- **Action PS-5h:** Provide access to flood protection services during events.
- **Action PS-5i:** (Redundant) Encourage sustainable/carbon-neutral energy.
- **Action PS-5j:** Encourage transit and active transport modes to reduce GHG.
- **Action PS-5k:** Educate public about designated cooling centers.

Goal PS-6: Emergency Management A City well-prepared for response and management to minimize disaster impacts.

- **Policy PS-6.1: Critical Facilities.** Coordinate to ensure the resilience of lifeline infrastructure.
- **Policy PS-6.2: Local Hazard Mitigation Plan.** Update the LHMP regularly to maintain grant eligibility.
- **Policy PS-6.3: Communication.** Maintain proper protocols among all emergency service providers.
- **Policy PS-6.4: Education.** Prepare the community for efficient response and evacuation.
- **Policy PS-6.5: Automatic and Mutual Aid.** Participate in aid agreements with adjacent providers.
- **Policy PS-6.6: Evacuation Routes.** Work with Fire/Police to define standards and assessment ranges.
- **Policy PS-6.7: Emergency Shelters.** Periodically review supply and equipment

availability.

- **Policy PS-6.8: Collaboration.** Link emergency services with mitigation programs.
- **Policy PS-6.9: Institutions.** Coordinate response procedures with major employers and schools.
- **Policy PS-6.10: Volunteer Service.** Support programs like CERT training.
- **Policy PS-6.11: Warning Systems.** Maintain and upgrade mass communications systems.
- **Policy PS-6.12: Strategic Readiness.** Maintain proactive, data-driven planning through recurring five-year cycles.
- **Action PS-6a:** Regularly practice implementation of the Emergency Operations Plan.
- **Action PS-6b:** Coordinate local response procedures with county and state plans.
- **Action PS-6c:** Continue implementing the Brea LHMP.
- **Action PS-6d:** Explore FEMA and state grants (AFG/SAFER) for implementation.
- **Action PS-6e:** Prepare five-year strategic plans for both Fire and Police Departments.
- **Action PS-6f:** Update technical studies for Fire Department five-year plans.
- **Action PS-6g:** Evaluate public safety impacts of new development using standard methodologies.
- **Action PS-6h:** Publish a Public Safety Impact Methodology Manual.
- **Action PS-6i:** Adopt Department Service Level Objectives (SLOs).
- **Action PS-6j:** Provide annual reports on adopted SLOs.
- **Action PS-6k:** Require phasing for major developments to prevent response degradation.
- **Action PS-6l:** Require fair-share contributions to mitigate public safety impacts.
- **Action PS-6m:** Maintain consistency between strategic plans and the General Plan/CIP.

- **Action PS-6n:** Maintain standardized public safety data and publish an annual scorecard.

Goal PS-7: Noise Impact Minimization A community whose residential neighborhoods are minimally impacted by noise.

- **Policy PS-7.1: Planning Decisions.** Consider future noise levels when making land use decisions.
- **Policy PS-7.2: Sensitive Uses.** Locate sensitive facilities away from areas of excessive noise.
- **Policy PS-7.3: Site Design.** Incorporate design techniques (setbacks, textures) to minimize impacts.
- **Policy PS-7.4: Mixed Use Development.** Design projects to minimize noise transfer to residential areas.
- **Policy PS-7.5: Special Events.** Consider events exceeding standards on a case-by-case basis.
- **Policy PS-7.6: Noise Control.** Utilize abatement strategies like staggered hours and insulation.
- **Policy PS-7.7: Roadway Noise.** Encourage traffic-calming design and natural buffers.
- **Policy PS-7.8: Highway Noise.** Coordinate with Caltrans for maximum abatement on SR-57.
- **Policy PS-7.9: Vehicles and Trucks.** Monitor and enforce speed limits and muffler codes.
- **Policy PS-7.10: Interjurisdictional Coordination.** Coordinate with Orange County on boundary conflicts.
- **Policy PS-7.11: Nuisance Noise.** Address barkers and party noise through the Municipal Code.
- **Action PS-7a:** Update the Municipal Code for consistency with General Plan noise standards.

- **Action PS - 7b:** Review projects for compliance and require mitigation best practices.
- **Action PS - 7c:** Require acoustical studies for new discretionary projects with noise potential.

Economic Development Element

Goal ED - 1: Diverse and Resilient Economy A diverse economic environment that enhances quality of life, attracts employers, and encourages visitors.

- **Policy ED - 1.1: Land Uses.** Identify opportunity sites for development aligned with market demand.
- **Policy ED - 1.2: Mixed Use Development.** Encourage projects incorporating both housing and business.
- **Policy ED - 1.3: Diverse Business.** Encourage uses providing employment at all income levels.
- **Policy ED - 1.4: Local and Regional Events.** Work with associations to sponsor supportive events.
- **Policy ED - 1.5: Targeted Business Attraction.** Outreach to medical, technology, and hospitality sectors.
- **Policy ED - 1.6: Tourism Industry Support.** Foster programs that promote local and regional tourism.
- **Policy ED - 1.7: Economic Base Diversification.** Explore City-led projects and public-private partnerships.
- **Policy ED - 1.8: Fiscal Sustainability.** Encourage sales tax-generating businesses.
- **Action ED - 1a:** Develop an Economic Development Strategic Plan within five years.
- **Action ED - 1b:** Periodically survey underutilized sites and engage with property owners.
- **Action ED - 1c:** Host regional events that broaden City visibility.

- **Action ED - 1d:** Improve marketability of opportunity sites through infrastructure.
- **Action ED - 1e:** Provide technical training to help businesses recover from disruptions.

Goal ED-2: Business Friendly Environment A local economy that supports existing businesses and attracts industries with promised innovation.

- **Policy ED - 2.1: Entrepreneurship.** Support local entrepreneurs in expanding small businesses.
- **Policy ED - 2.2: Resources.** Provide accessible info on growth and development resources.
- **Policy ED - 2.3: Engagement.** Communicate regularly with businesses regarding operational concerns.
- **Policy ED - 2.4: Office Conversions.** Encourage repurposing of space for current needs.
- **Policy ED - 2.5: Regional Promotion.** Support legislation that makes the region attractive for business.
- **Policy ED - 2.6: Relocation Assistance.** Facilitate permitting for businesses trying to relocate.
- **Action ED - 2a:** Use Brea City Code to conduct marketing and retention programs.
- **Action ED - 2b:** Provide user-friendly development manuals for new businesses.
- **Action ED - 2c:** Incorporate business -friendly policies into City staff training.
- **Action ED - 2d:** Improve multimodal networks to build off existing commercial areas.
- **Action ED - 2e:** Strategically attract businesses that complement existing hospitality.
- **Action ED - 2f:** Integrate business interests into City legislative advocacy.
- **Action ED - 2g:** Discuss regional opportunities with economic development partners.
- **Action ED - 2h:** Maintain listings of vacant commercial properties.
- **Action ED - 2i:** Provide recognition for established Brea businesses.

- **Action ED-2j:** Collaborate with businesses to increase marketing for local events.
- **Action ED-2k:** Maintain relationships with industries through regular communication.
- **Action ED-2l:** Assist local expansion through regulatory and financial support.

Goal ED-3: Workforce Attraction and Retention A community that retains a skilled workforce and provides opportunities to live and work in Brea.

- **Policy ED-3.1: Retain Workers.** Encourage development of housing for the local workforce.
- **Policy ED-3.2: Marketing Opportunities.** Enhance the City's reputation for recruitment and retention.
- **Policy ED-3.3: Housing Choices.** Develop land use policies for affordable, diverse housing.
- **Policy ED-3.4: Remote Work.** Encourage policies that allow remote workers to reside in Brea.
- **Policy ED-3.5: Educational Relationships.** Work with institutions to ensure workers have necessary skills.
- **Policy ED-3.6: Educational Opportunities.** Align education with local business needs.
- **Action ED-3a:** Host regular meetings to network entrepreneurs and investors.
- **Action ED-3b:** Recognize businesses that prioritize employee well-being.
- **Action ED-3c:** Solicit guidance from major employers on workforce pipeline needs.
- **Action ED-3d:** Enhance digital infrastructure to attract remote work opportunities.

Appendix D1. Air Quality/GHG Data

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Brea GP Existing Detailed Report

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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

1. Basic Project Information

1.1. Basic Project Information

Data Field	Value
Project Name	Brea GP Existing
Operational Year	2025
Lead Agency	—
Land Use Scale	Plan/community
Analysis Level for Defaults	County
Windspeed (m/s)	1.8
Precipitation (days)	21
Location	33.91898570686023, -117.88591288325267
County	Orange
City	Brea
Air District	South Coast AQMD
Air Basin	South Coast
TAZ	5752
EDFZ	7
Electric Utility	Southern California Edison
Gas Utility	Southern California Gas
App Version	2022.1.1.35

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
Strip Mall	8,017	1000sqft	184	8,016,629	0.00	0.00	—	—
Industrial Park	12,537	1000sqft	288	12,537,333	0.00	0.00	—	—

Apartments Mid Rise	2,556	Dwelling Unit	0.00	0.00	0.00	0.00	7,285	—
Single Family Housing	8,210	Dwelling Unit	2,666	16,009,500	96,162,556	0.00	23,398	—
Apartments Mid Rise	5,259	Dwelling Unit	138	5,048,640	0.00	0.00	14,988	—
City Park	19	Acre	19	0.00	843,197	843,197	—	—
Government (Civic Center)	34	1000sqft	0.00	0.00	0.00	0.00	—	—
Condo/Townhouse	321	Dwelling Unit	20	340,260	0.00	0.00	915	—
Health Club	50	1000sqft	1.1	49,657	0.00	0.00	—	—

1.3. User-Selected Emission Reduction Measures by Emissions Sector

No measures selected

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.	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	6,804	1,253	17,676	38	1,195	1,441	2,636	1,173	366	1,539	180,617	2,574,863	2,755,480	3,389	105	9,502	2,881,062
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	6,558	1,296	15,654	38	1,193	1,441	2,634	1,171	366	1,537	180,617	2,508,055	2,688,672	3,395	109	3,623	2,809,624
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Unmit.	2,729	995	9,254	18	108	1,421	1,529	105	361	466	37,992	2,256,15	2,294,14	2,969	104	6,073	2,405,34
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	498	182	1,689	3.3	20	259	279	19	66	85	6,290	373,532	379,822	492	17	1,005	398,233

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	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	1,304	695	7,415	16	11	1,441	1,451	9.8	366	375	—	1,620,568	1,620,568	102	75	6,036	1,651,590
Area	5,488	356	10,134	21	1,169	—	1,169	1,147	—	1,147	153,112	298,717	451,829	457	5.6	—	464,916
Energy	11	202	127	1.3	16	—	16	16	—	16	—	620,970	620,970	57	4.7	—	623,812
Water	—	—	—	—	—	—	—	—	—	—	7,887	34,608	42,495	812	20	—	68,641
Waste	—	—	—	—	—	—	—	—	—	—	19,618	0.00	19,618	1,961	0.00	—	68,636
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	3,467	3,467
Total	6,804	1,253	17,676	38	1,195	1,441	2,636	1,173	366	1,539	180,617	2,574,863	2,755,480	3,389	105	9,502	2,881,062
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	1,289	755	7,214	15	11	1,441	1,451	9.8	366	375	—	1,559,925	1,559,925	109	79	156	1,586,338
Area	5,258	339	8,313	21	1,167	—	1,167	1,146	—	1,146	153,112	292,553	445,664	456	5.5	—	458,730
Energy	11	202	127	1.3	16	—	16	16	—	16	—	620,970	620,970	57	4.7	—	623,812
Water	—	—	—	—	—	—	—	—	—	—	7,887	34,608	42,495	812	20	—	68,641
Waste	—	—	—	—	—	—	—	—	—	—	19,618	0.00	19,618	1,961	0.00	—	68,636
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	3,467	3,467

Total	6,558	1,296	15,654	38	1,193	1,441	2,634	1,171	366	1,537	180,617	2,508,055	2,688,672	3,395	109	3,623	2,809,624
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	1,279	758	7,311	15	11	1,421	1,432	9.8	361	371	—	1,576,315	1,576,315	108	79	2,606	1,605,136
Area	1,439	35	1,817	1.5	81	—	81	80	—	80	10,487	24,260	34,747	31	0.42	—	35,657
Energy	11	202	127	1.3	16	—	16	16	—	16	—	620,970	620,970	57	4.7	—	623,812
Water	—	—	—	—	—	—	—	—	—	—	7,887	34,608	42,495	812	20	—	68,641
Waste	—	—	—	—	—	—	—	—	—	—	19,618	0.00	19,618	1,961	0.00	—	68,636
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	3,467	3,467	
Total	2,729	995	9,254	18	108	1,421	1,529	105	361	466	37,992	2,256,153	2,294,145	2,969	104	6,073	2,405,349
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	233	138	1,334	2.8	1.9	259	261	1.8	66	68	—	260,977	260,977	18	13	431	265,749
Area	263	6.3	332	0.28	15	—	15	15	—	15	1,736	4,017	5,753	5.2	0.07	—	5,903
Energy	2.1	37	23	0.23	2.9	—	2.9	2.9	—	2.9	—	102,809	102,809	9.5	0.78	—	103,279
Water	—	—	—	—	—	—	—	—	—	—	1,306	5,730	7,036	134	3.2	—	11,364
Waste	—	—	—	—	—	—	—	—	—	—	3,248	0.00	3,248	325	0.00	—	11,364
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	574	574	
Total	498	182	1,689	3.3	20	259	279	19	66	85	6,290	373,532	379,822	492	17	1,005	398,233

4. Operations Emissions Details

4.1. Mobile Emissions by Land Use

4.1.1. Unmitigated

Mobile source emissions results are presented in Sections 2.6. No further detailed breakdown of emissions is available.

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	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Strip Mall	—	—	—	—	—	—	—	—	—	—	—	75,205	75,205	7.1	0.86	—	75,640
Industrial Park	—	—	—	—	—	—	—	—	—	—	—	213,403	213,403	20	2.4	—	214,638
Apartments Mid Rise	—	—	—	—	—	—	—	—	—	—	—	27,364	27,364	2.6	0.31	—	27,523
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	54,071	54,071	5.1	0.62	—	54,384
City Park	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Government (Civic Center)	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Condo/Townhouse	—	—	—	—	—	—	—	—	—	—	—	1,408	1,408	0.13	0.02	—	1,416
Health Club	—	—	—	—	—	—	—	—	—	—	—	455	455	0.04	0.01	—	458
Total	—	—	—	—	—	—	—	—	—	—	—	371,906	371,906	35	4.3	—	374,058
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Strip Mall	—	—	—	—	—	—	—	—	—	—	—	75,205	75,205	7.1	0.86	—	75,640
Industrial Park	—	—	—	—	—	—	—	—	—	—	—	213,403	213,403	20	2.4	—	214,638

Apartme Mid Rise	—	—	—	—	—	—	—	—	—	—	—	27,364	27,364	2.6	0.31	—	27,523
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	54,071	54,071	5.1	0.62	—	54,384
City Park	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Governm ent (Civic Center)	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Condo/T ownhous e	—	—	—	—	—	—	—	—	—	—	—	1,408	1,408	0.13	0.02	—	1,416
Health Club	—	—	—	—	—	—	—	—	—	—	—	455	455	0.04	0.01	—	458
Total	—	—	—	—	—	—	—	—	—	—	—	371,906	371,906	35	4.3	—	374,058
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Strip Mall	—	—	—	—	—	—	—	—	—	—	—	12,451	12,451	1.2	0.14	—	12,523
Industrial Park	—	—	—	—	—	—	—	—	—	—	—	35,331	35,331	3.3	0.41	—	35,536
Apartme nts Mid Rise	—	—	—	—	—	—	—	—	—	—	—	4,530	4,530	0.43	0.05	—	4,557
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	8,952	8,952	0.85	0.10	—	9,004
City Park	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Governm ent (Civic Center)	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Condo/T ownhous e	—	—	—	—	—	—	—	—	—	—	—	233	233	0.02	< 0.005	—	234

Health Club	—	—	—	—	—	—	—	—	—	—	—	75	75	0.01	< 0.005	—	76
Total	—	—	—	—	—	—	—	—	—	—	—	61,573	61,573	5.8	0.71	—	61,930

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	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Strip Mall	0.71	13	11	0.08	0.98	—	0.98	0.98	—	0.98	—	15,382	15,382	1.4	0.03	—	15,424
Industrial Park	4.7	85	72	0.51	6.5	—	6.5	6.5	—	6.5	—	101,843	101,843	9.0	0.19	—	102,125
Apartments Mid Rise	1.3	22	9.3	0.14	1.8	—	1.8	1.8	—	1.8	—	27,818	27,818	2.5	0.05	—	27,895
Single Family Housing	4.6	79	34	0.51	6.4	—	6.4	6.4	—	6.4	—	100,867	100,867	8.9	0.19	—	101,147
City Park	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Government (Civic Center)	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Condo/Townhouse	0.11	1.9	0.83	0.01	0.16	—	0.16	0.16	—	0.16	—	2,472	2,472	0.22	< 0.005	—	2,479
Health Club	0.03	0.57	0.48	< 0.005	0.04	—	0.04	0.04	—	0.04	—	681	681	0.06	< 0.005	—	683
Total	11	202	127	1.3	16	—	16	16	—	16	—	249,063	249,063	22	0.47	—	249,754
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Strip Mall	0.71	13	11	0.08	0.98	—	0.98	0.98	—	0.98	—	15,382	15,382	1.4	0.03	—	15,424
Industrial Park	4.7	85	72	0.51	6.5	—	6.5	6.5	—	6.5	—	101,843	101,843	9.0	0.19	—	102,125
Apartments Mid Rise	1.3	22	9.3	0.14	1.8	—	1.8	1.8	—	1.8	—	27,818	27,818	2.5	0.05	—	27,895
Single Family Housing	4.6	79	34	0.51	6.4	—	6.4	6.4	—	6.4	—	100,867	100,867	8.9	0.19	—	101,147
City Park	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Government (Civic Center)	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Condo/Townhouse	0.11	1.9	0.83	0.01	0.16	—	0.16	0.16	—	0.16	—	2,472	2,472	0.22	< 0.005	—	2,479
Health Club	0.03	0.57	0.48	< 0.005	0.04	—	0.04	0.04	—	0.04	—	681	681	0.06	< 0.005	—	683
Total	11	202	127	1.3	16	—	16	16	—	16	—	249,063	249,063	22	0.47	—	249,754
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Strip Mall	0.13	2.4	2.0	0.01	0.18	—	0.18	0.18	—	0.18	—	2,547	2,547	0.23	< 0.005	—	2,554
Industrial Park	0.86	16	13	0.09	1.2	—	1.2	1.2	—	1.2	—	16,861	16,861	1.5	0.03	—	16,908
Apartments Mid Rise	0.23	4.0	1.7	0.03	0.32	—	0.32	0.32	—	0.32	—	4,606	4,606	0.41	0.01	—	4,618
Single Family Housing	0.85	15	6.2	0.09	1.2	—	1.2	1.2	—	1.2	—	16,700	16,700	1.5	0.03	—	16,746
City Park	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00

Government (Civic Center)	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Condo/Townhouse	0.02	0.36	0.15	< 0.005	0.03	—	0.03	0.03	—	0.03	—	409	409	0.04	< 0.005	—	410
Health Club	0.01	0.10	0.09	< 0.005	0.01	—	0.01	0.01	—	0.01	—	113	113	0.01	< 0.005	—	113
Total	2.1	37	23	0.23	2.9	—	2.9	2.9	—	2.9	—	41,235	41,235	3.6	0.08	—	41,350

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	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Hearths	4,270	339	8,313	21	1,167	—	1,167	1,146	—	1,146	153,112	292,553	445,664	456	5.5	—	458,730
Consumer Products	899	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	89	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	230	17	1,821	0.09	2.1	—	2.1	1.6	—	1.6	—	6,164	6,164	0.26	0.05	—	6,186
Total	5,488	356	10,134	21	1,169	—	1,169	1,147	—	1,147	153,112	298,717	451,829	457	5.6	—	464,916
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Hearths	4,270	339	8,313	21	1,167	—	1,167	1,146	—	1,146	153,112	292,553	445,664	456	5.5	—	458,730

Consum Products	899	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	89	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	5,258	339	8,313	21	1,167	—	1,167	1,146	—	1,146	153,112	292,553	445,664	456	5.5	—	458,730
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Hearths	53	4.2	104	0.27	15	—	15	14	—	14	1,736	3,317	5,054	5.2	0.06	—	5,202
Consumer Products	164	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	16	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	29	2.1	228	0.01	0.26	—	0.26	0.19	—	0.19	—	699	699	0.03	0.01	—	702
Total	263	6.3	332	0.28	15	—	15	15	—	15	1,736	4,017	5,753	5.2	0.07	—	5,903

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	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Strip Mall	—	—	—	—	—	—	—	—	—	—	1,138	3,861	4,999	117	2.8	—	8,764
Industrial Park	—	—	—	—	—	—	—	—	—	—	5,556	18,851	24,407	571	14	—	42,791

Apartments	—	—	—	—	—	—	—	—	—	—	562	1,907	2,469	58	1.4	—	4,328
Single Family Housing	—	—	—	—	—	—	—	—	—	—	590	9,724	10,315	61	1.5	—	12,313
City Park	—	—	—	—	—	—	—	—	—	—	0.00	123	123	0.01	< 0.005	—	124
Government (Civic Center)	—	—	—	—	—	—	—	—	—	—	13	43	56	1.3	0.03	—	99
Condo/Townhouse	—	—	—	—	—	—	—	—	—	—	23	78	101	2.4	0.06	—	178
Health Club	—	—	—	—	—	—	—	—	—	—	5.6	19	25	0.58	0.01	—	43
Total	—	—	—	—	—	—	—	—	—	—	7,887	34,608	42,495	812	20	—	68,641
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Strip Mall	—	—	—	—	—	—	—	—	—	—	1,138	3,861	4,999	117	2.8	—	8,764
Industrial Park	—	—	—	—	—	—	—	—	—	—	5,556	18,851	24,407	571	14	—	42,791
Apartments Mid Rise	—	—	—	—	—	—	—	—	—	—	562	1,907	2,469	58	1.4	—	4,328
Single Family Housing	—	—	—	—	—	—	—	—	—	—	590	9,724	10,315	61	1.5	—	12,313
City Park	—	—	—	—	—	—	—	—	—	—	0.00	123	123	0.01	< 0.005	—	124
Government (Civic Center)	—	—	—	—	—	—	—	—	—	—	13	43	56	1.3	0.03	—	99
Condo/Townhouse	—	—	—	—	—	—	—	—	—	—	23	78	101	2.4	0.06	—	178

Health Club	—	—	—	—	—	—	—	—	—	—	5.6	19	25	0.58	0.01	—	43
Total	—	—	—	—	—	—	—	—	—	—	7,887	34,608	42,495	812	20	—	68,641
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Strip Mall	—	—	—	—	—	—	—	—	—	—	188	639	828	19	0.47	—	1,451
Industrial Park	—	—	—	—	—	—	—	—	—	—	920	3,121	4,041	95	2.3	—	7,085
Apartments Mid Rise	—	—	—	—	—	—	—	—	—	—	93	316	409	9.6	0.23	—	717
Single Family Housing	—	—	—	—	—	—	—	—	—	—	98	1,610	1,708	10	0.26	—	2,039
City Park	—	—	—	—	—	—	—	—	—	—	0.00	20	20	< 0.005	< 0.005	—	20
Government (Civic Center)	—	—	—	—	—	—	—	—	—	—	2.1	7.2	9.3	0.22	0.01	—	16
Condo/Townhouse	—	—	—	—	—	—	—	—	—	—	3.8	13	17	0.39	0.01	—	29
Health Club	—	—	—	—	—	—	—	—	—	—	0.93	3.2	4.1	0.10	< 0.005	—	7.2
Total	—	—	—	—	—	—	—	—	—	—	1,306	5,730	7,036	134	3.2	—	11,364

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	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Strip Mall	—	—	—	—	—	—	—	—	—	—	4,536	0.00	4,536	453	0.00	—	15,872
Industrial Park	—	—	—	—	—	—	—	—	—	—	8,379	0.00	8,379	837	0.00	—	29,314
Apartments Mid Rise	—	—	—	—	—	—	—	—	—	—	2,979	0.00	2,979	298	0.00	—	10,421
Single Family Housing	—	—	—	—	—	—	—	—	—	—	3,345	0.00	3,345	334	0.00	—	11,704
City Park	—	—	—	—	—	—	—	—	—	—	0.88	0.00	0.88	0.09	0.00	—	3.1
Government (Civic Center)	—	—	—	—	—	—	—	—	—	—	103	0.00	103	10	0.00	—	361
Condo/Townhouse	—	—	—	—	—	—	—	—	—	—	122	0.00	122	12	0.00	—	428
Health Club	—	—	—	—	—	—	—	—	—	—	153	0.00	153	15	0.00	—	534
Total	—	—	—	—	—	—	—	—	—	—	19,618	0.00	19,618	1,961	0.00	—	68,636
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Strip Mall	—	—	—	—	—	—	—	—	—	—	4,536	0.00	4,536	453	0.00	—	15,872
Industrial Park	—	—	—	—	—	—	—	—	—	—	8,379	0.00	8,379	837	0.00	—	29,314
Apartments Mid Rise	—	—	—	—	—	—	—	—	—	—	2,979	0.00	2,979	298	0.00	—	10,421
Single Family Housing	—	—	—	—	—	—	—	—	—	—	3,345	0.00	3,345	334	0.00	—	11,704

City Park	—	—	—	—	—	—	—	—	—	—	0.88	0.00	0.88	0.09	0.00	—	3.1
Government (Civic Center)	—	—	—	—	—	—	—	—	—	—	103	0.00	103	10	0.00	—	361
Condo/Townhouse	—	—	—	—	—	—	—	—	—	—	122	0.00	122	12	0.00	—	428
Health Club	—	—	—	—	—	—	—	—	—	—	153	0.00	153	15	0.00	—	534
Total	—	—	—	—	—	—	—	—	—	—	19,618	0.00	19,618	1,961	0.00	—	68,636
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Strip Mall	—	—	—	—	—	—	—	—	—	—	751	0.00	751	75	0.00	—	2,628
Industrial Park	—	—	—	—	—	—	—	—	—	—	1,387	0.00	1,387	139	0.00	—	4,853
Apartments Mid Rise	—	—	—	—	—	—	—	—	—	—	493	0.00	493	49	0.00	—	1,725
Single Family Housing	—	—	—	—	—	—	—	—	—	—	554	0.00	554	55	0.00	—	1,938
City Park	—	—	—	—	—	—	—	—	—	—	0.15	0.00	0.15	0.01	0.00	—	0.51
Government (Civic Center)	—	—	—	—	—	—	—	—	—	—	17	0.00	17	1.7	0.00	—	60
Condo/Townhouse	—	—	—	—	—	—	—	—	—	—	20	0.00	20	2.0	0.00	—	71
Health Club	—	—	—	—	—	—	—	—	—	—	25	0.00	25	2.5	0.00	—	88
Total	—	—	—	—	—	—	—	—	—	—	3,248	0.00	3,248	325	0.00	—	11,364

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	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Strip Mall	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	50	50
Industrial Park	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	3,264	3,264
Apartments Mid Rise	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	36	36
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	115	115
City Park	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00
Government (Civic Center)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00
Condo/Townhouse	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	2.4	2.4
Health Club	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.24	0.24
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	3,467	3,467
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Strip Mall	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	50	50
Industrial Park	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	3,264	3,264

Apartme Mid Rise	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	36	36
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	115	115
City Park	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00
Governm ent (Civic Center)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00
Condo/T ownhous e	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	2.4	2.4
Health Club	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.24	0.24
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	3,467	3,467
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Strip Mall	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	8.3	8.3
Industrial Park	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	540	540
Apartme nts Mid Rise	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	6.0	6.0
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	19	19
City Park	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00
Governm ent (Civic Center)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00
Condo/T ownhous e	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.40	0.40

Health Club	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.04	0.04
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	574	574

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	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	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	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. 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	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	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	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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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
Total all Land Uses	444,956	444,956	444,956	162,408,940	2,036,275	2,036,275	2,036,275	743,240,375

5.10. Operational Area Sources

5.10.1. Hearths

Land Use	Hearth Type	Unmitigated (number)	Mitigated (number)
Strip Mall	Wood Fireplaces	0	0
Strip Mall	Gas Fireplaces	0	0
Strip Mall	Propane Fireplaces	0	0
Strip Mall	Electric Fireplaces	0	0
Strip Mall	No Fireplaces	0	0
Strip Mall	Conventional Wood Stoves	0	0
Strip Mall	Catalytic Wood Stoves	0	0
Strip Mall	Non-Catalytic Wood Stoves	0	0
Strip Mall	Pellet Wood Stoves	0	0
Industrial Park	Wood Fireplaces	0	0
Industrial Park	Gas Fireplaces	0	0
Industrial Park	Propane Fireplaces	0	0
Industrial Park	Electric Fireplaces	0	0
Industrial Park	No Fireplaces	0	0
Industrial Park	Conventional Wood Stoves	0	0
Industrial Park	Catalytic Wood Stoves	0	0

Industrial Park	Non-Catalytic Wood Stoves	0	0
Industrial Park	Pellet Wood Stoves	0	0
Apartments Mid Rise	Wood Fireplaces	128	128
Apartments Mid Rise	Gas Fireplaces	2,173	2,173
Apartments Mid Rise	Propane Fireplaces	0	0
Apartments Mid Rise	Electric Fireplaces	0	0
Apartments Mid Rise	No Fireplaces	256	256
Apartments Mid Rise	Conventional Wood Stoves	0	0
Apartments Mid Rise	Catalytic Wood Stoves	128	128
Apartments Mid Rise	Non-Catalytic Wood Stoves	128	128
Apartments Mid Rise	Pellet Wood Stoves	0	0
Single Family Housing	Wood Fireplaces	411	411
Single Family Housing	Gas Fireplaces	6,979	6,979
Single Family Housing	Propane Fireplaces	0	0
Single Family Housing	Electric Fireplaces	0	0
Single Family Housing	No Fireplaces	821	821
Single Family Housing	Conventional Wood Stoves	0	0
Single Family Housing	Catalytic Wood Stoves	411	411
Single Family Housing	Non-Catalytic Wood Stoves	411	411
Single Family Housing	Pellet Wood Stoves	0	0
Apartments Mid Rise	Wood Fireplaces	263	263
Apartments Mid Rise	Gas Fireplaces	4,470	4,470
Apartments Mid Rise	Propane Fireplaces	0	0
Apartments Mid Rise	Electric Fireplaces	0	0
Apartments Mid Rise	No Fireplaces	526	526
Apartments Mid Rise	Conventional Wood Stoves	0	0
Apartments Mid Rise	Catalytic Wood Stoves	263	263
Apartments Mid Rise	Non-Catalytic Wood Stoves	263	263

Apartments Mid Rise	Pellet Wood Stoves	0	0
City Park	Wood Fireplaces	0	0
City Park	Gas Fireplaces	0	0
City Park	Propane Fireplaces	0	0
City Park	Electric Fireplaces	0	0
City Park	No Fireplaces	0	0
City Park	Conventional Wood Stoves	0	0
City Park	Catalytic Wood Stoves	0	0
City Park	Non-Catalytic Wood Stoves	0	0
City Park	Pellet Wood Stoves	0	0
Government (Civic Center)	Wood Fireplaces	0	0
Government (Civic Center)	Gas Fireplaces	0	0
Government (Civic Center)	Propane Fireplaces	0	0
Government (Civic Center)	Electric Fireplaces	0	0
Government (Civic Center)	No Fireplaces	0	0
Government (Civic Center)	Conventional Wood Stoves	0	0
Government (Civic Center)	Catalytic Wood Stoves	0	0
Government (Civic Center)	Non-Catalytic Wood Stoves	0	0
Government (Civic Center)	Pellet Wood Stoves	0	0
Condo/Townhouse	Wood Fireplaces	16	16
Condo/Townhouse	Gas Fireplaces	273	273
Condo/Townhouse	Propane Fireplaces	0	0
Condo/Townhouse	Electric Fireplaces	0	0
Condo/Townhouse	No Fireplaces	32	32
Condo/Townhouse	Conventional Wood Stoves	0	0
Condo/Townhouse	Catalytic Wood Stoves	16	16
Condo/Townhouse	Non-Catalytic Wood Stoves	16	16
Condo/Townhouse	Pellet Wood Stoves	0	0

Health Club	Wood Fireplaces	0	0
Health Club	Gas Fireplaces	0	0
Health Club	Propane Fireplaces	0	0
Health Club	Electric Fireplaces	0	0
Health Club	No Fireplaces	0	0
Health Club	Conventional Wood Stoves	0	0
Health Club	Catalytic Wood Stoves	0	0
Health Club	Non-Catalytic Wood Stoves	0	0
Health Club	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)
undefined	43,331,760	14,443,920	30,905,429	10,301,810	—

5.10.3. Landscape Equipment

Season	Unit	Value
Snow Days	day/yr	0.00
Summer Days	day/yr	250

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)
Strip Mall	78,734,251	349	0.0330	0.0040	47,995,110
Industrial Park	223,418,863	349	0.0330	0.0040	317,777,103
Apartments Mid Rise	9,369,872	349	0.0330	0.0040	28,389,090

Single Family Housing	56,609,141	349	0.0330	0.0040	314,733,192
Apartments Mid Rise	19,278,622	349	0.0330	0.0040	58,410,887
City Park	0.00	349	0.0330	0.0040	0.00
Government (Civic Center)	0.00	349	0.0330	0.0040	0.00
Condo/Townhouse	1,474,085	349	0.0330	0.0040	7,713,745
Health Club	476,346	349	0.0330	0.0040	2,125,416

5.12. Operational Water and Wastewater Consumption

5.12.1. Unmitigated

Land Use	Indoor Water (gal/year)	Outdoor Water (gal/year)
Strip Mall	593,811,924	0.00
Industrial Park	2,899,258,256	0.00
Apartments Mid Rise	95,915,561	0.00
Single Family Housing	308,085,587	1,523,258,662
Apartments Mid Rise	197,347,393	0.00
City Park	0.00	24,284,771
Government (Civic Center)	6,674,568	0.00
Condo/Townhouse	12,045,734	0.00
Health Club	2,936,871	0.00

5.13. Operational Waste Generation

5.13.1. Unmitigated

Land Use	Waste (ton/year)	Cogeneration (kWh/year)
Strip Mall	8,417	0.00
Industrial Park	15,546	0.00
Apartments Mid Rise	1,808	0.00

Single Family Housing	6,207	0.00
Apartments Mid Rise	3,719	0.00
City Park	1.6	0.00
Government (Civic Center)	192	0.00
Condo/Townhouse	227	0.00
Health Club	283	0.00

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
Strip Mall	Other commercial A/C and heat pumps	R-410A	2,088	< 0.005	4.0	4.0	18
Strip Mall	Stand-alone retail refrigerators and freezers	R-134a	1,430	0.04	1.00	0.00	1.00
Strip Mall	Walk-in refrigerators and freezers	R-404A	3,922	< 0.005	7.5	7.5	20
Industrial Park	Other commercial A/C and heat pumps	R-410A	2,088	0.30	4.0	4.0	18
Apartments Mid Rise	Average room A/C & Other residential A/C and heat pumps	R-410A	2,088	< 0.005	2.5	2.5	10.0
Apartments Mid Rise	Household refrigerators and/or freezers	R-134a	1,430	0.12	0.60	0.00	1.00
Single Family Housing	Average room A/C & Other residential A/C and heat pumps	R-410A	2,088	< 0.005	2.5	2.5	10.0
Single Family Housing	Household refrigerators and/or freezers	R-134a	1,430	0.12	0.60	0.00	1.00

Apartments Mid Rise	Average room A/C & Other residential A/C and heat pumps	R-410A	2,088	< 0.005	2.5	2.5	10.0
Apartments Mid Rise	Household refrigerators and/or freezers	R-134a	1,430	0.12	0.60	0.00	1.00
City Park	Other commercial A/C and heat pumps	R-410A	2,088	< 0.005	4.0	4.0	18
City Park	Stand-alone retail refrigerators and freezers	R-134a	1,430	0.04	1.00	0.00	1.00
Government (Civic Center)	Household refrigerators and/or freezers	R-134a	1,430	0.02	0.60	0.00	1.00
Government (Civic Center)	Other commercial A/C and heat pumps	R-410A	2,088	< 0.005	4.0	4.0	18
Condo/Townhouse	Average room A/C & Other residential A/C and heat pumps	R-410A	2,088	< 0.005	2.5	2.5	10.0
Condo/Townhouse	Household refrigerators and/or freezers	R-134a	1,430	0.12	0.60	0.00	1.00
Health Club	Other commercial A/C and heat pumps	R-410A	2,088	< 0.005	4.0	4.0	18
Health Club	Stand-alone retail refrigerators and freezers	R-134a	1,430	0.04	1.00	0.00	1.00

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	12	annual days of extreme heat
Extreme Precipitation	5.2	annual days with precipitation above 20 mm

Sea Level Rise	—	meters of inundation depth
Wildfire	0.59	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	1	0	0	N/A
Extreme Precipitation	N/A	N/A	N/A	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	1	1	1	2

Extreme Precipitation	N/A	N/A	N/A	N/A
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	55
AQ-PM	83
AQ-DPM	87
Drinking Water	78
Lead Risk Housing	62
Pesticides	0.00
Toxic Releases	92
Traffic	92
Effect Indicators	—

CleanUp Sites	65
Groundwater	11
Haz Waste Facilities/Generators	95
Impaired Water Bodies	0.00
Solid Waste	81
Sensitive Population	—
Asthma	33
Cardio-vascular	53
Low Birth Weights	29
Socioeconomic Factor Indicators	—
Education	62
Housing	39
Linguistic	47
Poverty	32
Unemployment	66

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	74.90055178
Employed	92.3649429
Median HI	68.29205697
Education	—
Bachelor's or higher	59.54061337
High school enrollment	100
Preschool enrollment	57.19235211
Transportation	—

Auto Access	82.44578468
Active commuting	63.55703837
Social	—
2-parent households	71.91068908
Voting	45.3997177
Neighborhood	—
Alcohol availability	16.30950853
Park access	48.36391634
Retail density	98.38316438
Supermarket access	79.84088284
Tree canopy	24.93263185
Housing	—
Homeownership	33.20929039
Housing habitability	35.94251251
Low-inc homeowner severe housing cost burden	90.99191582
Low-inc renter severe housing cost burden	54.20248941
Uncrowded housing	49.60862312
Health Outcomes	—
Insured adults	60.5800077
Arthritis	0.0
Asthma ER Admissions	68.0
High Blood Pressure	0.0
Cancer (excluding skin)	0.0
Asthma	0.0
Coronary Heart Disease	0.0
Chronic Obstructive Pulmonary Disease	0.0
Diagnosed Diabetes	0.0
Life Expectancy at Birth	72.0

Cognitively Disabled	84.2
Physically Disabled	55.6
Heart Attack ER Admissions	53.4
Mental Health Not Good	0.0
Chronic Kidney Disease	0.0
Obesity	0.0
Pedestrian Injuries	19.6
Physical Health Not Good	0.0
Stroke	0.0
Health Risk Behaviors	—
Binge Drinking	0.0
Current Smoker	0.0
No Leisure Time for Physical Activity	0.0
Climate Change Exposures	—
Wildfire Risk	0.0
SLR Inundation Area	0.0
Children	27.6
Elderly	67.6
English Speaking	54.0
Foreign-born	38.1
Outdoor Workers	64.1
Climate Change Adaptive Capacity	—
Impervious Surface Cover	27.3
Traffic Density	84.0
Traffic Access	87.4
Other Indices	—
Hardship	24.9
Other Decision Support	—

2016 Voting	73.1

7.3. Overall Health & Equity Scores

Metric	Result for Project Census Tract
CalEnviroScreen 4.0 Score for Project Location (a)	67
Healthy Places Index Score for Project Location (b)	74
Project Located in a Designated Disadvantaged Community (Senate Bill 535)	No
Project Located in a Low-Income Community (Assembly Bill 1550)	No
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	Revised population consistent with City estimate

BCSP - Existing Detailed Report

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8.3. Land Use

1. Basic Project Information

1.1. Basic Project Information

Data Field	Value
Project Name	BCSP - Existing
Operational Year	2025
Lead Agency	—
Land Use Scale	Plan/community
Analysis Level for Defaults	County
Windspeed (m/s)	1.80000
Precipitation (days)	21.2000
Location	33.915263122982054, -117.88643108541962
County	Orange
City	Brea
Air District	South Coast AQMD
Air Basin	South Coast
TAZ	5752
EDFZ	7
Electric Utility	Southern California Edison
Gas Utility	Southern California Gas
App Version	2022.1.1.37

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	1,417.00	Dwelling Unit	37.2895	1,360,320	0.00000	0.00000	4,040.00	—
Strip Mall	5,113.86	1000sqft	117.398	5,113,863	0.00000	0.00000	—	—

1.3. User-Selected Emission Reduction Measures by Emissions Sector

No measures selected

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.	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	815.787	176.163	2,438.64	4.94206	104.535	273.363	377.898	102.449	69.3844	171.834	17,534.8	404,563	422,098	493.714	17.4560	1,186.72	440,830
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	769.211	184.791	2,097.98	4.81155	104.102	273.363	377.465	102.122	69.3844	171.507	17,534.8	391,928	409,463	494.924	18.1496	71.2841	427,316
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	452.505	159.916	1,652.28	3.14132	10.1675	269.647	279.814	9.83029	68.4553	78.2856	5,171.01	372,188	377,359	457.879	17.6993	536.050	394,616
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	82.5822	29.1847	301.540	0.57329	1.85557	49.2105	51.0661	1.79403	12.4931	14.2871	856.120	61,619.9	62,476.0	75.8071	2.93031	88.7493	65,333.2

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	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	247.379	131.906	1,406.82	3.01224	1.99308	273.363	275.356	1.85496	69.3844	71.2394	—	307,473	307,473	19.3968	14.2812	1,145.13	313,359

Area	567.722	32.0590	1,023.22	1.85511	101.596	—	101.596	99.6479	—	99.6479	13,272.9	26,490.3	39,763.2	39.6184	0.49065	—	40,899.9
Energy	0.68480	12.1973	8.59875	0.07471	0.94627	—	0.94627	0.94627	—	0.94627	—	67,791.2	67,791.2	6.32529	0.63531	—	68,138.7
Water	—	—	—	—	—	—	—	—	—	—	827.757	2,808.74	3,636.50	85.1429	2.04888	—	6,375.64
Waste	—	—	—	—	—	—	—	—	—	—	3,434.15	0.00000	3,434.15	343.231	0.00000	—	12,014.9
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	41.5929	41.5929
Total	815.787	176.163	2,438.64	4.94206	104.535	273.363	377.898	102.449	69.3844	171.834	17,534.8	404,563	422,098	493.714	17.4560	1,186.72	440,830
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	244.518	143.193	1,368.77	2.89848	1.99536	273.363	275.358	1.85714	69.3844	71.2416	—	295,967	295,967	20.6536	14.9844	29.6912	300,979
Area	524.008	29.4004	720.618	1.83836	101.160	—	101.160	99.3187	—	99.3187	13,272.9	25,360.8	38,633.7	39.5711	0.48102	—	39,766.3
Energy	0.68480	12.1973	8.59875	0.07471	0.94627	—	0.94627	0.94627	—	0.94627	—	67,791.2	67,791.2	6.32529	0.63531	—	68,138.7
Water	—	—	—	—	—	—	—	—	—	—	827.757	2,808.74	3,636.50	85.1429	2.04888	—	6,375.64
Waste	—	—	—	—	—	—	—	—	—	—	3,434.15	0.00000	3,434.15	343.231	0.00000	—	12,014.9
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	41.5929	41.5929
Total	769.211	184.791	2,097.98	4.81155	104.102	273.363	377.465	102.122	69.3844	171.507	17,534.8	391,928	409,463	494.924	18.1496	71.2841	427,316
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	242.656	143.884	1,387.06	2.92923	1.99404	269.647	271.641	1.85588	68.4553	70.3112	—	299,077	299,077	20.4375	14.9755	494.457	304,545
Area	209.165	3.83469	256.617	0.13739	7.22719	—	7.22719	7.02814	—	7.02814	909.104	2,510.69	3,419.80	2.74278	0.03954	—	3,500.15
Energy	0.68480	12.1973	8.59875	0.07471	0.94627	—	0.94627	0.94627	—	0.94627	—	67,791.2	67,791.2	6.32529	0.63531	—	68,138.7
Water	—	—	—	—	—	—	—	—	—	—	827.757	2,808.74	3,636.50	85.1429	2.04888	—	6,375.64
Waste	—	—	—	—	—	—	—	—	—	—	3,434.15	0.00000	3,434.15	343.231	0.00000	—	12,014.9
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	41.5929	41.5929
Total	452.505	159.916	1,652.28	3.14132	10.1675	269.647	279.814	9.83029	68.4553	78.2856	5,171.01	372,188	377,359	457.879	17.6993	536.050	394,616
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	44.2846	26.2589	253.138	0.53458	0.36391	49.2105	49.5744	0.33870	12.4931	12.8318	—	49,515.6	49,515.6	3.38365	2.47937	81.8631	50,420.9
Area	38.1726	0.69983	46.8327	0.02507	1.31896	—	1.31896	1.28264	—	1.28264	150.513	415.674	566.187	0.45410	0.00655	—	579.490
Energy	0.12498	2.22601	1.56927	0.01363	0.17269	—	0.17269	0.17269	—	0.17269	—	11,223.6	11,223.6	1.04722	0.10518	—	11,281.1

Water	—	—	—	—	—	—	—	—	—	—	137.045	465.019	602.064	14.0964	0.33921	—	1,055.56
Waste	—	—	—	—	—	—	—	—	—	—	568.562	0.00000	568.562	56.8258	0.00000	—	1,989.21
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	6.88618	6.88618
Total	82.5822	29.1847	301.540	0.57329	1.85557	49.2105	51.0661	1.79403	12.4931	14.2871	856.120	61,619.9	62,476.0	75.8071	2.93031	88.7493	65,333.2

4. Operations Emissions Details

4.1. Mobile Emissions by Land Use

4.1.1. Unmitigated

Mobile source emissions results are presented in Sections 2.6. No further detailed breakdown of emissions is available.

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	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	—	—	—	—	—	—	—	—	—	—	—	4,961.62	4,961.62	0.46964	0.05693	—	4,990.33
Strip Mall	—	—	—	—	—	—	—	—	—	—	—	47,973.6	47,973.6	4.54090	0.55041	—	48,251.1
Total	—	—	—	—	—	—	—	—	—	—	—	52,935.2	52,935.2	5.01054	0.60734	—	53,241.4
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Apartments Mid Rise	—	—	—	—	—	—	—	—	—	—	—	4,961.62	4,961.62	0.46964	0.05693	—	4,990.33

Strip Mall	—	—	—	—	—	—	—	—	—	—	—	47,973.6	47,973.6	4.54090	0.55041	—	48,251.1
Total	—	—	—	—	—	—	—	—	—	—	—	52,935.2	52,935.2	5.01054	0.60734	—	53,241.4
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Apartments Mid Rise	—	—	—	—	—	—	—	—	—	—	—	821.453	821.453	0.07775	0.00942	—	826.206
Strip Mall	—	—	—	—	—	—	—	—	—	—	—	7,942.57	7,942.57	0.75180	0.09113	—	7,988.52
Total	—	—	—	—	—	—	—	—	—	—	—	8,764.03	8,764.03	0.82955	0.10055	—	8,814.73

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	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	0.23250	3.97370	1.69094	0.02536	0.32128	—	0.32128	0.32128	—	0.32128	—	5,043.92	5,043.92	0.44639	0.00950	—	5,057.91
Strip Mall	0.45230	8.22359	6.90781	0.04934	0.62499	—	0.62499	0.62499	—	0.62499	—	9,812.11	9,812.11	0.86837	0.01848	—	9,839.33
Total	0.68480	12.1973	8.59875	0.07471	0.94627	—	0.94627	0.94627	—	0.94627	—	14,856.0	14,856.0	1.31475	0.02797	—	14,897.2
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Apartments Mid Rise	0.23250	3.97370	1.69094	0.02536	0.32128	—	0.32128	0.32128	—	0.32128	—	5,043.92	5,043.92	0.44639	0.00950	—	5,057.91
Strip Mall	0.45230	8.22359	6.90781	0.04934	0.62499	—	0.62499	0.62499	—	0.62499	—	9,812.11	9,812.11	0.86837	0.01848	—	9,839.33
Total	0.68480	12.1973	8.59875	0.07471	0.94627	—	0.94627	0.94627	—	0.94627	—	14,856.0	14,856.0	1.31475	0.02797	—	14,897.2
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Apartment Mid Rise	0.04243	0.72520	0.30860	0.00463	0.05863	—	0.05863	0.05863	—	0.05863	—	835.079	835.079	0.07390	0.00157	—	837.395
Strip Mall	0.08254	1.50080	1.26068	0.00900	0.11406	—	0.11406	0.11406	—	0.11406	—	1,624.51	1,624.51	0.14377	0.00306	—	1,629.01
Total	0.12498	2.22601	1.56927	0.01363	0.17269	—	0.17269	0.17269	—	0.17269	—	2,459.59	2,459.59	0.21767	0.00463	—	2,466.41

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	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Hearths	370.136	29.4004	720.618	1.83836	101.160	—	101.160	99.3187	—	99.3187	13,272.9	25,360.8	38,633.7	39.5711	0.48102	—	39,766.3
Consumer Products	138.548	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	15.3242	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	43.7147	2.65862	302.600	0.01675	0.43568	—	0.43568	0.32921	—	0.32921	—	1,129.54	1,129.54	0.04735	0.00963	—	1,133.59
Total	567.722	32.0590	1,023.22	1.85511	101.596	—	101.596	99.6479	—	99.6479	13,272.9	26,490.3	39,763.2	39.6184	0.49065	—	40,899.9
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Hearths	370.136	29.4004	720.618	1.83836	101.160	—	101.160	99.3187	—	99.3187	13,272.9	25,360.8	38,633.7	39.5711	0.48102	—	39,766.3
Consumer Products	138.548	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Architectural	15.3242	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	524.008	29.4004	720.618	1.83836	101.160	—	101.160	99.3187	—	99.3187	13,272.9	25,360.8	38,633.7	39.5711	0.48102	—	39,766.3
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Hearths	4.62670	0.36750	9.00772	0.02298	1.26450	—	1.26450	1.24148	—	1.24148	150.513	287.587	438.099	0.44873	0.00545	—	450.943
Consumer Products	25.2849	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	2.79667	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	5.46433	0.33233	37.8249	0.00209	0.05446	—	0.05446	0.04115	—	0.04115	—	128.088	128.088	0.00537	0.00109	—	128.547
Total	38.1726	0.69983	46.8327	0.02507	1.31896	—	1.31896	1.28264	—	1.28264	150.513	415.674	566.187	0.45410	0.00655	—	579.490

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	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	—	—	—	—	—	—	—	—	—	—	101.894	345.745	447.638	10.4808	0.25221	—	784.815
Strip Mall	—	—	—	—	—	—	—	—	—	—	725.864	2,463.00	3,188.86	74.6622	1.79667	—	5,590.82
Total	—	—	—	—	—	—	—	—	—	—	827.757	2,808.74	3,636.50	85.1429	2.04888	—	6,375.64

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Apartments Mid Rise	—	—	—	—	—	—	—	—	—	—	101.894	345.745	447.638	10.4808	0.25221	—	784.815
Strip Mall	—	—	—	—	—	—	—	—	—	—	725.864	2,463.00	3,188.86	74.6622	1.79667	—	5,590.82
Total	—	—	—	—	—	—	—	—	—	—	827.757	2,808.74	3,636.50	85.1429	2.04888	—	6,375.64
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Apartments Mid Rise	—	—	—	—	—	—	—	—	—	—	16.8697	57.2420	74.1117	1.73521	0.04176	—	129.935
Strip Mall	—	—	—	—	—	—	—	—	—	—	120.175	407.777	527.952	12.3612	0.29746	—	925.624
Total	—	—	—	—	—	—	—	—	—	—	137.045	465.019	602.064	14.0964	0.33921	—	1,055.56

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	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	—	—	—	—	—	—	—	—	—	—	540.286	0.00000	540.286	53.9997	0.00000	—	1,890.28
Strip Mall	—	—	—	—	—	—	—	—	—	—	2,893.86	0.00000	2,893.86	289.231	0.00000	—	10,124.6
Total	—	—	—	—	—	—	—	—	—	—	3,434.15	0.00000	3,434.15	343.231	0.00000	—	12,014.9

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Apartments Mid Rise	—	—	—	—	—	—	—	—	—	—	540.286	0.00000	540.286	53.9997	0.00000	—	1,890.28
Strip Mall	—	—	—	—	—	—	—	—	—	—	2,893.86	0.00000	2,893.86	289.231	0.00000	—	10,124.6
Total	—	—	—	—	—	—	—	—	—	—	3,434.15	0.00000	3,434.15	343.231	0.00000	—	12,014.9
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Apartments Mid Rise	—	—	—	—	—	—	—	—	—	—	89.4506	0.00000	89.4506	8.94026	0.00000	—	312.957
Strip Mall	—	—	—	—	—	—	—	—	—	—	479.112	0.00000	479.112	47.8855	0.00000	—	1,676.25
Total	—	—	—	—	—	—	—	—	—	—	568.562	0.00000	568.562	56.8258	0.00000	—	1,989.21

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	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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	9.74262	9.74262
Strip Mall	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	31.8503	31.8503
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	41.5929	41.5929

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Apartments Mid Rise	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	9.74262	9.74262
Strip Mall	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	31.8503	31.8503
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	41.5929	41.5929
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Apartments Mid Rise	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1.61300	1.61300
Strip Mall	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	5.27318	5.27318
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	6.88618	6.88618

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	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	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	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. 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	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	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	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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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
Total all Land Uses	84,422.0	84,422.0	84,422.0	30,814,030	386,346	386,346	386,346	141,016,290

5.10. Operational Area Sources

5.10.1. Hearths

Land Use	Hearth Type	Unmitigated (number)	Mitigated (number)
Apartments Mid Rise	Wood Fireplaces	71	71
Apartments Mid Rise	Gas Fireplaces	1,204	1,204
Apartments Mid Rise	Propane Fireplaces	0	0
Apartments Mid Rise	Electric Fireplaces	0	0
Apartments Mid Rise	No Fireplaces	142	142
Apartments Mid Rise	Conventional Wood Stoves	0	0
Apartments Mid Rise	Catalytic Wood Stoves	71	71

Apartments Mid Rise	Non-Catalytic Wood Stoves	71	71
Apartments Mid Rise	Pellet Wood Stoves	0	0
Strip Mall	Wood Fireplaces	0	0
Strip Mall	Gas Fireplaces	0	0
Strip Mall	Propane Fireplaces	0	0
Strip Mall	Electric Fireplaces	0	0
Strip Mall	No Fireplaces	0	0
Strip Mall	Conventional Wood Stoves	0	0
Strip Mall	Catalytic Wood Stoves	0	0
Strip Mall	Non-Catalytic Wood Stoves	0	0
Strip Mall	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)
2,754,648	918,216	7,670,795	2,556,932	—

5.10.3. Landscape Equipment

Season	Unit	Value
Snow Days	day/yr	0.00000
Summer Days	day/yr	250.000

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	5,194,487	348.637	0.0330	0.0040	15,738,396

Strip Mall	50,225,122	348.637	0.0330	0.0040	30,616,412

5.12. Operational Water and Wastewater Consumption

5.12.1. Unmitigated

Land Use	Indoor Water (gal/year)	Outdoor Water (gal/year)
Apartments Mid Rise	53,173,846	0.00000
Strip Mall	378,796,727	0.00000

5.13. Operational Waste Generation

5.13.1. Unmitigated

Land Use	Waste (ton/year)	Cogeneration (kWh/year)
Apartments Mid Rise	1,002.50	0.00000
Strip Mall	5,369.56	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
Apartments Mid Rise	Household refrigerators and/or freezers	R-134a	1,430.00	0.11538	0.60000	0.00000	1.000000
Strip Mall	Other commercial A/C and heat pumps	R-410A	2,088.00	0.00180	4.00000	4.00000	18.0000
Strip Mall	Stand-alone retail refrigerators and freezers	R-134a	1,430.00	0.03750	1.000000	0.00000	1.000000

Strip Mall	Walk-in refrigerators and freezers	R-404A	3,922.00	0.00040	7.50000	7.50000	20.0000

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	12.3100	annual days of extreme heat
Extreme Precipitation	5.15000	annual days with precipitation above 20 mm
Sea Level Rise	—	meters of inundation depth
Wildfire	0.59000	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	0	0	0	N/A
Extreme Precipitation	N/A	N/A	N/A	N/A
Sea Level Rise	0	0	0	N/A
Wildfire	0	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	1	1	1	2
Extreme Precipitation	N/A	N/A	N/A	N/A
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	55.3827

AQ-PM	82.9869
AQ-DPM	86.7704
Drinking Water	78.3315
Lead Risk Housing	61.6887
Pesticides	0.00000
Toxic Releases	92.3981
Traffic	92.4000
Effect Indicators	—
CleanUp Sites	64.8750
Groundwater	10.6425
Haz Waste Facilities/Generators	94.7981
Impaired Water Bodies	0.00000
Solid Waste	81.1913
Sensitive Population	—
Asthma	33.0010
Cardio-vascular	52.6171
Low Birth Weights	28.9582
Socioeconomic Factor Indicators	—
Education	61.6553
Housing	38.7833
Linguistic	47.0835
Poverty	32.0477
Unemployment	65.6299

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	74.90055178
Employed	92.3649429
Median HI	68.29205697
Education	—
Bachelor's or higher	59.54061337
High school enrollment	100
Preschool enrollment	57.19235211
Transportation	—
Auto Access	82.44578468
Active commuting	63.55703837
Social	—
2-parent households	71.91068908
Voting	45.3997177
Neighborhood	—
Alcohol availability	16.30950853
Park access	48.36391634
Retail density	98.38316438
Supermarket access	79.84088284
Tree canopy	24.93263185
Housing	—
Homeownership	33.20929039
Housing habitability	35.94251251
Low-inc homeowner severe housing cost burden	90.99191582
Low-inc renter severe housing cost burden	54.20248941
Uncrowded housing	49.60862312
Health Outcomes	—
Insured adults	60.5800077
Arthritis	0.0

Asthma ER Admissions	68.0
High Blood Pressure	0.0
Cancer (excluding skin)	0.0
Asthma	0.0
Coronary Heart Disease	0.0
Chronic Obstructive Pulmonary Disease	0.0
Diagnosed Diabetes	0.0
Life Expectancy at Birth	72.0
Cognitively Disabled	84.2
Physically Disabled	55.6
Heart Attack ER Admissions	53.4
Mental Health Not Good	0.0
Chronic Kidney Disease	0.0
Obesity	0.0
Pedestrian Injuries	19.6
Physical Health Not Good	0.0
Stroke	0.0
Health Risk Behaviors	—
Binge Drinking	0.0
Current Smoker	0.0
No Leisure Time for Physical Activity	0.0
Climate Change Exposures	—
Wildfire Risk	0.0
SLR Inundation Area	0.0
Children	27.6
Elderly	67.6
English Speaking	54.0
Foreign-born	38.1

Outdoor Workers	64.1
Climate Change Adaptive Capacity	—
Impervious Surface Cover	27.3
Traffic Density	84.0
Traffic Access	87.4
Other Indices	—
Hardship	24.9
Other Decision Support	—
2016 Voting	73.1

7.3. Overall Health & Equity Scores

Metric	Result for Project Census Tract
CalEnviroScreen 4.0 Score for Project Location (a)	67.0000
Healthy Places Index Score for Project Location (b)	74.0000
Project Located in a Designated Disadvantaged Community (Senate Bill 535)	No
Project Located in a Low-Income Community (Assembly Bill 1550)	No
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	Revised population based on City estimate

8.3. Land Use

Model Parameter	Units	Default Value	New Value
Landscape Area	sq. ft	—	0.00000
Special Landscape Area	sq. ft	—	0.00000
Population	people	4,223.00	4,040.00

Brea Construction Detailed Report

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1. Basic Project Information

1.1. Basic Project Information

Data Field	Value
Project Name	Brea Construction
Construction Start Date	1/2/2026
Lead Agency	—
Land Use Scale	Plan/community
Analysis Level for Defaults	County
Windspeed (m/s)	1.8
Precipitation (days)	21
Location	33.9198640533065, -117.88900536824646
County	Orange
City	Brea
Air District	South Coast AQMD
Air Basin	South Coast
TAZ	5752
EDFZ	7
Electric Utility	Southern California Edison
Gas Utility	Southern California Gas
App Version	2022.1.1.35

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
Strip Mall	187	1000sqft	4.3	187,366	0.00	0.00	—	—
Industrial Park	157	1000sqft	3.6	157,143	0.00	0.00	—	—

Apartments Mid Rise	5.0	Dwelling Unit	0.00	0.00	0.00	0.00	15	—
Single Family Housing	66	Dwelling Unit	21	128,700	773,049	0.00	197	—
Apartments Mid Rise	225	Dwelling Unit	5.9	216,000	0.00	0.00	671	—
City Park	0.10	Acre	0.10	0.00	5,269	5,269	—	—
Government (Civic Center)	1.7	1000sqft	0.00	0.00	0.00	0.00	—	—
Health Club	13	1000sqft	0.29	12,777	0.00	0.00	—	—

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.	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	102	57	75	0.17	1.9	13	14	1.8	5.2	6.7	—	25,327	25,327	1.2	1.8	38	25,937
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	102	127	88	0.58	2.2	84	86	2.1	16	18	—	87,232	87,232	6.1	12	4.5	91,078
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	18	37	41	0.13	0.93	16	17	0.87	3.6	4.5	—	21,051	21,051	1.2	2.3	17	21,781
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Unmit.	3.3	6.7	7.4	0.02	0.17	3.0	3.1	0.16	0.66	0.82	—	3,485	3,485	0.20	0.38	2.9	3,606

2.2. 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	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily - Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2026	102	57	75	0.17	1.9	13	14	1.8	5.2	6.7	—	25,327	25,327	1.2	1.8	38	25,937
Daily - Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2026	102	127	88	0.58	2.2	84	86	2.1	16	18	—	87,232	87,232	6.1	12	4.5	91,078
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2026	18	37	41	0.13	0.93	16	17	0.87	3.6	4.5	—	21,051	21,051	1.2	2.3	17	21,781
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2026	3.3	6.7	7.4	0.02	0.17	3.0	3.1	0.16	0.66	0.82	—	3,485	3,485	0.20	0.38	2.9	3,606

3. Construction Emissions Details

3.1. Demolition (2026) - Unmitigated

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

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road Equipment	2.3	21	19	0.03	0.84	—	0.84	0.78	—	0.78	—	3,427	3,427	0.14	0.03	—	3,438
Demolition	—	—	—	—	—	59	59	—	8.9	8.9	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.31	2.8	2.6	< 0.005	0.12	—	0.12	0.11	—	0.11	—	469	469	0.02	< 0.005	—	471
Demolition	—	—	—	—	—	8.0	8.0	—	1.2	1.2	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.06	0.52	0.48	< 0.005	0.02	—	0.02	0.02	—	0.02	—	78	78	< 0.005	< 0.005	—	78
Demolition	—	—	—	—	—	1.5	1.5	—	0.22	0.22	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.05	0.05	0.68	0.00	0.00	0.20	0.20	0.00	0.05	0.05	—	186	186	< 0.005	0.01	0.02	188
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	1.1	92	40	0.50	0.96	20	21	0.96	5.5	6.5	—	74,418	74,418	5.6	12	3.9	78,072
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.10	0.00	0.00	0.03	0.03	0.00	0.01	0.01	—	26	26	< 0.005	< 0.005	0.04	26

Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.15	13	5.4	0.07	0.13	2.7	2.8	0.13	0.75	0.88	—	10,192	10,192	0.77	1.6	8.9	10,701
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.02	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	4.3	4.3	< 0.005	< 0.005	0.01	4.3
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.03	2.3	0.99	0.01	0.02	0.49	0.51	0.02	0.14	0.16	—	1,687	1,687	0.13	0.27	1.5	1,772

3.3. Site Preparation (2026) - Unmitigated

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

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	3.1	29	29	0.05	1.2	—	1.2	1.1	—	1.1	—	5,298	5,298	0.21	0.04	—	5,316
Dust From Material Movement	—	—	—	—	—	7.7	7.7	—	3.9	3.9	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	3.1	29	29	0.05	1.2	—	1.2	1.1	—	1.1	—	5,298	5,298	0.21	0.04	—	5,316
Dust From Material Movement	—	—	—	—	—	7.7	7.7	—	3.9	3.9	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.26	2.4	2.4	< 0.005	0.10	—	0.10	0.09	—	0.09	—	435	435	0.02	< 0.005	—	437
Dust From Material Movement	—	—	—	—	—	0.63	0.63	—	0.32	0.32	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.05	0.44	0.43	< 0.005	0.02	—	0.02	0.02	—	0.02	—	72	72	< 0.005	< 0.005	—	72
Dust From Material Movement	—	—	—	—	—	0.11	0.11	—	0.06	0.06	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.06	0.05	0.92	0.00	0.00	0.23	0.23	0.00	0.05	0.05	—	228	228	< 0.005	0.01	0.79	231
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.06	0.06	0.80	0.00	0.00	0.23	0.23	0.00	0.05	0.05	—	217	217	< 0.005	0.01	0.02	219
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Worker	< 0.005	0.01	0.07	0.00	0.00	0.02	0.02	0.00	< 0.005	< 0.005	—	18	18	< 0.005	< 0.005	0.03	18
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	3.0	3.0	< 0.005	< 0.005	< 0.005	3.0
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.5. Grading (2026) - Unmitigated

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

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	3.0	27	28	0.06	1.1	—	1.1	1.0	—	1.0	—	6,599	6,599	0.27	0.05	—	6,621
Dust From Material Movement	—	—	—	—	—	3.6	3.6	—	1.4	1.4	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.63	5.6	5.7	0.01	0.23	—	0.23	0.21	—	0.21	—	1,356	1,356	0.06	0.01	—	1,361

Dust From Material Movement	—	—	—	—	—	0.74	0.74	—	0.29	0.29	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.11	1.0	1.0	< 0.005	0.04	—	0.04	0.04	—	0.04	—	224	224	0.01	< 0.005	—	225
Dust From Material Movement	—	—	—	—	—	0.14	0.14	—	0.05	0.05	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.07	0.06	1.1	0.00	0.00	0.26	0.26	0.00	0.06	0.06	—	260	260	< 0.005	0.01	0.91	264
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.11	8.8	3.9	0.05	0.09	1.9	2.0	0.09	0.55	0.64	—	7,360	7,360	0.56	1.2	15	7,736
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.19	0.00	0.00	0.05	0.05	0.00	0.01	0.01	—	52	52	< 0.005	< 0.005	0.08	52
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.02	1.9	0.80	0.01	0.02	0.40	0.41	0.02	0.11	0.13	—	1,513	1,513	0.11	0.24	1.3	1,588
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.04	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	8.5	8.5	< 0.005	< 0.005	0.01	8.7
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	0.35	0.15	< 0.005	< 0.005	0.07	0.08	< 0.005	0.02	0.02	—	250	250	0.02	0.04	0.22	263

3.7. Building Construction (2026) - Unmitigated

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

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.1	9.9	13	0.02	0.38	—	0.38	0.35	—	0.35	—	2,397	2,397	0.10	0.02	—	2,405
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.1	9.9	13	0.02	0.38	—	0.38	0.35	—	0.35	—	2,397	2,397	0.10	0.02	—	2,405
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.76	7.0	9.2	0.02	0.27	—	0.27	0.25	—	0.25	—	1,708	1,708	0.07	0.01	—	1,713
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.14	1.3	1.7	< 0.005	0.05	—	0.05	0.05	—	0.05	—	283	283	0.01	< 0.005	—	284
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Worker	1.1	0.98	17	0.00	0.00	4.2	4.2	0.00	0.98	0.98	—	4,176	4,176	0.05	0.15	15	4,237
Vendor	0.06	2.9	1.4	0.02	0.02	0.77	0.79	0.02	0.21	0.23	—	2,829	2,829	0.14	0.40	7.3	2,959
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	1.1	1.1	15	0.00	0.00	4.2	4.2	0.00	0.98	0.98	—	3,974	3,974	0.06	0.15	0.38	4,021
Vendor	0.06	3.0	1.5	0.02	0.02	0.77	0.79	0.02	0.21	0.23	—	2,831	2,831	0.14	0.40	0.19	2,953
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.77	0.80	11	0.00	0.00	2.9	2.9	0.00	0.69	0.69	—	2,870	2,870	0.04	0.11	4.5	2,907
Vendor	0.04	2.1	1.0	0.01	0.01	0.54	0.56	0.01	0.15	0.16	—	2,016	2,016	0.10	0.28	2.3	2,105
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.14	0.15	2.0	0.00	0.00	0.54	0.54	0.00	0.13	0.13	—	475	475	0.01	0.02	0.74	481
Vendor	0.01	0.39	0.19	< 0.005	< 0.005	0.10	0.10	< 0.005	0.03	0.03	—	334	334	0.02	0.05	0.37	349
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.9. Paving (2026) - Unmitigated

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

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.76	7.1	9.9	0.01	0.32	—	0.32	0.29	—	0.29	—	1,511	1,511	0.06	0.01	—	1,516
Paving	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.11	1.1	1.5	< 0.005	0.05	—	0.05	0.04	—	0.04	—	228	228	0.01	< 0.005	—	228
Paving	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.02	0.20	0.27	< 0.005	0.01	—	0.01	0.01	—	0.01	—	38	38	< 0.005	< 0.005	—	38
Paving	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.05	0.05	0.79	0.00	0.00	0.20	0.20	0.00	0.05	0.05	—	195	195	< 0.005	0.01	0.68	198
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.11	0.00	0.00	0.03	0.03	0.00	0.01	0.01	—	28	28	< 0.005	< 0.005	0.04	29
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.02	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	4.7	4.7	< 0.005	< 0.005	0.01	4.8

Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.11. Architectural Coating (2026) - Unmitigated

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

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.12	0.86	1.1	< 0.005	0.02	—	0.02	0.02	—	0.02	—	134	134	0.01	< 0.005	—	134
Architectural Coatings	99	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.12	0.86	1.1	< 0.005	0.02	—	0.02	0.02	—	0.02	—	134	134	0.01	< 0.005	—	134
Architectural Coatings	99	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.02	0.13	0.17	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	20	20	< 0.005	< 0.005	—	20
Architectural Coatings	15	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	0.02	0.03	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	3.3	3.3	< 0.005	< 0.005	—	3.3
Architectural Coatings	2.7	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.22	0.20	3.4	0.00	0.00	0.84	0.84	0.00	0.20	0.20	—	835	835	0.01	0.03	2.9	847
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.22	0.22	2.9	0.00	0.00	0.84	0.84	0.00	0.20	0.20	—	795	795	0.01	0.03	0.08	804
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.03	0.03	0.46	0.00	0.00	0.12	0.12	0.00	0.03	0.03	—	121	121	< 0.005	< 0.005	0.19	123
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.08	0.00	0.00	0.02	0.02	0.00	0.01	0.01	—	20	20	< 0.005	< 0.005	0.03	20
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

4. Operations Emissions Details

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	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	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	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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	1/2/2026	3/13/2026	5.0	50	—
Site Preparation	Site Preparation	3/14/2026	4/25/2026	5.0	30	—
Grading	Grading	4/26/2026	8/9/2026	5.0	75	—
Building Construction	Building Construction	1/2/2026	12/31/2026	5.0	260	—
Paving	Paving	6/12/2026	8/27/2026	5.0	55	—
Architectural Coating	Architectural Coating	8/29/2026	11/14/2026	5.0	55	—

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	Concrete/Industrial Saws	Diesel	Average	1.00	8.0	33	0.73
Demolition	Excavators	Diesel	Average	3.0	8.0	36	0.38
Demolition	Rubber Tired Dozers	Diesel	Average	2.0	8.0	367	0.40
Site Preparation	Rubber Tired Dozers	Diesel	Average	3.0	8.0	367	0.40

Site Preparation	Tractors/Loaders/Back	Diesel	Average	4.0	8.0	84	0.37
Grading	Excavators	Diesel	Average	2.0	8.0	36	0.38
Grading	Graders	Diesel	Average	1.00	8.0	148	0.41
Grading	Rubber Tired Dozers	Diesel	Average	1.00	8.0	367	0.40
Grading	Scrapers	Diesel	Average	2.0	8.0	423	0.48
Grading	Tractors/Loaders/Backhoes	Diesel	Average	2.0	8.0	84	0.37
Building Construction	Cranes	Diesel	Average	1.00	7.0	367	0.29
Building Construction	Forklifts	Diesel	Average	3.0	8.0	82	0.20
Building Construction	Generator Sets	Diesel	Average	1.00	8.0	14	0.74
Building Construction	Tractors/Loaders/Backhoes	Diesel	Average	3.0	7.0	84	0.37
Building Construction	Welders	Diesel	Average	1.00	8.0	46	0.45
Paving	Pavers	Diesel	Average	2.0	8.0	81	0.42
Paving	Paving Equipment	Diesel	Average	2.0	8.0	89	0.36
Paving	Rollers	Diesel	Average	2.0	8.0	36	0.38
Architectural Coating	Air Compressors	Diesel	Average	1.00	6.0	37	0.48

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	19	LDA,LDT1,LDT2
Demolition	Vendor	—	10	HHDT,MHDT
Demolition	Hauling	1,086	20	HHDT
Demolition	Onsite truck	—	—	HHDT
Site Preparation	Worker	18	19	LDA,LDT1,LDT2
Site Preparation	Vendor	—	10	HHDT,MHDT
Site Preparation	Hauling	0.00	20	HHDT

Site Preparation	Onsite truck	—	—	HHDT
Grading	Worker	20	19	LDA,LDT1,LDT2
Grading	Vendor	—	10	HHDT,MHDT
Grading	Hauling	107	20	HHDT
Grading	Onsite truck	—	—	HHDT
Building Construction	Worker	321	19	LDA,LDT1,LDT2
Building Construction	Vendor	90	10	HHDT,MHDT
Building Construction	Hauling	0.00	20	HHDT
Building Construction	Onsite truck	—	—	HHDT
Paving	Worker	15	19	LDA,LDT1,LDT2
Paving	Vendor	—	10	HHDT,MHDT
Paving	Hauling	0.00	20	HHDT
Paving	Onsite truck	—	—	HHDT
Architectural Coating	Worker	64	19	LDA,LDT1,LDT2
Architectural Coating	Vendor	—	10	HHDT,MHDT
Architectural Coating	Hauling	0.00	20	HHDT
Architectural Coating	Onsite truck	—	—	HHDT

5.4. Vehicles

5.4.1. Construction Vehicle Control Strategies

Control Strategies Applied	PM10 Reduction	PM2.5 Reduction
Water unpaved roads twice daily	55%	55%
Limit vehicle speeds on unpaved roads to 25 mph	44%	44%

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	698,018	232,673	535,929	178,643	—

5.6. Dust Mitigation

5.6.1. Construction Earthmoving Activities

Phase Name	Material Imported (Cubic Yards)	Material Exported (Cubic Yards)	Acres Graded (acres)	Material Demolished (Building Square Footage)	Acres Paved (acres)
Demolition	0.00	0.00	0.00	4,719,862	0.00
Site Preparation	0.00	0.00	45	0.00	0.00
Grading	42,840	21,600	225	0.00	0.00
Paving	0.00	0.00	0.00	0.00	0.73

5.6.2. Construction Earthmoving Control Strategies

Control Strategies Applied	Frequency (per day)	PM10 Reduction	PM2.5 Reduction
Water Exposed Area	2	61%	61%
Water Demolished Area	2	36%	36%

5.7. Construction Paving

Phase Name	Land Use	Area Paved (acres)	% Asphalt
Paving	Strip Mall	0.00	0%
Paving	Industrial Park	0.00	0%
Paving	Apartments Mid Rise	—	0%
Paving	Single Family Housing	0.73	0%
Paving	Apartments Mid Rise	—	0%
Paving	City Park	0.00	0%
Paving	Government (Civic Center)	0.00	0%
Paving	Health Club	0.00	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	0.00	532	0.03	< 0.005

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	12	annual days of extreme heat
Extreme Precipitation	5.2	annual days with precipitation above 20 mm
Sea Level Rise	—	meters of inundation depth
Wildfire	0.59	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	1	0	0	N/A
Extreme Precipitation	N/A	N/A	N/A	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	1	1	1	2
Extreme Precipitation	N/A	N/A	N/A	N/A
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	55
AQ-PM	83
AQ-DPM	87
Drinking Water	78
Lead Risk Housing	62
Pesticides	0.00
Toxic Releases	92

Traffic	92
Effect Indicators	—
CleanUp Sites	65
Groundwater	11
Haz Waste Facilities/Generators	95
Impaired Water Bodies	0.00
Solid Waste	81
Sensitive Population	—
Asthma	33
Cardio-vascular	53
Low Birth Weights	29
Socioeconomic Factor Indicators	—
Education	62
Housing	39
Linguistic	47
Poverty	32
Unemployment	66

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	74.90055178
Employed	92.3649429
Median HI	68.29205697
Education	—
Bachelor's or higher	59.54061337
High school enrollment	100

Preschool enrollment	57.19235211
Transportation	—
Auto Access	82.44578468
Active commuting	63.55703837
Social	—
2-parent households	71.91068908
Voting	45.3997177
Neighborhood	—
Alcohol availability	16.30950853
Park access	48.36391634
Retail density	98.38316438
Supermarket access	79.84088284
Tree canopy	24.93263185
Housing	—
Homeownership	33.20929039
Housing habitability	35.94251251
Low-inc homeowner severe housing cost burden	90.99191582
Low-inc renter severe housing cost burden	54.20248941
Uncrowded housing	49.60862312
Health Outcomes	—
Insured adults	60.5800077
Arthritis	0.0
Asthma ER Admissions	68.0
High Blood Pressure	0.0
Cancer (excluding skin)	0.0
Asthma	0.0
Coronary Heart Disease	0.0
Chronic Obstructive Pulmonary Disease	0.0

Diagnosed Diabetes	0.0
Life Expectancy at Birth	72.0
Cognitively Disabled	84.2
Physically Disabled	55.6
Heart Attack ER Admissions	53.4
Mental Health Not Good	0.0
Chronic Kidney Disease	0.0
Obesity	0.0
Pedestrian Injuries	19.6
Physical Health Not Good	0.0
Stroke	0.0
Health Risk Behaviors	—
Binge Drinking	0.0
Current Smoker	0.0
No Leisure Time for Physical Activity	0.0
Climate Change Exposures	—
Wildfire Risk	0.0
SLR Inundation Area	0.0
Children	27.6
Elderly	67.6
English Speaking	54.0
Foreign-born	38.1
Outdoor Workers	64.1
Climate Change Adaptive Capacity	—
Impervious Surface Cover	27.3
Traffic Density	84.0
Traffic Access	87.4
Other Indices	—

Hardship	24.9
Other Decision Support	—
2016 Voting	73.1

7.3. Overall Health & Equity Scores

Metric	Result for Project Census Tract
CalEnviroScreen 4.0 Score for Project Location (a)	67
Healthy Places Index Score for Project Location (b)	74
Project Located in a Designated Disadvantaged Community (Senate Bill 535)	No
Project Located in a Low-Income Community (Assembly Bill 1550)	No
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
Construction: Construction Phases	Reduced building construction to one year. Changed date of paving/coating to 2026. Individual activities could occur anytime, with the potential to overlap between projects.

Brea GP Buildout Detailed Report

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1. Basic Project Information

1.1. Basic Project Information

Data Field	Value
Project Name	Brea GP Buildout
Operational Year	2050
Lead Agency	—
Land Use Scale	Plan/community
Analysis Level for Defaults	County
Windspeed (m/s)	1.8
Precipitation (days)	21
Location	33.91898570686023, -117.88591288325267
County	Orange
City	Brea
Air District	South Coast AQMD
Air Basin	South Coast
TAZ	5752
EDFZ	7
Electric Utility	Southern California Edison
Gas Utility	Southern California Gas
App Version	2022.1.1.35

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
Strip Mall	12,701	1000sqft	292	12,700,781	0.00	0.00	—	—
Industrial Park	16,466	1000sqft	378	16,465,901	0.00	0.00	—	—

Apartments Mid Rise	2,677	Dwelling Unit	0.00	0.00	0.00	0.00	7,630	—
Single Family Housing	9,853	Dwelling Unit	3,199	19,213,350	115,406,780	0.00	28,081	—
Apartments Mid Rise	10,884	Dwelling Unit	286	10,448,640	0.00	0.00	31,020	—
City Park	31	Acre	31	0.00	1,344,099	1,344,099	—	—
Library	77	1000sqft	1.8	76,502	0.00	0.00	—	—
Condo/Townhouse	321	Dwelling Unit	20	340,260	0.00	0.00	915	—

1.3. User-Selected Emission Reduction Measures by Emissions Sector

No measures selected

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.	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	6,885	1,156	16,811	39	1,205	1,747	2,952	1,182	443	1,626	191,459	2,704,891	2,896,350	4,465	102	4,752	3,043,136
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	6,563	1,170	13,929	38	1,202	1,747	2,949	1,180	443	1,623	191,459	2,637,367	2,828,826	4,468	105	4,585	2,976,378
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	2,793	772	8,034	18	109	1,724	1,832	107	437	544	48,834	2,263,488	2,312,322	4,040	100	4,655	2,447,636

Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	510	141	1,466	3.2	20	315	334	19	80	99	8,085	374,746	382,831	669	16	771	405,234

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	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	874	421	5,659	15	5.3	1,747	1,753	4.9	443	448	—	1,521,363	1,521,363	63	63	172	1,541,812
Area	5,996	466	10,982	22	1,178	—	1,178	1,156	—	1,156	153,112	433,628	586,739	459	5.9	—	599,973
Energy	15	269	170	1.7	21	—	21	21	—	21	—	715,383	715,383	78	6.5	—	719,274
Water	—	—	—	—	—	—	—	—	—	—	10,811	34,517	45,328	1,113	27	—	81,156
Waste	—	—	—	—	—	—	—	—	—	—	27,536	0.00	27,536	2,752	0.00	—	96,341
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	4,580	4,580
Total	6,885	1,156	16,811	39	1,205	1,747	2,952	1,182	443	1,626	191,459	2,704,891	2,896,350	4,465	102	4,752	3,043,136
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	877	458	5,402	14	5.3	1,747	1,753	4.9	443	448	—	1,462,670	1,462,670	66	66	4.5	1,483,916
Area	5,670	443	8,357	22	1,175	—	1,175	1,154	—	1,154	153,112	424,797	577,909	459	5.8	—	591,111
Energy	15	269	170	1.7	21	—	21	21	—	21	—	715,383	715,383	78	6.5	—	719,274
Water	—	—	—	—	—	—	—	—	—	—	10,811	34,517	45,328	1,113	27	—	81,156
Waste	—	—	—	—	—	—	—	—	—	—	27,536	0.00	27,536	2,752	0.00	—	96,341
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	4,580	4,580
Total	6,563	1,170	13,929	38	1,202	1,747	2,949	1,180	443	1,623	191,459	2,637,367	2,828,826	4,468	105	4,585	2,976,378

Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	867	457	5,494	15	5.3	1,724	1,729	4.9	437	442	—	1,478,444	1,478,444	65	66	74	1,499,728
Area	1,911	46	2,371	1.6	82	—	82	81	—	81	10,487	35,144	45,631	32	0.45	—	46,557
Energy	15	269	170	1.7	21	—	21	21	—	21	—	715,383	715,383	78	6.5	—	719,274
Water	—	—	—	—	—	—	—	—	—	—	10,811	34,517	45,328	1,113	27	—	81,156
Waste	—	—	—	—	—	—	—	—	—	—	27,536	0.00	27,536	2,752	0.00	—	96,341
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	4,580	4,580
Total	2,793	772	8,034	18	109	1,724	1,832	107	437	544	48,834	2,263,488	2,312,322	4,040	100	4,655	2,447,636
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	158	83	1,003	2.6	0.96	315	316	0.90	80	81	—	244,773	244,773	11	11	12	248,297
Area	349	8.4	433	0.29	15	—	15	15	—	15	1,736	5,818	7,555	5.2	0.07	—	7,708
Energy	2.8	49	31	0.30	3.8	—	3.8	3.8	—	3.8	—	118,440	118,440	13	1.1	—	119,084
Water	—	—	—	—	—	—	—	—	—	—	1,790	5,715	7,505	184	4.4	—	13,436
Waste	—	—	—	—	—	—	—	—	—	—	4,559	0.00	4,559	456	0.00	—	15,950
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	758	758
Total	510	141	1,466	3.2	20	315	334	19	80	99	8,085	374,746	382,831	669	16	771	405,234

4. Operations Emissions Details

4.1. Mobile Emissions by Land Use

4.1.1. Unmitigated

Mobile source emissions results are presented in Sections 2.6. No further detailed breakdown of emissions is available.

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	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Strip Mall	—	—	—	—	—	—	—	—	—	—	—	89,125	89,125	11	1.4	—	89,814
Industrial Park	—	—	—	—	—	—	—	—	—	—	—	209,650	209,650	27	3.2	—	211,272
Apartments Mid Rise	—	—	—	—	—	—	—	—	—	—	—	35,519	35,519	4.5	0.54	—	35,794
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	48,541	48,541	6.1	0.74	—	48,916
City Park	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Library	—	—	—	—	—	—	—	—	—	—	—	524	524	0.07	0.01	—	528
Condo/Townhouse	—	—	—	—	—	—	—	—	—	—	—	1,053	1,053	0.13	0.02	—	1,061
Total	—	—	—	—	—	—	—	—	—	—	—	384,412	384,412	49	5.9	—	387,385
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Strip Mall	—	—	—	—	—	—	—	—	—	—	—	89,125	89,125	11	1.4	—	89,814
Industrial Park	—	—	—	—	—	—	—	—	—	—	—	209,650	209,650	27	3.2	—	211,272
Apartments Mid Rise	—	—	—	—	—	—	—	—	—	—	—	35,519	35,519	4.5	0.54	—	35,794
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	48,541	48,541	6.1	0.74	—	48,916
City Park	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00

Library	—	—	—	—	—	—	—	—	—	—	—	524	524	0.07	0.01	—	528
Condo/Townhouse	—	—	—	—	—	—	—	—	—	—	—	1,053	1,053	0.13	0.02	—	1,061
Total	—	—	—	—	—	—	—	—	—	—	—	384,412	384,412	49	5.9	—	387,385
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Strip Mall	—	—	—	—	—	—	—	—	—	—	—	14,756	14,756	1.9	0.23	—	14,870
Industrial Park	—	—	—	—	—	—	—	—	—	—	—	34,710	34,710	4.4	0.53	—	34,978
Apartments Mid Rise	—	—	—	—	—	—	—	—	—	—	—	5,881	5,881	0.74	0.09	—	5,926
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	8,036	8,036	1.0	0.12	—	8,099
City Park	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Library	—	—	—	—	—	—	—	—	—	—	—	87	87	0.01	< 0.005	—	87
Condo/Townhouse	—	—	—	—	—	—	—	—	—	—	—	174	174	0.02	< 0.005	—	176
Total	—	—	—	—	—	—	—	—	—	—	—	63,644	63,644	8.1	0.98	—	64,136

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	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Strip Mall	1.1	20	17	0.12	1.6	—	1.6	1.6	—	1.6	—	24,369	24,369	2.2	0.05	—	24,437
Industrial Park	6.2	112	94	0.67	8.5	—	8.5	8.5	—	8.5	—	133,755	133,755	12	0.25	—	134,126

Apartme Mid Rise	2.2	38	16	0.24	3.1	—	3.1	3.1	—	3.1	—	48,271	48,271	4.3	0.09	—	48,405
Single Family Housing	5.6	95	41	0.61	7.7	—	7.7	7.7	—	7.7	—	121,053	121,053	11	0.23	—	121,389
City Park	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Library	0.05	0.88	0.74	0.01	0.07	—	0.07	0.07	—	0.07	—	1,049	1,049	0.09	< 0.005	—	1,052
Condo/Townhouse	0.11	1.9	0.83	0.01	0.16	—	0.16	0.16	—	0.16	—	2,472	2,472	0.22	< 0.005	—	2,479
Total	15	269	170	1.7	21	—	21	21	—	21	—	330,971	330,971	29	0.62	—	331,889
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Strip Mall	1.1	20	17	0.12	1.6	—	1.6	1.6	—	1.6	—	24,369	24,369	2.2	0.05	—	24,437
Industrial Park	6.2	112	94	0.67	8.5	—	8.5	8.5	—	8.5	—	133,755	133,755	12	0.25	—	134,126
Apartments Mid Rise	2.2	38	16	0.24	3.1	—	3.1	3.1	—	3.1	—	48,271	48,271	4.3	0.09	—	48,405
Single Family Housing	5.6	95	41	0.61	7.7	—	7.7	7.7	—	7.7	—	121,053	121,053	11	0.23	—	121,389
City Park	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Library	0.05	0.88	0.74	0.01	0.07	—	0.07	0.07	—	0.07	—	1,049	1,049	0.09	< 0.005	—	1,052
Condo/Townhouse	0.11	1.9	0.83	0.01	0.16	—	0.16	0.16	—	0.16	—	2,472	2,472	0.22	< 0.005	—	2,479
Total	15	269	170	1.7	21	—	21	21	—	21	—	330,971	330,971	29	0.62	—	331,889
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Strip Mall	0.21	3.7	3.1	0.02	0.28	—	0.28	0.28	—	0.28	—	4,035	4,035	0.36	0.01	—	4,046
Industrial Park	1.1	20	17	0.12	1.6	—	1.6	1.6	—	1.6	—	22,145	22,145	2.0	0.04	—	22,206

Apartme Mid Rise	0.41	6.9	3.0	0.04	0.56	—	0.56	0.56	—	0.56	—	7,992	7,992	0.71	0.02	—	8,014
Single Family Housing	1.0	17	7.4	0.11	1.4	—	1.4	1.4	—	1.4	—	20,042	20,042	1.8	0.04	—	20,097
City Park	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Library	0.01	0.16	0.13	< 0.005	0.01	—	0.01	0.01	—	0.01	—	174	174	0.02	< 0.005	—	174
Condo/T ownhous e	0.02	0.36	0.15	< 0.005	0.03	—	0.03	0.03	—	0.03	—	409	409	0.04	< 0.005	—	410
Total	2.8	49	31	0.30	3.8	—	3.8	3.8	—	3.8	—	54,796	54,796	4.8	0.10	—	54,948

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	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Hearths	4,276	443	8,357	22	1,175	—	1,175	1,154	—	1,154	153,112	424,797	577,909	459	5.8	—	591,111
Consum er Products	1,269	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architect ural Coatings	126	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Landsca pe Equipme nt	326	23	2,625	0.13	2.9	—	2.9	2.2	—	2.2	—	8,830	8,830	0.37	0.07	—	8,862
Total	5,996	466	10,982	22	1,178	—	1,178	1,156	—	1,156	153,112	433,628	586,739	459	5.9	—	599,973

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Hearths	4,276	443	8,357	22	1,175	—	1,175	1,154	—	1,154	153,112	424,797	577,909	459	5.8	—	591,111
Consumer Products	1,269	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	126	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	5,670	443	8,357	22	1,175	—	1,175	1,154	—	1,154	153,112	424,797	577,909	459	5.8	—	591,111
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Hearths	53	5.5	104	0.27	15	—	15	14	—	14	1,736	4,817	6,553	5.2	0.07	—	6,703
Consumer Products	232	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	23	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	41	2.9	328	0.02	0.36	—	0.36	0.27	—	0.27	—	1,001	1,001	0.04	0.01	—	1,005
Total	349	8.4	433	0.29	15	—	15	15	—	15	1,736	5,818	7,555	5.2	0.07	—	7,708

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	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Strip Mall	—	—	—	—	—	—	—	—	—	—	1,803	4,576	6,378	185	4.5	—	12,344
Industrial Park	—	—	—	—	—	—	—	—	—	—	7,297	18,520	25,816	751	18	—	49,961
Apartments Mid Rise	—	—	—	—	—	—	—	—	—	—	975	2,475	3,450	100	2.4	—	6,677
Single Family Housing	—	—	—	—	—	—	—	—	—	—	709	8,730	9,438	74	1.9	—	11,836
City Park	—	—	—	—	—	—	—	—	—	—	0.00	147	147	0.02	< 0.005	—	148
Library	—	—	—	—	—	—	—	—	—	—	4.6	12	16	0.47	0.01	—	31
Condo/Townhouse	—	—	—	—	—	—	—	—	—	—	23	59	82	2.4	0.06	—	158
Total	—	—	—	—	—	—	—	—	—	—	10,811	34,517	45,328	1,113	27	—	81,156
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Strip Mall	—	—	—	—	—	—	—	—	—	—	1,803	4,576	6,378	185	4.5	—	12,344
Industrial Park	—	—	—	—	—	—	—	—	—	—	7,297	18,520	25,816	751	18	—	49,961
Apartments Mid Rise	—	—	—	—	—	—	—	—	—	—	975	2,475	3,450	100	2.4	—	6,677
Single Family Housing	—	—	—	—	—	—	—	—	—	—	709	8,730	9,438	74	1.9	—	11,836
City Park	—	—	—	—	—	—	—	—	—	—	0.00	147	147	0.02	< 0.005	—	148
Library	—	—	—	—	—	—	—	—	—	—	4.6	12	16	0.47	0.01	—	31
Condo/Townhouse	—	—	—	—	—	—	—	—	—	—	23	59	82	2.4	0.06	—	158
Total	—	—	—	—	—	—	—	—	—	—	10,811	34,517	45,328	1,113	27	—	81,156

Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Strip Mall	—	—	—	—	—	—	—	—	—	—	298	758	1,056	31	0.74	—	2,044
Industrial Park	—	—	—	—	—	—	—	—	—	—	1,208	3,066	4,274	124	3.0	—	8,272
Apartments Mid Rise	—	—	—	—	—	—	—	—	—	—	161	410	571	17	0.40	—	1,105
Single Family Housing	—	—	—	—	—	—	—	—	—	—	117	1,445	1,563	12	0.31	—	1,960
City Park	—	—	—	—	—	—	—	—	—	—	0.00	24	24	< 0.005	< 0.005	—	24
Library	—	—	—	—	—	—	—	—	—	—	0.76	1.9	2.7	0.08	< 0.005	—	5.2
Condo/Townhouse	—	—	—	—	—	—	—	—	—	—	3.8	9.7	14	0.39	0.01	—	26
Total	—	—	—	—	—	—	—	—	—	—	1,790	5,715	7,505	184	4.4	—	13,436

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	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Strip Mall	—	—	—	—	—	—	—	—	—	—	7,187	0.00	7,187	718	0.00	—	25,146
Industrial Park	—	—	—	—	—	—	—	—	—	—	11,004	0.00	11,004	1,100	0.00	—	38,499
Apartments Mid Rise	—	—	—	—	—	—	—	—	—	—	5,169	0.00	5,169	517	0.00	—	18,084

Single Family Housing	—	—	—	—	—	—	—	—	—	—	4,015	0.00	4,015	401	0.00	—	14,046
City Park	—	—	—	—	—	—	—	—	—	—	1.4	0.00	1.4	0.14	0.00	—	5.0
Library	—	—	—	—	—	—	—	—	—	—	38	0.00	38	3.8	0.00	—	133
Condo/Townhouse	—	—	—	—	—	—	—	—	—	—	122	0.00	122	12	0.00	—	428
Total	—	—	—	—	—	—	—	—	—	—	27,536	0.00	27,536	2,752	0.00	—	96,341
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Strip Mall	—	—	—	—	—	—	—	—	—	—	7,187	0.00	7,187	718	0.00	—	25,146
Industrial Park	—	—	—	—	—	—	—	—	—	—	11,004	0.00	11,004	1,100	0.00	—	38,499
Apartments Mid Rise	—	—	—	—	—	—	—	—	—	—	5,169	0.00	5,169	517	0.00	—	18,084
Single Family Housing	—	—	—	—	—	—	—	—	—	—	4,015	0.00	4,015	401	0.00	—	14,046
City Park	—	—	—	—	—	—	—	—	—	—	1.4	0.00	1.4	0.14	0.00	—	5.0
Library	—	—	—	—	—	—	—	—	—	—	38	0.00	38	3.8	0.00	—	133
Condo/Townhouse	—	—	—	—	—	—	—	—	—	—	122	0.00	122	12	0.00	—	428
Total	—	—	—	—	—	—	—	—	—	—	27,536	0.00	27,536	2,752	0.00	—	96,341
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Strip Mall	—	—	—	—	—	—	—	—	—	—	1,190	0.00	1,190	119	0.00	—	4,163
Industrial Park	—	—	—	—	—	—	—	—	—	—	1,822	0.00	1,822	182	0.00	—	6,374

Apartments Mid Rise	—	—	—	—	—	—	—	—	—	—	856	0.00	856	86	0.00	—	2,994
Single Family Housing	—	—	—	—	—	—	—	—	—	—	665	0.00	665	66	0.00	—	2,326
City Park	—	—	—	—	—	—	—	—	—	—	0.24	0.00	0.24	0.02	0.00	—	0.83
Library	—	—	—	—	—	—	—	—	—	—	6.3	0.00	6.3	0.63	0.00	—	22
Condo/Townhouse	—	—	—	—	—	—	—	—	—	—	20	0.00	20	2.0	0.00	—	71
Total	—	—	—	—	—	—	—	—	—	—	4,559	0.00	4,559	456	0.00	—	15,950

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	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Strip Mall	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	79	79
Industrial Park	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	4,286	4,286
Apartments Mid Rise	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	75	75
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	138	138
City Park	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00
Library	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.30	0.30

Condo/T	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	2.4	2.4
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	4,580	4,580
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Strip Mall	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	79	79
Industrial Park	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	4,286	4,286
Apartments Mid Rise	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	75	75
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	138	138
City Park	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00
Library	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.30	0.30
Condo/Townhouse	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	2.4	2.4
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	4,580	4,580
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Strip Mall	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	13	13
Industrial Park	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	710	710
Apartments Mid Rise	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	12	12
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	23	23
City Park	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00
Library	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.05	0.05

Condo/T	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.40	0.40
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	758	758

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	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	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	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. 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	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	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	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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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
Total all Land Uses	504,954	504,954	504,954	184,308,210	2,473,206	2,473,206	2,473,206	902,720,190

5.10. Operational Area Sources

5.10.1. Hearths

Land Use	Hearth Type	Unmitigated (number)	Mitigated (number)
Strip Mall	Wood Fireplaces	0	0
Strip Mall	Gas Fireplaces	0	0
Strip Mall	Propane Fireplaces	0	0
Strip Mall	Electric Fireplaces	0	0
Strip Mall	No Fireplaces	0	0
Strip Mall	Conventional Wood Stoves	0	0
Strip Mall	Catalytic Wood Stoves	0	0
Strip Mall	Non-Catalytic Wood Stoves	0	0
Strip Mall	Pellet Wood Stoves	0	0
Industrial Park	Wood Fireplaces	0	0
Industrial Park	Gas Fireplaces	0	0
Industrial Park	Propane Fireplaces	0	0
Industrial Park	Electric Fireplaces	0	0
Industrial Park	No Fireplaces	0	0
Industrial Park	Conventional Wood Stoves	0	0
Industrial Park	Catalytic Wood Stoves	0	0

Industrial Park	Non-Catalytic Wood Stoves	0	0
Industrial Park	Pellet Wood Stoves	0	0
Apartments Mid Rise	Wood Fireplaces	128	128
Apartments Mid Rise	Gas Fireplaces	2,275	2,275
Apartments Mid Rise	Propane Fireplaces	0	0
Apartments Mid Rise	Electric Fireplaces	0	0
Apartments Mid Rise	No Fireplaces	274	274
Apartments Mid Rise	Conventional Wood Stoves	0	0
Apartments Mid Rise	Catalytic Wood Stoves	128	128
Apartments Mid Rise	Non-Catalytic Wood Stoves	128	128
Apartments Mid Rise	Pellet Wood Stoves	0	0
Single Family Housing	Wood Fireplaces	411	411
Single Family Housing	Gas Fireplaces	8,375	8,375
Single Family Housing	Propane Fireplaces	0	0
Single Family Housing	Electric Fireplaces	0	0
Single Family Housing	No Fireplaces	1,067	1,067
Single Family Housing	Conventional Wood Stoves	0	0
Single Family Housing	Catalytic Wood Stoves	411	411
Single Family Housing	Non-Catalytic Wood Stoves	411	411
Single Family Housing	Pellet Wood Stoves	0	0
Apartments Mid Rise	Wood Fireplaces	263	263
Apartments Mid Rise	Gas Fireplaces	9,251	9,251
Apartments Mid Rise	Propane Fireplaces	0	0
Apartments Mid Rise	Electric Fireplaces	0	0
Apartments Mid Rise	No Fireplaces	1,370	1,370
Apartments Mid Rise	Conventional Wood Stoves	0	0
Apartments Mid Rise	Catalytic Wood Stoves	263	263
Apartments Mid Rise	Non-Catalytic Wood Stoves	263	263

Apartments Mid Rise	Pellet Wood Stoves	0	0
City Park	Wood Fireplaces	0	0
City Park	Gas Fireplaces	0	0
City Park	Propane Fireplaces	0	0
City Park	Electric Fireplaces	0	0
City Park	No Fireplaces	0	0
City Park	Conventional Wood Stoves	0	0
City Park	Catalytic Wood Stoves	0	0
City Park	Non-Catalytic Wood Stoves	0	0
City Park	Pellet Wood Stoves	0	0
Library	Wood Fireplaces	0	0
Library	Gas Fireplaces	0	0
Library	Propane Fireplaces	0	0
Library	Electric Fireplaces	0	0
Library	No Fireplaces	0	0
Library	Conventional Wood Stoves	0	0
Library	Catalytic Wood Stoves	0	0
Library	Non-Catalytic Wood Stoves	0	0
Library	Pellet Wood Stoves	0	0
Condo/Townhouse	Wood Fireplaces	16	16
Condo/Townhouse	Gas Fireplaces	273	273
Condo/Townhouse	Propane Fireplaces	0	0
Condo/Townhouse	Electric Fireplaces	0	0
Condo/Townhouse	No Fireplaces	32	32
Condo/Townhouse	Conventional Wood Stoves	0	0
Condo/Townhouse	Catalytic Wood Stoves	16	16
Condo/Townhouse	Non-Catalytic Wood Stoves	16	16
Condo/Townhouse	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)
undefined	60,754,556	20,251,519	43,864,776	14,621,592	—

5.10.3. Landscape Equipment

Season	Unit	Value
Snow Days	day/yr	0.00
Summer Days	day/yr	250

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)
Strip Mall	124,739,024	261	0.0330	0.0040	76,038,867
Industrial Park	293,427,070	261	0.0330	0.0040	417,352,424
Apartments Mid Rise	9,813,438	261	0.0330	0.0040	29,733,018
Single Family Housing	67,937,865	261	0.0330	0.0040	377,718,166
Apartments Mid Rise	39,898,938	261	0.0330	0.0040	120,886,878
City Park	0.00	261	0.0330	0.0040	0.00
Library	733,863	261	0.0330	0.0040	3,274,434
Condo/Townhouse	1,474,085	261	0.0330	0.0040	7,713,745

5.12. Operational Water and Wastewater Consumption

5.12.1. Unmitigated

Land Use	Indoor Water (gal/year)	Outdoor Water (gal/year)

Strip Mall	940,778,873	0.00
Industrial Park	3,807,739,606	0.00
Apartments Mid Rise	100,456,165	0.00
Single Family Housing	369,740,229	1,828,095,931
Apartments Mid Rise	408,429,175	0.00
City Park	0.00	38,711,164
Library	2,393,664	0.00
Condo/Townhouse	12,045,734	0.00

5.13. Operational Waste Generation

5.13.1. Unmitigated

Land Use	Waste (ton/year)	Cogeneration (kWh/year)
Strip Mall	13,336	0.00
Industrial Park	20,418	0.00
Apartments Mid Rise	1,893	0.00
Single Family Housing	7,449	0.00
Apartments Mid Rise	7,697	0.00
City Park	2.7	0.00
Library	70	0.00
Condo/Townhouse	227	0.00

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
Strip Mall	Other commercial A/C and heat pumps	R-410A	2,088	< 0.005	4.0	4.0	18

Strip Mall	Stand-alone retail refrigerators and freezers	R-134a	1,430	0.04	1.00	0.00	1.00
Strip Mall	Walk-in refrigerators and freezers	R-404A	3,922	< 0.005	7.5	7.5	20
Industrial Park	Other commercial A/C and heat pumps	R-410A	2,088	0.30	4.0	4.0	18
Apartments Mid Rise	Average room A/C & Other residential A/C and heat pumps	R-410A	2,088	< 0.005	2.5	2.5	10.0
Apartments Mid Rise	Household refrigerators and/or freezers	R-134a	1,430	0.12	0.60	0.00	1.00
Single Family Housing	Average room A/C & Other residential A/C and heat pumps	R-410A	2,088	< 0.005	2.5	2.5	10.0
Single Family Housing	Household refrigerators and/or freezers	R-134a	1,430	0.12	0.60	0.00	1.00
Apartments Mid Rise	Average room A/C & Other residential A/C and heat pumps	R-410A	2,088	< 0.005	2.5	2.5	10.0
Apartments Mid Rise	Household refrigerators and/or freezers	R-134a	1,430	0.12	0.60	0.00	1.00
City Park	Other commercial A/C and heat pumps	R-410A	2,088	< 0.005	4.0	4.0	18
City Park	Stand-alone retail refrigerators and freezers	R-134a	1,430	0.04	1.00	0.00	1.00
Library	Household refrigerators and/or freezers	R-134a	1,430	0.02	0.60	0.00	1.00
Library	Other commercial A/C and heat pumps	R-410A	2,088	< 0.005	4.0	4.0	18

Library	Stand-alone retail refrigerators and freezers	R-134a	1,430	< 0.005	1.00	0.00	1.00
Library	Walk-in refrigerators and freezers	R-404A	3,922	< 0.005	7.5	7.5	20
Condo/Townhouse	Average room A/C & Other residential A/C and heat pumps	R-410A	2,088	< 0.005	2.5	2.5	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

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	12	annual days of extreme heat
Extreme Precipitation	5.2	annual days with precipitation above 20 mm
Sea Level Rise	—	meters of inundation depth
Wildfire	0.59	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	1	0	0	N/A
Extreme Precipitation	N/A	N/A	N/A	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	1	1	1	2
Extreme Precipitation	N/A	N/A	N/A	N/A
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	55
AQ-PM	83
AQ-DPM	87
Drinking Water	78
Lead Risk Housing	62
Pesticides	0.00
Toxic Releases	92
Traffic	92
Effect Indicators	—
CleanUp Sites	65
Groundwater	11
Haz Waste Facilities/Generators	95
Impaired Water Bodies	0.00
Solid Waste	81
Sensitive Population	—
Asthma	33
Cardio-vascular	53
Low Birth Weights	29
Socioeconomic Factor Indicators	—

Education	62
Housing	39
Linguistic	47
Poverty	32
Unemployment	66

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	74.90055178
Employed	92.3649429
Median HI	68.29205697
Education	—
Bachelor's or higher	59.54061337
High school enrollment	100
Preschool enrollment	57.19235211
Transportation	—
Auto Access	82.44578468
Active commuting	63.55703837
Social	—
2-parent households	71.91068908
Voting	45.3997177
Neighborhood	—
Alcohol availability	16.30950853
Park access	48.36391634
Retail density	98.38316438
Supermarket access	79.84088284

Tree canopy	24.93263185
Housing	—
Homeownership	33.20929039
Housing habitability	35.94251251
Low-inc homeowner severe housing cost burden	90.99191582
Low-inc renter severe housing cost burden	54.20248941
Uncrowded housing	49.60862312
Health Outcomes	—
Insured adults	60.5800077
Arthritis	0.0
Asthma ER Admissions	68.0
High Blood Pressure	0.0
Cancer (excluding skin)	0.0
Asthma	0.0
Coronary Heart Disease	0.0
Chronic Obstructive Pulmonary Disease	0.0
Diagnosed Diabetes	0.0
Life Expectancy at Birth	72.0
Cognitively Disabled	84.2
Physically Disabled	55.6
Heart Attack ER Admissions	53.4
Mental Health Not Good	0.0
Chronic Kidney Disease	0.0
Obesity	0.0
Pedestrian Injuries	19.6
Physical Health Not Good	0.0
Stroke	0.0
Health Risk Behaviors	—

Binge Drinking	0.0
Current Smoker	0.0
No Leisure Time for Physical Activity	0.0
Climate Change Exposures	—
Wildfire Risk	0.0
SLR Inundation Area	0.0
Children	27.6
Elderly	67.6
English Speaking	54.0
Foreign-born	38.1
Outdoor Workers	64.1
Climate Change Adaptive Capacity	—
Impervious Surface Cover	27.3
Traffic Density	84.0
Traffic Access	87.4
Other Indices	—
Hardship	24.9
Other Decision Support	—
2016 Voting	73.1

7.3. Overall Health & Equity Scores

Metric	Result for Project Census Tract
CalEnviroScreen 4.0 Score for Project Location (a)	67
Healthy Places Index Score for Project Location (b)	74
Project Located in a Designated Disadvantaged Community (Senate Bill 535)	No
Project Located in a Low-Income Community (Assembly Bill 1550)	No
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	Revised population consistent with City estimate
Operations: Hearths	Assume existing wood hearths/stoves remain, but no new wood hearth/stove

BCSP - Construction Detailed Report

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1. Basic Project Information

1.1. Basic Project Information

Data Field	Value
Project Name	BCSP - Construction
Construction Start Date	1/2/2026
Lead Agency	—
Land Use Scale	Plan/community
Analysis Level for Defaults	County
Windspeed (m/s)	1.8
Precipitation (days)	21
Location	33.91526979882481, -117.88668041875385
County	Orange
City	Brea
Air District	South Coast AQMD
Air Basin	South Coast
TAZ	5752
EDFZ	7
Electric Utility	Southern California Edison
Gas Utility	Southern California Gas
App Version	2022.1.1.35

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	133	Dwelling Unit	3.5	127,680	0.00	0.00	396	—
Strip Mall	51	1000sqft	1.2	50,629	0.00	0.00	—	—

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.	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	1.5	11	19	0.03	0.38	1.7	2.0	0.35	0.40	0.75	—	4,561	4,561	0.15	0.17	6.9	4,623
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	71	40	48	0.12	1.6	22	23	1.5	11	12	—	16,651	16,651	0.96	1.6	0.67	17,162
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	4.7	9.5	14	0.02	0.34	1.6	2.0	0.31	0.50	0.81	—	3,539	3,539	0.13	0.15	2.2	3,591
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.85	1.7	2.6	< 0.005	0.06	0.30	0.36	0.06	0.09	0.15	—	586	586	0.02	0.03	0.36	594

2.2. 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	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily - Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2026	1.5	11	19	0.03	0.38	1.7	2.0	0.35	0.40	0.75	—	4,561	4,561	0.15	0.17	6.9	4,623

Daily - Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2026	71	40	48	0.12	1.6	22	23	1.5	11	12	—	16,651	16,651	0.96	1.6	0.67	17,162
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2026	4.7	9.5	14	0.02	0.34	1.6	2.0	0.31	0.50	0.81	—	3,539	3,539	0.13	0.15	2.2	3,591
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2026	0.85	1.7	2.6	< 0.005	0.06	0.30	0.36	0.06	0.09	0.15	—	586	586	0.02	0.03	0.36	594

3. Construction Emissions Details

3.1. Demolition (2026) - Unmitigated

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

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	2.3	21	19	0.03	0.84	—	0.84	0.78	—	0.78	—	3,427	3,427	0.14	0.03	—	3,438
Demolition	—	—	—	—	—	1.3	1.3	—	0.20	0.20	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.13	1.1	1.0	< 0.005	0.05	—	0.05	0.04	—	0.04	—	188	188	0.01	< 0.005	—	188

Demoliti	—	—	—	—	—	0.07	0.07	—	0.01	0.01	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.02	0.21	0.19	< 0.005	0.01	—	0.01	0.01	—	0.01	—	31	31	< 0.005	< 0.005	—	31
Demolition	—	—	—	—	—	0.01	0.01	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.05	0.05	0.68	0.00	0.00	0.20	0.20	0.00	0.05	0.05	—	186	186	< 0.005	0.01	0.02	188
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.01	1.3	0.56	0.01	0.01	0.28	0.29	0.01	0.08	0.09	—	1,056	1,056	0.08	0.17	0.06	1,108
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.04	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	10	10	< 0.005	< 0.005	0.02	10
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	0.07	0.03	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	< 0.005	—	58	58	< 0.005	0.01	0.05	61
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	1.7	1.7	< 0.005	< 0.005	< 0.005	1.7
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	9.6	9.6	< 0.005	< 0.005	0.01	10

3.3. Site Preparation (2026) - Unmitigated

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

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	3.1	29	29	0.05	1.2	—	1.2	1.1	—	1.1	—	5,298	5,298	0.21	0.04	—	5,316
Dust From Material Movement	—	—	—	—	—	20	20	—	10	10	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.04	0.40	0.39	< 0.005	0.02	—	0.02	0.02	—	0.02	—	73	73	< 0.005	< 0.005	—	73
Dust From Material Movement	—	—	—	—	—	0.27	0.27	—	0.14	0.14	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.07	0.07	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	12	12	< 0.005	< 0.005	—	12
Dust From Material Movement	—	—	—	—	—	0.05	0.05	—	0.03	0.03	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.06	0.06	0.80	0.00	0.00	0.23	0.23	0.00	0.05	0.05	—	217	217	< 0.005	0.01	0.02	219
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	3.0	3.0	< 0.005	< 0.005	< 0.005	3.1
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.50	0.50	< 0.005	< 0.005	< 0.005	0.51
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.5. Grading (2026) - Unmitigated

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

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.6	15	17	0.03	0.65	—	0.65	0.59	—	0.59	—	2,960	2,960	0.12	0.02	—	2,970

Dust From Material Movement	—	—	—	—	—	7.1	7.1	—	3.4	3.4	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.04	0.33	0.38	< 0.005	0.01	—	0.01	0.01	—	0.01	—	65	65	< 0.005	< 0.005	—	65
Dust From Material Movement	—	—	—	—	—	0.16	0.16	—	0.08	0.08	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.06	0.07	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	11	11	< 0.005	< 0.005	—	11
Dust From Material Movement	—	—	—	—	—	0.03	0.03	—	0.01	0.01	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.05	0.05	0.68	0.00	0.00	0.20	0.20	0.00	0.05	0.05	—	186	186	< 0.005	0.01	0.02	188
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.13	11	4.8	0.06	0.12	2.4	2.5	0.12	0.67	0.78	—	9,015	9,015	0.68	1.4	0.47	9,457

Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.02	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	4.1	4.1	< 0.005	< 0.005	0.01	4.2
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	0.25	0.10	< 0.005	< 0.005	0.05	0.05	< 0.005	0.01	0.02	—	198	198	0.01	0.03	0.17	207
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.68	0.68	< 0.005	< 0.005	< 0.005	0.69
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	0.05	0.02	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	33	33	< 0.005	0.01	0.03	34

3.7. Building Construction (2026) - Unmitigated

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

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.1	9.9	13	0.02	0.38	—	0.38	0.35	—	0.35	—	2,397	2,397	0.10	0.02	—	2,405
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.1	9.9	13	0.02	0.38	—	0.38	0.35	—	0.35	—	2,397	2,397	0.10	0.02	—	2,405
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.67	6.2	8.2	0.01	0.24	—	0.24	0.22	—	0.22	—	1,511	1,511	0.06	0.01	—	1,516

Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.12	1.1	1.5	< 0.005	0.04	—	0.04	0.04	—	0.04	—	250	250	0.01	< 0.005	—	251
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.38	0.34	5.9	0.00	0.00	1.5	1.5	0.00	0.34	0.34	—	1,458	1,458	0.02	0.05	5.1	1,479
Vendor	0.01	0.72	0.36	0.01	0.01	0.19	0.20	0.01	0.05	0.06	—	706	706	0.04	0.10	1.8	739
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.38	0.39	5.1	0.00	0.00	1.5	1.5	0.00	0.34	0.34	—	1,387	1,387	0.02	0.05	0.13	1,404
Vendor	0.01	0.75	0.37	0.01	0.01	0.19	0.20	0.01	0.05	0.06	—	707	707	0.04	0.10	0.05	737
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.24	0.25	3.3	0.00	0.00	0.91	0.91	0.00	0.21	0.21	—	886	886	0.01	0.03	1.4	898
Vendor	0.01	0.47	0.23	< 0.005	< 0.005	0.12	0.12	< 0.005	0.03	0.04	—	445	445	0.02	0.06	0.50	465
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.04	0.04	0.61	0.00	0.00	0.17	0.17	0.00	0.04	0.04	—	147	147	< 0.005	0.01	0.23	149
Vendor	< 0.005	0.09	0.04	< 0.005	< 0.005	0.02	0.02	< 0.005	0.01	0.01	—	74	74	< 0.005	0.01	0.08	77
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.9. Paving (2026) - Unmitigated

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

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.68	6.2	8.8	0.01	0.26	—	0.26	0.24	—	0.24	—	1,350	1,350	0.05	0.01	—	1,355
Paving	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.03	0.31	0.43	< 0.005	0.01	—	0.01	0.01	—	0.01	—	67	67	< 0.005	< 0.005	—	67
Paving	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.06	0.08	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	11	11	< 0.005	< 0.005	—	11
Paving	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Worker	0.07	0.07	0.91	0.00	0.00	0.26	0.26	0.00	0.06	0.06	—	248	248	< 0.005	0.01	0.02	251
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.05	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	12	12	< 0.005	< 0.005	0.02	13
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	2.1	2.1	< 0.005	< 0.005	< 0.005	2.1
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.11. Architectural Coating (2026) - Unmitigated

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

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.12	0.86	1.1	< 0.005	0.02	—	0.02	0.02	—	0.02	—	134	134	0.01	< 0.005	—	134
Architectural Coatings	70	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road Equipment	0.01	0.04	0.06	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	6.6	6.6	< 0.005	< 0.005	—	6.6
Architectural Coatings	3.5	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	0.01	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	1.1	1.1	< 0.005	< 0.005	—	1.1
Architectural Coatings	0.63	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.08	0.08	1.0	0.00	0.00	0.29	0.29	0.00	0.07	0.07	—	277	277	< 0.005	0.01	0.03	281
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.05	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	14	14	< 0.005	< 0.005	0.02	14
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	2.3	2.3	< 0.005	< 0.005	< 0.005	2.3
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

4. Operations Emissions Details

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	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	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	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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	1/2/2026	1/30/2026	5.0	20	—
Site Preparation	Site Preparation	1/31/2026	2/7/2026	5.0	5.0	—
Grading	Grading	2/8/2026	2/19/2026	5.0	8.0	—
Building Construction	Building Construction	1/2/2026	11/19/2026	5.0	230	—
Paving	Paving	12/1/2026	12/24/2026	5.0	18	—
Architectural Coating	Architectural Coating	12/1/2026	12/24/2026	5.0	18	—

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	2.0	8.0	367	0.40
Demolition	Concrete/Industrial Saws	Diesel	Average	1.00	8.0	33	0.73

Demolition	Excavators	Diesel	Average	3.0	8.0	36	0.38
Site Preparation	Rubber Tired Dozers	Diesel	Average	3.0	8.0	367	0.40
Site Preparation	Tractors/Loaders/Backhoes	Diesel	Average	4.0	8.0	84	0.37
Grading	Graders	Diesel	Average	1.00	8.0	148	0.41
Grading	Excavators	Diesel	Average	1.00	8.0	36	0.38
Grading	Tractors/Loaders/Backhoes	Diesel	Average	3.0	8.0	84	0.37
Grading	Rubber Tired Dozers	Diesel	Average	1.00	8.0	367	0.40
Building Construction	Cranes	Diesel	Average	1.00	7.0	367	0.29
Building Construction	Forklifts	Diesel	Average	3.0	8.0	82	0.20
Building Construction	Generator Sets	Diesel	Average	1.00	8.0	14	0.74
Building Construction	Welders	Diesel	Average	1.00	8.0	46	0.45
Building Construction	Tractors/Loaders/Backhoes	Diesel	Average	3.0	7.0	84	0.37
Paving	Tractors/Loaders/Backhoes	Diesel	Average	1.00	8.0	84	0.37
Paving	Cement and Mortar Mixers	Diesel	Average	2.0	6.0	10.0	0.56
Paving	Pavers	Diesel	Average	1.00	8.0	81	0.42
Paving	Paving Equipment	Diesel	Average	2.0	6.0	89	0.36
Paving	Rollers	Diesel	Average	2.0	6.0	36	0.38
Architectural Coating	Air Compressors	Diesel	Average	1.00	6.0	37	0.48

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	19	LDA,LDT1,LDT2
Demolition	Vendor	—	10	HHDT,MHDT

Demolition	Hauling	15	20	HHDT
Demolition	Onsite truck	—	—	HHDT
Site Preparation	Worker	18	19	LDA,LDT1,LDT2
Site Preparation	Vendor	—	10	HHDT,MHDT
Site Preparation	Hauling	0.00	20	HHDT
Site Preparation	Onsite truck	—	—	HHDT
Grading	Worker	15	19	LDA,LDT1,LDT2
Grading	Vendor	—	10	HHDT,MHDT
Grading	Hauling	132	20	HHDT
Grading	Onsite truck	—	—	HHDT
Building Construction	Worker	112	19	LDA,LDT1,LDT2
Building Construction	Vendor	23	10	HHDT,MHDT
Building Construction	Hauling	0.00	20	HHDT
Building Construction	Onsite truck	—	—	HHDT
Paving	Worker	20	19	LDA,LDT1,LDT2
Paving	Vendor	—	10	HHDT,MHDT
Paving	Hauling	0.00	20	HHDT
Paving	Onsite truck	—	—	HHDT
Architectural Coating	Worker	22	19	LDA,LDT1,LDT2
Architectural Coating	Vendor	—	10	HHDT,MHDT
Architectural Coating	Hauling	0.00	20	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	258,552	86,184	75,944	25,315	—

5.6. Dust Mitigation

5.6.1. Construction Earthmoving Activities

Phase Name	Material Imported (Cubic Yards)	Material Exported (Cubic Yards)	Acres Graded (acres)	Material Demolished (Building Square Footage)	Acres Paved (acres)
Demolition	0.00	0.00	0.00	26,736	0.00
Site Preparation	0.00	0.00	7.5	0.00	0.00
Grading	5,593	2,820	8.0	0.00	0.00
Paving	0.00	0.00	0.00	0.00	0.00

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%
Paving	Strip Mall	0.00	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	0.00	532	0.03	< 0.005

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	12	annual days of extreme heat
Extreme Precipitation	5.2	annual days with precipitation above 20 mm
Sea Level Rise	—	meters of inundation depth
Wildfire	0.59	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	0	0	0	N/A
Extreme Precipitation	N/A	N/A	N/A	N/A
Sea Level Rise	0	0	0	N/A
Wildfire	0	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	1	1	1	2
Extreme Precipitation	N/A	N/A	N/A	N/A
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	55
AQ-PM	83
AQ-DPM	87
Drinking Water	78
Lead Risk Housing	62
Pesticides	0.00
Toxic Releases	92
Traffic	92
Effect Indicators	—
CleanUp Sites	65
Groundwater	11
Haz Waste Facilities/Generators	95
Impaired Water Bodies	0.00
Solid Waste	81

Sensitive Population	—
Asthma	33
Cardio-vascular	53
Low Birth Weights	29
Socioeconomic Factor Indicators	—
Education	62
Housing	39
Linguistic	47
Poverty	32
Unemployment	66

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	74.90055178
Employed	92.3649429
Median HI	68.29205697
Education	—
Bachelor's or higher	59.54061337
High school enrollment	100
Preschool enrollment	57.19235211
Transportation	—
Auto Access	82.44578468
Active commuting	63.55703837
Social	—
2-parent households	71.91068908
Voting	45.3997177

Neighborhood	—
Alcohol availability	16.30950853
Park access	48.36391634
Retail density	98.38316438
Supermarket access	79.84088284
Tree canopy	24.93263185
Housing	—
Homeownership	33.20929039
Housing habitability	35.94251251
Low-inc homeowner severe housing cost burden	90.99191582
Low-inc renter severe housing cost burden	54.20248941
Uncrowded housing	49.60862312
Health Outcomes	—
Insured adults	60.5800077
Arthritis	0.0
Asthma ER Admissions	68.0
High Blood Pressure	0.0
Cancer (excluding skin)	0.0
Asthma	0.0
Coronary Heart Disease	0.0
Chronic Obstructive Pulmonary Disease	0.0
Diagnosed Diabetes	0.0
Life Expectancy at Birth	72.0
Cognitively Disabled	84.2
Physically Disabled	55.6
Heart Attack ER Admissions	53.4
Mental Health Not Good	0.0
Chronic Kidney Disease	0.0

Obesity	0.0
Pedestrian Injuries	19.6
Physical Health Not Good	0.0
Stroke	0.0
Health Risk Behaviors	—
Binge Drinking	0.0
Current Smoker	0.0
No Leisure Time for Physical Activity	0.0
Climate Change Exposures	—
Wildfire Risk	0.0
SLR Inundation Area	0.0
Children	27.6
Elderly	67.6
English Speaking	54.0
Foreign-born	38.1
Outdoor Workers	64.1
Climate Change Adaptive Capacity	—
Impervious Surface Cover	27.3
Traffic Density	84.0
Traffic Access	87.4
Other Indices	—
Hardship	24.9
Other Decision Support	—
2016 Voting	73.1

7.3. Overall Health & Equity Scores

Metric	Result for Project Census Tract
CalEnviroScreen 4.0 Score for Project Location (a)	67

Healthy Places Index Score for Project Location (b)	74
Project Located in a Designated Disadvantaged Community (Senate Bill 535)	No
Project Located in a Low-Income Community (Assembly Bill 1550)	No
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
Construction: Construction Phases	Revised schedule to 2026, kept default number of working days

BCSP - Buildout Detailed Report

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1. Basic Project Information

1.1. Basic Project Information

Data Field	Value
Project Name	BCSP - Buildout
Operational Year	2050
Lead Agency	—
Land Use Scale	Plan/community
Analysis Level for Defaults	County
Windspeed (m/s)	1.80000
Precipitation (days)	21.2000
Location	33.915263122982054, -117.88643108541962
County	Orange
City	Brea
Air District	South Coast AQMD
Air Basin	South Coast
TAZ	5752
EDFZ	7
Electric Utility	Southern California Edison
Gas Utility	Southern California Gas
App Version	2022.1.1.37

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	4,752.00	Dwelling Unit	125.053	4,561,920	0.00000	0.00000	13,542.0	—
Strip Mall	6,379.59	1000sqft	146.455	6,379,588	0.00000	0.00000	—	—

1.3. User-Selected Emission Reduction Measures by Emissions Sector

No measures selected

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.	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	919.712	209.914	2,717.10	6.04510	108.752	436.566	545.318	106.673	110.738	217.411	19,941.3	556,539	576,480	736.407	20.3116	115.322	601,059
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	851.633	214.494	2,104.61	5.87186	108.140	436.566	544.705	106.210	110.738	216.948	19,941.3	540,013	559,955	737.075	21.0420	73.5190	584,726
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	548.971	146.285	1,813.20	3.93815	10.7863	430.622	441.408	10.4698	109.252	119.722	7,577.48	466,006	473,583	699.095	20.4836	90.9368	497,256
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	100.187	26.6971	330.909	0.71871	1.96850	78.5885	80.5570	1.91074	19.9385	21.8493	1,254.54	77,152.6	78,407.1	115.743	3.39129	15.0556	82,326.4

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	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	218.278	105.081	1,413.76	3.73173	1.31949	436.566	437.885	1.23156	110.738	111.970	—	380,093	380,093	15.6999	15.6829	42.9157	385,202

Area	700.090	81.2474	1,289.05	2.16675	105.575	—	105.575	103.584	—	103.584	13,272.9	86,910.7	100,184	40.7730	0.60918	—	101,384
Energy	1.34396	23.5851	14.2882	0.14661	1.85711	—	1.85711	1.85711	—	1.85711	—	86,369.4	86,369.4	9.82005	0.93245	—	86,892.7
Water	—	—	—	—	—	—	—	—	—	—	1,247.23	3,165.69	4,412.92	128.290	3.08716	—	8,540.13
Waste	—	—	—	—	—	—	—	—	—	—	5,421.15	0.00000	5,421.15	541.824	0.00000	—	18,966.8
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	72.4060	72.4060
Total	919.712	209.914	2,717.10	6.04510	108.752	436.566	545.318	106.673	110.738	217.411	19,941.3	556,539	576,480	736.407	20.3116	115.322	601,059
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	219.223	114.485	1,349.69	3.58674	1.32053	436.566	437.886	1.23256	110.738	111.971	—	365,429	365,429	16.4466	16.4290	1.11297	370,737
Area	631.066	76.4239	740.628	2.13851	104.962	—	104.962	103.121	—	103.121	13,272.9	85,048.9	98,321.9	40.6950	0.59341	—	99,516.1
Energy	1.34396	23.5851	14.2882	0.14661	1.85711	—	1.85711	1.85711	—	1.85711	—	86,369.4	86,369.4	9.82005	0.93245	—	86,892.7
Water	—	—	—	—	—	—	—	—	—	—	1,247.23	3,165.69	4,412.92	128.290	3.08716	—	8,540.13
Waste	—	—	—	—	—	—	—	—	—	—	5,421.15	0.00000	5,421.15	541.824	0.00000	—	18,966.8
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	72.4060	72.4060
Total	851.633	214.494	2,104.61	5.87186	108.140	436.566	544.705	106.210	110.738	216.948	19,941.3	540,013	559,955	737.075	21.0420	73.5190	584,726
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	216.631	114.162	1,372.55	3.62572	1.31993	430.622	431.942	1.23198	109.252	110.484	—	369,370	369,370	16.3201	16.4125	18.5308	374,688
Area	330.995	8.53833	426.361	0.16582	7.60927	—	7.60927	7.38074	—	7.38074	909.104	7,100.46	8,009.57	2.84075	0.05145	—	8,095.92
Energy	1.34396	23.5851	14.2882	0.14661	1.85711	—	1.85711	1.85711	—	1.85711	—	86,369.4	86,369.4	9.82005	0.93245	—	86,892.7
Water	—	—	—	—	—	—	—	—	—	—	1,247.23	3,165.69	4,412.92	128.290	3.08716	—	8,540.13
Waste	—	—	—	—	—	—	—	—	—	—	5,421.15	0.00000	5,421.15	541.824	0.00000	—	18,966.8
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	72.4060	72.4060
Total	548.971	146.285	1,813.20	3.93815	10.7863	430.622	441.408	10.4698	109.252	119.722	7,577.48	466,006	473,583	699.095	20.4836	90.9368	497,256
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	39.5352	20.8345	250.491	0.66169	0.24089	78.5885	78.8294	0.22484	19.9385	20.1634	—	61,153.5	61,153.5	2.70198	2.71728	3.06798	62,033.8
Area	60.4066	1.55825	77.8109	0.03026	1.38869	—	1.38869	1.34698	—	1.34698	150.513	1,175.56	1,326.08	0.47032	0.00852	—	1,340.37
Energy	0.24527	4.30427	2.60760	0.02676	0.33892	—	0.33892	0.33892	—	0.33892	—	14,299.4	14,299.4	1.62582	0.15438	—	14,386.1

Water	—	—	—	—	—	—	—	—	—	—	206.493	524.116	730.609	21.2398	0.51111	—	1,413.92
Waste	—	—	—	—	—	—	—	—	—	—	897.533	0.00000	897.533	89.7052	0.00000	—	3,140.16
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	11.9876	11.9876
Total	100.187	26.6971	330.909	0.71871	1.96850	78.5885	80.5570	1.91074	19.9385	21.8493	1,254.54	77,152.6	78,407.1	115.743	3.39129	15.0556	82,326.4

4. Operations Emissions Details

4.1. Mobile Emissions by Land Use

4.1.1. Unmitigated

Mobile source emissions results are presented in Sections 2.6. No further detailed breakdown of emissions is available.

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	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	—	—	—	—	—	—	—	—	—	—	—	12,446.4	12,446.4	1.57496	0.19090	—	12,542.7
Strip Mall	—	—	—	—	—	—	—	—	—	—	—	44,767.1	44,767.1	5.66481	0.68664	—	45,113.4
Total	—	—	—	—	—	—	—	—	—	—	—	57,213.6	57,213.6	7.23978	0.87755	—	57,656.1
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Apartments Mid Rise	—	—	—	—	—	—	—	—	—	—	—	12,446.4	12,446.4	1.57496	0.19090	—	12,542.7

Strip Mall	—	—	—	—	—	—	—	—	—	—	—	44,767.1	44,767.1	5.66481	0.68664	—	45,113.4
Total	—	—	—	—	—	—	—	—	—	—	—	57,213.6	57,213.6	7.23978	0.87755	—	57,656.1
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Apartments Mid Rise	—	—	—	—	—	—	—	—	—	—	—	2,060.65	2,060.65	0.26075	0.03161	—	2,076.58
Strip Mall	—	—	—	—	—	—	—	—	—	—	—	7,411.71	7,411.71	0.93787	0.11368	—	7,469.04
Total	—	—	—	—	—	—	—	—	—	—	—	9,472.36	9,472.36	1.19863	0.14529	—	9,545.62

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	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	0.77972	13.3261	5.67067	0.08506	1.07743	—	1.07743	1.07743	—	1.07743	—	16,915.1	16,915.1	1.49698	0.03185	—	16,962.0
Strip Mall	0.56424	10.2590	8.61756	0.06155	0.77968	—	0.77968	0.77968	—	0.77968	—	12,240.7	12,240.7	1.08330	0.02305	—	12,274.6
Total	1.34396	23.5851	14.2882	0.14661	1.85711	—	1.85711	1.85711	—	1.85711	—	29,155.8	29,155.8	2.58028	0.05490	—	29,236.7
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Apartments Mid Rise	0.77972	13.3261	5.67067	0.08506	1.07743	—	1.07743	1.07743	—	1.07743	—	16,915.1	16,915.1	1.49698	0.03185	—	16,962.0
Strip Mall	0.56424	10.2590	8.61756	0.06155	0.77968	—	0.77968	0.77968	—	0.77968	—	12,240.7	12,240.7	1.08330	0.02305	—	12,274.6
Total	1.34396	23.5851	14.2882	0.14661	1.85711	—	1.85711	1.85711	—	1.85711	—	29,155.8	29,155.8	2.58028	0.05490	—	29,236.7
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Apartment Mid Rise	0.14230	2.43201	1.03490	0.01552	0.19663	—	0.19663	0.19663	—	0.19663	—	2,800.49	2,800.49	0.24784	0.00527	—	2,808.26
Strip Mall	0.10297	1.87227	1.57270	0.01123	0.14229	—	0.14229	0.14229	—	0.14229	—	2,026.59	2,026.59	0.17935	0.00382	—	2,032.21
Total	0.24527	4.30427	2.60760	0.02676	0.33892	—	0.33892	0.33892	—	0.33892	—	4,827.08	4,827.08	0.42719	0.00909	—	4,840.47

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	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Hearths	372.887	76.4239	740.628	2.13851	104.962	—	104.962	103.121	—	103.121	13,272.9	85,048.9	98,321.9	40.6950	0.59341	—	99,516.1
Consumer Products	234.148	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	24.0299	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	69.0243	4.82358	548.424	0.02824	0.61334	—	0.61334	0.46381	—	0.46381	—	1,861.79	1,861.79	0.07799	0.01577	—	1,868.44
Total	700.090	81.2474	1,289.05	2.16675	105.575	—	105.575	103.584	—	103.584	13,272.9	86,910.7	100,184	40.7730	0.60918	—	101,384
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Hearths	372.887	76.4239	740.628	2.13851	104.962	—	104.962	103.121	—	103.121	13,272.9	85,048.9	98,321.9	40.6950	0.59341	—	99,516.1
Consumer Products	234.148	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Architectural	24.0299	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	631.066	76.4239	740.628	2.13851	104.962	—	104.962	103.121	—	103.121	13,272.9	85,048.9	98,321.9	40.6950	0.59341	—	99,516.1
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Hearths	4.66109	0.95530	9.25785	0.02673	1.31202	—	1.31202	1.28901	—	1.28901	150.513	964.440	1,114.95	0.46147	0.00673	—	1,128.49
Consumer Products	42.7321	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	4.38545	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	8.62804	0.60295	68.5531	0.00353	0.07667	—	0.07667	0.05798	—	0.05798	—	211.123	211.123	0.00884	0.00179	—	211.877
Total	60.4066	1.55825	77.8109	0.03026	1.38869	—	1.38869	1.34698	—	1.34698	150.513	1,175.56	1,326.08	0.47032	0.00852	—	1,340.37

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	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	—	—	—	—	—	—	—	—	—	—	341.707	867.313	1,209.02	35.1479	0.84580	—	2,339.76
Strip Mall	—	—	—	—	—	—	—	—	—	—	905.521	2,298.38	3,203.90	93.1417	2.24136	—	6,200.36
Total	—	—	—	—	—	—	—	—	—	—	1,247.23	3,165.69	4,412.92	128.290	3.08716	—	8,540.13

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Apartments Mid Rise	—	—	—	—	—	—	—	—	—	—	341.707	867.313	1,209.02	35.1479	0.84580	—	2,339.76
Strip Mall	—	—	—	—	—	—	—	—	—	—	905.521	2,298.38	3,203.90	93.1417	2.24136	—	6,200.36
Total	—	—	—	—	—	—	—	—	—	—	1,247.23	3,165.69	4,412.92	128.290	3.08716	—	8,540.13
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Apartments Mid Rise	—	—	—	—	—	—	—	—	—	—	56.5735	143.594	200.167	5.81913	0.14003	—	387.375
Strip Mall	—	—	—	—	—	—	—	—	—	—	149.919	380.522	530.442	15.4207	0.37108	—	1,026.54
Total	—	—	—	—	—	—	—	—	—	—	206.493	524.116	730.609	21.2398	0.51111	—	1,413.92

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	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	—	—	—	—	—	—	—	—	—	—	1,811.03	0.00000	1,811.03	181.006	0.00000	—	6,336.18
Strip Mall	—	—	—	—	—	—	—	—	—	—	3,610.12	0.00000	3,610.12	360.818	0.00000	—	12,630.6
Total	—	—	—	—	—	—	—	—	—	—	5,421.15	0.00000	5,421.15	541.824	0.00000	—	18,966.8

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Apartments Mid Rise	—	—	—	—	—	—	—	—	—	—	1,811.03	0.00000	1,811.03	181.006	0.00000	—	6,336.18
Strip Mall	—	—	—	—	—	—	—	—	—	—	3,610.12	0.00000	3,610.12	360.818	0.00000	—	12,630.6
Total	—	—	—	—	—	—	—	—	—	—	5,421.15	0.00000	5,421.15	541.824	0.00000	—	18,966.8
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Apartments Mid Rise	—	—	—	—	—	—	—	—	—	—	299.837	0.00000	299.837	29.9676	0.00000	—	1,049.03
Strip Mall	—	—	—	—	—	—	—	—	—	—	597.696	0.00000	597.696	59.7376	0.00000	—	2,091.14
Total	—	—	—	—	—	—	—	—	—	—	897.533	0.00000	897.533	89.7052	0.00000	—	3,140.16

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	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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	32.6725	32.6725
Strip Mall	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	39.7335	39.7335
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	72.4060	72.4060

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Apartments Mid Rise	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	32.6725	32.6725
Strip Mall	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	39.7335	39.7335
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	72.4060	72.4060
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Apartments Mid Rise	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	5.40930	5.40930
Strip Mall	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	6.57834	6.57834
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	11.9876	11.9876

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	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	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	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. 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	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	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	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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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
Total all Land Uses	126,156	126,156	126,156	46,046,940	617,899	617,899	617,899	225,533,135

5.10. Operational Area Sources

5.10.1. Hearths

Land Use	Hearth Type	Unmitigated (number)	Mitigated (number)
Apartments Mid Rise	Wood Fireplaces	71	71
Apartments Mid Rise	Gas Fireplaces	4,039	4,039
Apartments Mid Rise	Propane Fireplaces	0	0
Apartments Mid Rise	Electric Fireplaces	0	0
Apartments Mid Rise	No Fireplaces	642	642
Apartments Mid Rise	Conventional Wood Stoves	0	0
Apartments Mid Rise	Catalytic Wood Stoves	71	71

Apartments Mid Rise	Non-Catalytic Wood Stoves	71	71
Apartments Mid Rise	Pellet Wood Stoves	0	0
Strip Mall	Wood Fireplaces	0	0
Strip Mall	Gas Fireplaces	0	0
Strip Mall	Propane Fireplaces	0	0
Strip Mall	Electric Fireplaces	0	0
Strip Mall	No Fireplaces	0	0
Strip Mall	Conventional Wood Stoves	0	0
Strip Mall	Catalytic Wood Stoves	0	0
Strip Mall	Non-Catalytic Wood Stoves	0	0
Strip Mall	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)
9,237,888	3,079,296	9,569,382	3,189,794	—

5.10.3. Landscape Equipment

Season	Unit	Value
Snow Days	day/yr	0.00000
Summer Days	day/yr	250.000

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	17,420,044	260.788	0.0330	0.0040	52,779,717

Strip Mall	62,656,271	260.788	0.0330	0.0040	38,194,237

5.12. Operational Water and Wastewater Consumption

5.12.1. Unmitigated

Land Use	Indoor Water (gal/year)	Outdoor Water (gal/year)
Apartments Mid Rise	178,321,889	0.00000
Strip Mall	472,552,169	0.00000

5.13. Operational Waste Generation

5.13.1. Unmitigated

Land Use	Waste (ton/year)	Cogeneration (kWh/year)
Apartments Mid Rise	3,360.36	0.00000
Strip Mall	6,698.57	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
Apartments Mid Rise	Household refrigerators and/or freezers	R-134a	1,430.00	0.11538	0.60000	0.00000	1.000000
Strip Mall	Other commercial A/C and heat pumps	R-410A	2,088.00	0.00180	4.00000	4.00000	18.0000
Strip Mall	Stand-alone retail refrigerators and freezers	R-134a	1,430.00	0.03750	1.000000	0.00000	1.000000

Strip Mall	Walk-in refrigerators and freezers	R-404A	3,922.00	0.00040	7.50000	7.50000	20.0000

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	12.3100	annual days of extreme heat
Extreme Precipitation	5.15000	annual days with precipitation above 20 mm
Sea Level Rise	—	meters of inundation depth
Wildfire	0.59000	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	0	0	0	N/A
Extreme Precipitation	N/A	N/A	N/A	N/A
Sea Level Rise	0	0	0	N/A
Wildfire	0	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	1	1	1	2
Extreme Precipitation	N/A	N/A	N/A	N/A
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	55.3827

AQ-PM	82.9869
AQ-DPM	86.7704
Drinking Water	78.3315
Lead Risk Housing	61.6887
Pesticides	0.00000
Toxic Releases	92.3981
Traffic	92.4000
Effect Indicators	—
CleanUp Sites	64.8750
Groundwater	10.6425
Haz Waste Facilities/Generators	94.7981
Impaired Water Bodies	0.00000
Solid Waste	81.1913
Sensitive Population	—
Asthma	33.0010
Cardio-vascular	52.6171
Low Birth Weights	28.9582
Socioeconomic Factor Indicators	—
Education	61.6553
Housing	38.7833
Linguistic	47.0835
Poverty	32.0477
Unemployment	65.6299

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	74.90055178
Employed	92.3649429
Median HI	68.29205697
Education	—
Bachelor's or higher	59.54061337
High school enrollment	100
Preschool enrollment	57.19235211
Transportation	—
Auto Access	82.44578468
Active commuting	63.55703837
Social	—
2-parent households	71.91068908
Voting	45.3997177
Neighborhood	—
Alcohol availability	16.30950853
Park access	48.36391634
Retail density	98.38316438
Supermarket access	79.84088284
Tree canopy	24.93263185
Housing	—
Homeownership	33.20929039
Housing habitability	35.94251251
Low-inc homeowner severe housing cost burden	90.99191582
Low-inc renter severe housing cost burden	54.20248941
Uncrowded housing	49.60862312
Health Outcomes	—
Insured adults	60.5800077
Arthritis	0.0

Asthma ER Admissions	68.0
High Blood Pressure	0.0
Cancer (excluding skin)	0.0
Asthma	0.0
Coronary Heart Disease	0.0
Chronic Obstructive Pulmonary Disease	0.0
Diagnosed Diabetes	0.0
Life Expectancy at Birth	72.0
Cognitively Disabled	84.2
Physically Disabled	55.6
Heart Attack ER Admissions	53.4
Mental Health Not Good	0.0
Chronic Kidney Disease	0.0
Obesity	0.0
Pedestrian Injuries	19.6
Physical Health Not Good	0.0
Stroke	0.0
Health Risk Behaviors	—
Binge Drinking	0.0
Current Smoker	0.0
No Leisure Time for Physical Activity	0.0
Climate Change Exposures	—
Wildfire Risk	0.0
SLR Inundation Area	0.0
Children	27.6
Elderly	67.6
English Speaking	54.0
Foreign-born	38.1

Outdoor Workers	64.1
Climate Change Adaptive Capacity	—
Impervious Surface Cover	27.3
Traffic Density	84.0
Traffic Access	87.4
Other Indices	—
Hardship	24.9
Other Decision Support	—
2016 Voting	73.1

7.3. Overall Health & Equity Scores

Metric	Result for Project Census Tract
CalEnviroScreen 4.0 Score for Project Location (a)	67.0000
Healthy Places Index Score for Project Location (b)	74.0000
Project Located in a Designated Disadvantaged Community (Senate Bill 535)	No
Project Located in a Low-Income Community (Assembly Bill 1550)	No
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	Revised population based on City estimate
Operations: Hearths	Assume no new wood hearths/stove per SCAQMD Rule 445

8.3. Land Use

Model Parameter	Units	Default Value	New Value
Landscape Area	sq. ft	—	0.00000
Special Landscape Area	sq. ft	—	0.00000
Population	people	14,161.0	13,542.0

8.5. Operations

8.5.2. Area Sources

8.5.2.1. Hearths

Land Use	Model Parameter	Default Value	New Value
Apartments Mid Rise	Wood Fireplaces	238	71
Apartments Mid Rise	No Fireplaces	475	642
Apartments Mid Rise	Catalytic Wood Stoves	238	71
Apartments Mid Rise	Non-Catalytic Wood Stoves	238	71

Appendix D2. Energy Data

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Focused GPU

Construction	Construction Activity	Source	CalEEMod CO2e (MT)	Fuel Type	Factor (kg CO2/gallon)	Gallons
Project Construction	Demolition	Offroad Equipment	78	Diesel	10.21	7,640
		Hauling	1,772	Diesel	10.21	173,555
		Vendor	0	Diesel	10.21	-
		Worker	4.3	Motor Gasoline	8.78	490
	Site Preparation	Offroad Equipment	72	Diesel	10.21	7,052
		Hauling	0	Diesel	10.21	-
		Vendor	0	Diesel	10.21	-
		Worker	3	Motor Gasoline	8.78	342
	Grading	Offroad Equipment	225	Diesel	10.21	22,037
		Hauling	263	Diesel	10.21	25,759
		Vendor	0	Diesel	10.21	-
		Worker	8.7	Motor Gasoline	8.78	991
	Paving	Offroad Equipment	38	Diesel	10.21	3,722
		Vendor	0	Diesel	10.21	-
		Hauling	0	Diesel	10.21	-
		Worker	4.8	Motor Gasoline	8.78	547
	Building Construction	Offroad Equipment	284	Diesel	10.21	27,816
		Hauling	0	Diesel	10.21	-
		Vendor	349	Diesel	10.21	34,182
		Worker	481	Motor Gasoline	8.78	54,784
	Architectural Coating	Offroad Equipment	3.3	Diesel	10.21	323
		Hauling	0	Diesel	10.21	-
		Vendor	0	Diesel	10.21	-
		Worker	20	Motor Gasoline	8.78	2,278

Total Project Construction Fuel Use

	CO2e Emissions	Gallons
Diesel	3,084	302,086
Motor Gasoline	522	59,431

Source for conversion factor: U.S. Environmental Protection Agency. "Emissions Factors for Greenhouse Gas Inventories". Last Modified January 15, 2025.
1 MT = 1,000 kg

Brea Core Specific Plan

Construction	Construction Activity	Source	CalEEMod CO2e (MT)	Fuel Type	Factor (kg CO2/gallon)	Gallons
Project Construction	Demolition	Offroad Equipment	31	Diesel	10.21	3,036
		Hauling	10	Diesel	10.21	979
		Vendor	0	Diesel	10.21	-
		Worker	1.7	Motor Gasoline	8.78	194
	Site Preparation	Offroad Equipment	12	Diesel	10.21	1,175
		Hauling	0	Diesel	10.21	-
		Vendor	0	Diesel	10.21	-
		Worker	1	Motor Gasoline	8.78	114
	Grading	Offroad Equipment	11	Diesel	10.21	1,077
		Hauling	34	Diesel	10.21	3,330
		Vendor	0	Diesel	10.21	-
		Worker	1	Motor Gasoline	8.78	114
	Paving	Offroad Equipment	11	Diesel	10.21	1,077
		Vendor	0	Diesel	10.21	-
		Hauling	0	Diesel	10.21	-
		Worker	2	Motor Gasoline	8.78	228
	Building Construction	Offroad Equipment	251	Diesel	10.21	24,584
		Hauling	0	Diesel	10.21	-
		Vendor	77	Diesel	10.21	7,542
		Worker	149	Motor Gasoline	8.78	16,970
	Architectural Coating	Offroad Equipment	1	Diesel	10.21	98
		Hauling	0	Diesel	10.21	-
		Vendor	0	Diesel	10.21	-
		Worker	2	Motor Gasoline	8.78	228

Total Project Construction Fuel Use

	CO2e Emissions	Gallons
Diesel	438	42,899
Motor Gasoline	157	17,847

Source for conversion factor: U.S. Environmental Protection Agency. "Emissions Factors for Greenhouse Gas Inventories". Last Modified January 15, 2025.
1 MT = 1,000 kg

CO2e Vehicle Emissions from GHG Reduction Strategy

Source for conversion factor: U.S. Environmental Protection Agency. "Emissions Factors for Greenhouse Gas Inventories". Last Modified Janurary 15, 2025.

Focused GPU

Scenario	GHG Emissions CO2e (MT/year)	Fuel Type	Factor (kg CO2/gallon)	Gallons
Existing (2025)	265,749	Motor Gasoline	8.78	30,267,540
Buildout (2050)	248,297	Motor Gasoline	8.78	28,279,841
			Net Change	(1,987,699)

BCSP

Scenario	GHG Emissions CO2e (MT/year)	Fuel Type	Factor (kg CO2/gallon)	Gallons
Existing (2025)	50,421	Motor Gasoline	8.78	5,742,711
Buildout (2050)	62,034	Motor Gasoline	8.78	7,065,376
			Net Change	1,322,665

Appendix E. Biological Resources Technical Report

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Biological Resources Technical Report

Brea 2050: Focused General Plan Update and Brea Core Specific Plan Project

February 2026

Prepared for:

City of Brea
Community Development Department, Planning Division
1 Civic Center Circle,
Brea, California, 92821.

Prepared by:

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Appendix A. Figures

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Acronyms and Abbreviations

amsl	above mean sea level
BMP	best management practice
BCSP	Brea Core Specific Plan
BIOS	Biogregraphic Information Observation System
CCE	California candidate endangered species
CDFW	California Department of Fish and Wildlife
CE	California endangered
CEQA	California Environmental Quality Act
CFGC	California Fish and Game Code
City	City of Brea
CRPR	California Rare Plant Rank
CT	California threatened
CWA	Clean Water Act
FE	federally endangered
FT	federally threatened
GIS	geographic information system
IPaC	Information for Planning and Consultation
MBTA	Migratory Bird Treaty Act
MCV	Manual of California Vegetation
NCCP	Natural Community Conservation Planning
NPDES	National Pollutant Discharge Elimination System
PEIR	Program Environmental Impact Report
Porter-Cologne Act	Porter-Cologne Water Quality Control Act
Project	Brea 2050: Focused General Plan Update and Brea Core Specific Plan Project
RWQCB	Regional Water Quality Control Board
SR-	State Route
SSC	species of special concern
USACE	U.S. Army Corps of Engineers
USFWS	U.S. Fish and Wildlife Service
WL	California Department of Fish and Wildlife watch list

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Executive Summary

At the request of the City of Brea (City), Harris & Associates has prepared this Biological Resources Technical Report for the Brea 2050: Focused General Plan Update and Brea Core Specific Plan Project (Project) Program Environmental Impact Report (PEIR).

The Project aims to update the 2003 Brea General Plan, specifically the Community Development (land use, circulation, economic development), Community Resources (open space), Community Services (recreation, education, cultural arts), and Public Safety chapters. At the time of its preparation, the 2003 Brea General Plan was based on forecasting and projections with a horizon year of 2020. Therefore, it is no longer a visioning document for the community and requires an update. The Focused GPU would allow for additional housing units and non-residential square footage across various land use categories within the incorporated City limits and would continue to allow for limited housing units in the unincorporated sphere of influence, consistent with the 2003 Brea General Plan.

This report presents the documented biological resources known to occur in the project area; identifies potential impacts to sensitive biological resources; documents potential jurisdictional aquatic resources; and recommends avoidance, minimization, or mitigation measures consistent with federal, state, and local rules and regulations.

The biological resources impacts analysis was prepared in accordance with the California Environmental Quality Act (CEQA) of 1970 and the CEQA Guidelines (as amended). This report is a technical study in support of the PEIR.

The biological resources documented as present or with potential to occur in the project area were identified through a review of existing maps, literature and other biological studies conducted in the area, and sensitive species occurrence databases. No biological survey, field reconnaissance, aquatic resources delineation, or focused species surveys were conducted as a part of this project. The results of this review provide information on the potential constraints to Project development due to the presence of sensitive biological resources.

Eight vegetation communities and three land cover types are documented within the Project area. The vegetation communities include fresh water, freshwater emergent wetland, non-vegetated channel, cismontane woodland, riparian forest/scrub, annual grassland, chaparral, and coastal scrub, all of which are considered sensitive. The three land cover types include agriculture, disturbed, and urban/developed land, none of which are considered sensitive.

A total of ten sensitive plant species and 20 sensitive wildlife species have been documented in the Project area. Critical habitat for one sensitive wildlife species occurs in the Project area.

Project implementation would result in potentially significant direct and indirect impacts to sensitive plant and wildlife species (including nesting birds and raptors, sensitive roosting bats, and critical habitat), sensitive vegetation communities, jurisdictional aquatic resources, and wildlife corridors and habitat linkages. Impacts resulting from conflicts with local policies, ordinances, or regional conservation plans protecting biological resources would be less than significant.

Implementation of Mitigation Measures BIO-1 through BIO-4 would reduce direct and indirect Project impacts to the sensitive plant species with potential to occur and their critical habitat to below a level of significance.

Implementation of Mitigation Measures BIO-3 through BIO-7 would reduce direct and indirect Project impacts to the sensitive wildlife species with potential to occur and their critical habitat to below a level of significance. Further, direct and indirect impacts to sensitive nesting birds and raptors and sensitive roosting bats would be mitigated to below a level of significance with implementation of Mitigation Measures BIO- 3 through BIO-7.

Implementation of Mitigation Measures BIO-3 and BIO-5 would reduce direct and indirect impacts to sensitive vegetation communities to below a level of significance.

Implementation of Mitigation Measures BIO-3 through BIO-5, BIO-8, and BIO-9 would reduce direct and indirect impacts to potentially jurisdictional aquatic resources to below a level of significance.

Implementation of Mitigation Measures BIO-3 through BIO-6 would reduce direct and indirect impacts to wildlife movement corridors and habitat linkages to below a level of significance.

No Habitat Conservation Plan or NCCP Plan has been adopted in or adjacent to the Project area. Therefore, no impacts to local conservation plans would occur from the implementation of the Project.

Implementation of the Project would not result in cumulative impacts to biological resources because impacts would be reduced to below a level of significance with implementation of Mitigation Measures BIO-1 through BIO-9.

Section 1 Introduction

This Biological Resources Technical Report (BRTR) for the proposed Brea 2050: Focused General Plan Update (Brea 2050 or Focused GPU) and Brea Core Specific Plan (BCSP) Project (Project) Program Environmental Impact Report (PEIR) documents the biological resources in the City of Brea and its Sphere of Influence (SOI) and addresses at a programmatic level the potential biological resources impacts associated with the construction and operation of the Project for the City of Brea. Note that the City of Brea, as a governmental entity, is referred to as the "City," while the geographical area of the incorporated City of Brea is referred to as the "city."

1.1 Project Description

The purpose of the Focused GPU is to create a policy framework that outlines the City's long-term physical form and development while preserving and enhancing the quality of life for the City's residents. The Focused GPU seeks to adapt the 2003 Brea General Plan, specifically the Community Development (land use, circulation, economic development), Community Resources (open space), Community Services (recreation, education, cultural arts), and Public Safety chapters, with an emphasis on the land use and circulation components. At the time of its preparation, the 2003 Brea General Plan was based on forecasting and projections with a horizon year of 2020. As such, it is no longer a visioning document for the community and requires an update. The Focused GPU would allow for additional housing units and non-residential square footage across various land use categories within the incorporated City limits and would continue to allow for limited housing units in the unincorporated sphere of influence, consistent with the 2003 Brea General Plan.

The Project also includes a new specific plan, Brea Core Specific Plan (BCSP), which would implement the values identified in the 2017 Brea Envisions and the goals, policies, and recommendations of the 2020 Core Active Transportation Plan. The BCSP would establish land uses, provide mobility recommendations and streetscape improvements, propose infrastructure upgrades to support proposed development, and outline implementation strategies for the BCSP area. The BCSP would also allow for the development of 4,752 residential units and 6,379,588 square feet of non-residential uses within the BCSP area.

1.1.1 Project Location

The Project area includes the incorporated City of Brea and its Sphere of Influence (SOI), collectively referred to as the Project area, and is located within northeastern Orange County, California. The city is bordered by unincorporated Orange County land and the Los Angeles County line to the north; Chino Hills State Park and the San Bernardino County line to the east; the Cities of Yorba Linda, Placentia, and Fullerton to the south; and the City of La Habra to the west (Appendix A, Figures; Figure 1, Regional Location and Figure 2, Project Area). The Project

area encompasses approximately 22.6 square miles and is composed of diverse natural habitats and residential communities.

The Project area also includes the BCSP area, located in the southwestern portion of the City. The BCSP is generally bounded by Lambert Road to the north, Imperial Highway (SR-90) to the south, Berry Street to the west, and SR-57 and Associated Road to the east.

1.2 Purpose

At the request of the City, Harris & Associates has prepared this Biological Resources Technical Report for the Project. The purpose of this Biological Resources Technical Report is to present documented biological resources known to occur in the Project area; identify potential impacts to sensitive biological resources; document potential jurisdictional aquatic resources; and recommend avoidance, minimization, or mitigation measures consistent with federal, state, and local rules and regulations.

1.3 Environmental Setting

The following is a description of the existing conditions in the Project area.

1.3.1 Land Use

The Project area is largely developed, and contains various residential, commercial, and industrial development. Various parks/recreation spaces are scattered throughout the Project area, and large areas of open space occur in the hills to the east of Valencia Avenue (SR-142). Other uses include cemetery, public facilities, and mixed use.

1.3.2 Topography and Soils

The City of Brea is bounded to the north and east by the lower Transverse Ranges, near the boundary of eastern Los Angeles County. The northern and eastern portions of the City generally contain gently to moderately steep slopes and ridges, and the unincorporated Sphere of Influence area contains primarily steep slopes and ridges. To the south and west, within the City, the topography is generally flat, forming part of the Coastal Plain of Orange County (Figure 3, USGS Topographic Map). Elevation in the City ranges from approximately 350 to 1,200 feet above mean sea level (amsl), while the elevation in the sphere of influence ranges from approximately 450 to 1,325 feet amsl. The Project area lies within several quadrangles of the California Geological Survey Map, including Prado Dam, La Habra, and Yorba Linda Quadrangles.

A total of 40 soil types are present in the Project area, including Alo clay, Alo variant clay, Anaheim clay loam, Anaheim loam, Apollo warm-Calleguas complex, Balcom clay loam, Blasingame-rock outcrop complex, Bosanko clay, Calleguas clay loam, Capistrano sandy loam, Cieneba sandy loam – eroded, Cieneba-Friant sandy loams complex, Cieneba-rock outcrop complex, Cropley clay, dam, Fontana clay loam, Gaviota-Chumash-rock outcrop complex, Marina

loamy sand, Metz loamy sand, Mocho loam, Myford sandy loam, Myford sandy loam - eroded, Myford sandy loam – thick surface, Nacimiento clay loam, Omni clay, Rincon clay loam, riverwash, rock outcrop-Cieneba complex, San Emigdio fine sandy loam, Soper cobbly loam, Soper gravelly loam, Soper loam, Soper-rock outcrop complex, Sorrento clay loam, Sorrento loam, water, Xeralfic arents – loamy, Xerorthents loamy - cut and fill areas, Yorba cobbly sandy loam, and Zaca-Apollo - warm complex (Figure 4, Soils; USDA 2025a; USDA 2025b).

1.3.3 Hydrology

The Project area occurs within two watersheds, Coyote Creek watershed and the Santa Ana River watershed (H_2OC Stormwater Program 2025). Together, these watersheds cover approximately 252 acres of land, and occur in Orange, San Bernardino, and Los Angeles counties. Both watersheds capture flows which drain west into the Pacific Ocean. The primary waterways in these watersheds include the Coyote Creek, Brea Creek, Fullerton Creek, Santiago Creek, and the Santa Ana River. Irvine lake, a reservoir located in Silverado, California, is present in the Santa Ana River Watershed.

Figure 5, Hydrology, identifies the major hydrologic features documented in the vicinity of the Project area (USFWS 2025a; USGS 2025). Of the major hydrologic features documented in the region, the Santa Ana River is defined as traditional navigable waters by the U.S. Army Corps of Engineers (USACE) and is located immediately south and southwest of the Project area (USACE 2025). Many of the other rivers and streams, as well as numerous creeks and drainages, are tributary to these traditional navigable waters or have direct connections to the Pacific Ocean.

1.3.4 Climate

On a regional level, the Project area has a Mediterranean climate, which is characterized by wet winters and warm, dry summers Habitats in this region include both mesic (moist) habitats and xeric (dry) habitats. Generalized climate in the region is characterized by warm, dry summers and cold, moist winters, which pushes the growing season to the wet months of the year (late winter to early spring). Vegetation often goes dormant (senescent) during the later summer months until initial rains start in the late fall. The rainy season in the Project area typically lasts from November through April and has an annual winter precipitation average of approximately 14 inches (Western Regional Climate Center 2025).

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Section 2 Methods

Biological resources documented as present or with potential to occur in the Project area were identified through a review of existing maps, literature and other biological studies conducted in the area, and sensitive species occurrence databases. No biological survey, field reconnaissance, aquatic resources delineation, or focused species surveys were conducted as a part of this Project. The results of this review provide information on the potential constraints to Project development due to the presence of sensitive biological resources. The potential presence of critical habitat in the Project area was also analyzed.

2.1 Literature Review

The following documents and databases were reviewed

- Calflora Database (Calflora 2025)
- Consortium of California Herbaria database (CCH 2025)
- The CNPS Rare Plant Program Inventory of Rare Plants (CNPS 2025)
- California Natural Diversity Database (CDFW 2025a)
- CDFW Biogeographic Information and Observation System (CDFW 2025b)
- U.S. Department of Agriculture Soil Survey (USDA 2019)
- USFWS Information for Planning and Consultation (IPaC) (USFWS 2025b)
- USFWS NWI Wetlands Mapper (USFWS 2025a)
- USGS National Hydrography Dataset (NHD) (USGS 2025)

2.2 Vegetation Mapping

Vegetation community boundaries for the Project area were obtained in geographic information system (GIS) format from the California Department of Fish and Wildlife (CDFW) Biogeographic Information and Observation System (BIOS) (CDFW 2025b). Approximately 21 acres of land was not mapped in the BIOS database and was extrapolated based on aerial imagery.

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Section 3 Results

The results presented in this section provide data from the literature and database review conducted for the Project area. For the purposes of this Biological Resources Technical Report, sensitive biological resources are those defined as follows: (1) species designated as endangered, threatened, rare, protected, sensitive, or species of special concern according to the U.S. Fish and Wildlife Service (USFWS), California Department of Fish and Wildlife (CDFW), California Native Plant Society (CNPS), or applicable regional plans, policies, or regulations needs due to limited distribution, limited numbers, or significant population declines associated with natural or human-made causes; (2) species and habitat types recognized by local and regional resource agencies as special status; (3) habitats or vegetation communities that are unique, are of relatively limited distribution, or are of particular value to wildlife; or are identified as sensitive in regional or local plans, policies, or regulations, or by the USFWS or CDFW (4) wildlife corridors and habitat linkages; or (5) biological resources that may or may not be considered special status but are regulated under local, state, or federal laws.

3.1 Vegetation Communities and Land Cover Types

Vegetation community types are categorized into general overarching habitat categories under which the Manual of California Vegetation (MCV) alliances (Sawyer et. al. 2009) are described. Alliances listed in the Project area are based on the U.S. National Vegetation Classification System (USNVC) data reported by BIOS. The Project area consists of eight habitats and three land cover types, including fresh water, freshwater emergent wetland, non-vegetated channel, cismontane woodland, riparian forest/scrub, annual grassland, chaparral, coastal scrub, agricultural land, disturbed land, and urban/developed land (Table 1). The eight vegetation communities documented in the Project area include MCV alliances with vegetation associations that are considered sensitive by CDFW (2025c). Other vegetation communities may be considered sensitive because impacts to these habitats are often regulated by the USFWS, CDFW, USACE, or Regional Water Quality Control Board (RWQCB). The three land cover types, agricultural land, disturbed land, and urban/developed land, are not considered sensitive.

The following sections describe the documented vegetation communities and land cover types in the Project area. These are summarized in Table 1, Vegetation Communities and Land Cover Types in the Planning Area and illustrated in Figure 6, Vegetation and Land Cover Types.

Table 1. Vegetation Communities and Land Cover Types in the Project Area

Vegetation Community and Land Cover Type	Acres
Wetlands and Waters	
Fresh Water[1]	14.40
Freshwater Emergent Wetland[1]	35.81
Non-Vegetated Channel[1]	25.01

Table 1. Vegetation Communities and Land Cover Types in the Project Area

Vegetation Community and Land Cover Type	Acres
Riparian Forest/Scrub[1]	604.04
Upland Habitats	
Cismontane Woodland[1]	886.77
Grassland	
Annual Grassland[1]	2,042.30
Chaparral and Scrub	
Chaparral[1]	789.74
Coastal Scrub [1]	1,728.22
Developed	
Agricultural Land	106.68
Disturbed Land	2,705.03
Urban/Developed Land	5,578.52

Sources: CDFW 2025b.

Notes:

[1] Associated with MCV alliances that contain sensitive vegetation associations.

3.1.1 Vegetation Communities

3.1.1.1 Wetlands and Waters

Fresh Water

Fresh water, which is typically an unvegetated habitat, includes year-round bodies of fresh water in the form of lakes, streams, ponds, or rivers. This includes those portions of water bodies that are usually covered by water and contain less than 10 percent vegetated cover. BIOS did not report any specific MCV alliances associated with fresh water.

Approximately 14.40 acres of fresh water occur within the Project area (Figure 6). Fresh water may fall under the regulatory jurisdiction of the USACE, USFWS, RWQCB, or CDFW.

Freshwater Emergent Wetland

Freshwater emergent wetlands are generally persistent wetlands dominated by low-growing, perennial wetland species and can be found in channels, seeps, and springs; floodplains; margins of lakes and rivers; and various basins such as pools and ponds, palustrine lakes, montane meadows, and dune swales. BIOS did not report any specific MCV alliances associated with freshwater emergent wetland.

Approximately 35.81 acres of freshwater emergent wetland occurs along documented aquuatic resources within the Project area (Figure 6). Freshwater emergent wetland has the potential to fall under the regulatory jurisdiction of the USACE, USFWS, RWQCB, or CDFW.

Non-Vegetated Channel

Non-vegetated channel consists of predominantly sandy, gravelly, or rocky channels lacking or with reduced vegetation. Variable water lines inhibit the growth of vegetation, although some weedy species of grasses may grow along the outer edges of the channel. Vegetation may exist here but is usually less than 10 percent of the total cover. BIOS did not report any specific MCV alliances associated with non-vegetated channel.

Approximately 25.01 acres of non-vegetated channel occur in the Project area. Non-vegetated channel can be found along numerous streams and drainages that occur throughout the Project area (Figure 6), and has the potential to fall under the regulatory jurisdiction of the USACE, USFWS, RWQCB, or CDFW.

Riparian Forest/Scrub

Riparian forest and scrub communities documented in the Project area are associated with the MCV *Sambucus nigra (*black elderberry*)* alliance, *Baccharis salicifolia* (mulefat) alliance, *Salix lasiolepis* (arroyo willow) alliance, *Salix gooddingii* (Goodding's willow) alliance, and *Platanus racemosa* (Western sycamore) alliance. All of these alliances include MCV vegetation associations that are considered sensitive (CDFW 2025c). *Baccharis salicifolia* alliances are shrub communities dominated or co-dominated by mulefat. They contain two canopy tiers, with heights of 2 meters and 5 meters, and sparse understories. *Salix lasiolepis* alliances are riparian shrub communities dominated or co-dominated by arroyo willow. They grow up to 10 meters in height, and canopies are open to continuous. Understories are variable. *Salix gooddingii* alliances are woodlands dominated or co-dominated by Goodding's willow. Canopy heights reach up to 30 meters, and are open to continuous. Shrub layers are sparse to continuous, and understories are variable. *Platanus racemosa* alliances are riparian woodlands dominated or co-dominated by western sycamore. Canopies are open to intermittent and reach heights up to 35 meters. The shrub layer is open to intermittent, and understories are sparse or grassy.

Approximately 604.04acres of riparian forest/scrub occurs in the Project area, primarily in the eastern portion (Figure 6). The riparian forest/scrub in the Project area may fall under the regulatory jurisdiction of the CDFW.

3.1.1.2 Upland Habitats

Cismontane Woodland

Cismontane woodland documented in the Project area is associated with the MCV *Juglans californica* (California black walnut) alliance and the *Quercus agrifolia* (coast live oak) alliance, both of which contain MCV vegetation associations that are considered sensitive (CDFW 2025c). *Juglans californica* alliances are woodlands dominated or co-dominated by California black walnut, with canopy heights up 15 meters tall, open to continuous canopies, sparse to intermittent shrub layers, and a sparse or

grassy understory. *Quercus agrifolia* alliances are upland woodlands dominated or co-dominated by coast live oak. These woodlands grow up to 30 meters tall, with open to continuous canopies, sparse to intermittent shrub layers, and sparse or grassy understories.

Approximately 886.77 acres of cismontane woodland occurs in the Project area, primarily in the northern and eastern portions (Figure 6).

Annual Grassland

Generally, annual grasslands are dominated by annual grasses and forbs. Grass species may be native or non-native, but are generally dominated by oat (*Avena* sp.), red brome (*Bromus rubens*), ripgut brome (*Bromus diandrus*), barley (*Hordeum* sp.) and mustard (*Brassica* sp.). BIOS did not report any specific MCV alliances associated with annual grassland documented in the Project area.

Approximately 2,042.30 acres of annual grassland occurs in the Project area, primarily along moderate to steeply sloped hillsides in the northern and eastern portions of the Project area (Figure 6).

Chaparral

Chaparral documented in the Project area is associated with the MCV *Quercus berberidifolia* (Scrub oak) alliance and *Heteromeles arbutifolia* (Toyon) alliance, both of which include MCV vegetation associations that are considered sensitive (CDFW 2025c). *Quercus berberidifolia* alliances are shrub communities dominated or co-dominated by scrub oak. They grow to heights of 6 meters, and have continuous canopies. The understories are sparse. *Heteromeles arbutifolia* alliances are shrub communities dominated or co-dominated by toyon, and grow to heights of up to 15 meters. The canopies are open to continuous, and understories are sparse to continuous. Approximately 789.74 acres of chaparral occurs in the Project area, primarily along steep hillsides in the northern and eastern portions of the Project area (Figure 6).

Coastal Scrub

Coastal scrub documented in the Project area is associated with the MCV *Opuntia littoralis (*Coast prickly pear) alliance, *Artemisia californica* (California sagebrush) alliance, *Malosma laurina* (laurel sumac) alliance, *Eriogonum fasciculatum (*California buckwheat) alliance, *Atriplex lentiformis* (big saltbush) alliance, *Salvia mellifera (*black sage) alliance, *Artemisia californica* - *Salvia mellifera* alliance, and *Artemisia californica* - *Eriogonum fasciculatum* alliance. All alliances, except the *Salvia mellifera* alliance, include MCV vegetation associations that are considered sensitive, (CDFW 2025c). *Opuntia littoralis* alliances are shrub communities dominated or co-dominated by coast prickly pear. Canopies are intermittent or continuous and occur in two tiers, with heights up to two meters. The understories are continuous and diverse. *Artemisia californica* alliances are shrub communities co-dominated by California sagebrush. *Artemisia californica* alliances may contain one or two tiers, reaching 2 meters to 5 meters tall.

Canopies are intermittent to continuous, and understories are variable both seasonally and annually. *Malosma laurina* alliances are shrub communities dominated or co-dominated by laurel sumac. They grow up to five meters tall, and have open to continuous canopies. Understories are sparse or grassy. *Eriogonum fasciculatum* alliances are shrub communities dominated or co-dominated by California buckwheat. Shrubs reach up to two meters, and canopies are continuous or intermittent. Understories are variable and may be grassy. *Atriplex lentiformis* alliances are shrub communities dominated by big saltbush. They consist of open to intermittent canopies reaching heights of up to 5 meters. The understories are variable. *Salvia mellifera* alliances are shrub communities dominated or co-dominated by black sage. *Salvia mellifera* alliances may contain one or two tiers, reaching up to 2 meters tall. Canopies are intermittent to continuous, and understories are variable; grasses and herbs are seasonal. *Artemisia californica* - *Salvia mellifera* alliances are shrub communities co-dominated by California sagebrush and black sage with a relatively open canopy. The understories are well-developed. *Artemisia californica* - *Eriogonum fasciculatum* alliances are shrub communities co-dominated by California sagebrush and California buckwheat. The canopy may be one or two-tiered, with heights of two to five meters, and ranging from intermittent to continuous in coverage. Understories are well-developed.

Approximately 1,728.22 acres of coastal scrub occurs in the Project area, primarily along steep hillsides in the northern and eastern portions of the Project area (Figure 6).

3.1.2 Land Cover Types

Agricultural Land

Agricultural land is not considered a vegetation community, therefore BIOS did not report any MCV alliances associated with agricultural land Agricultural land includes areas occupied by dairies and livestock feed yards or areas that have been tilled for use as croplands or groves and orchards.

Approximately 106.68 acres of agricultural land occurs primarily in the central and southern portions of the Project area (Figure 6). The agricultural land in the Project area is primarily composed of vineyards, fruit orchards, and grain crops.

Disturbed Land

Disturbed land is not considered a vegetation community, therefore BIOS did not report any MCV alliances associated with disturbed land Disturbed land consists of previously disturbed areas that either are devoid of vegetation (dirt roads/trails) or support scattered non-native plant species, such as ornamentals or ruderal exotic species, that take advantage of disturbance, such as black mustard (*Brassica nigra*), short-pod mustard (*Hirschfeldia incana*), and *Erodium* species. These species are non-native and typically found in disturbed habitats, particularly in areas that have been graded,

repeatedly cleared for fuel management purposes, and/or experienced repeated use that prevents natural revegetation.

Approximately 2,705.03 acres of disturbed land occurs in the Project area. Disturbed land primarily consists of barren hillsides located in the eastern portion of the Project area (Figure 6).

Urban/Developed Land

Urban/developed land is not considered a vegetation community, therefore BIOS did not report any MCV alliances associated with urban/developed land. (Holland 1986). Urban/developed land represents areas that have been constructed on or otherwise physically altered to an extent that native vegetation communities are not supported. This land cover type generally consists of semi-permanent structures, homes, parking lots, pavement or hardscape, and landscaped areas that require maintenance and irrigation (e.g., ornamental greenbelts). Typically, this land cover type is unvegetated or supports a variety of ornamental plants and landscaping.

Urban/developed land occupies the greatest amount of the Project area, encompassing approximately 5,578.52 acres of the Project area. The urban/developed land mainly occurs within the City itself, in the western portion of the Project area (Figure 6).

3.2 Jurisdictional Wetlands and Waters

The Project area supports wetlands and waters potentially subject to the regulatory jurisdiction of the USACE pursuant to Section 404 of the CWA, RWQCB pursuant to Section 401 of the CWA or the Porter-Cologne Water Quality Control Act (Porter-Cologne Act), and the CDFW pursuant to Section 1600 et seq. of the California Fish and Game Code (CFGC). Aquatic and riparian vegetation communities occurring in the Project area may fall under the regulatory jurisdiction of the USACE, RWQCB, or CDFW.

As described in Section 1.3.3, Hydrology, numerous major and minor aquatic features occur across the two watersheds in which the Project area is located (Figure 5). This includes features that are defined by the USACE as traditional navigable waters, are tributaries, or have direct connections to the Pacific Ocean. Most of the rivers, streams, and creeks that occur in the Project area are documented aquatic resources under the jurisdiction of the USACE, RWQCB, and CDFW, pursuant to Sections 404 and 401 of the CWA and Section 1602 of the CFGC, respectively. The wetlands, waters, and riparian vegetation communities documented in the Project area and described in Section 3.1, Vegetation Communities and Land Cover Types, including fresh water, freshwater emergent wetland, non-vegetated channel, and riparian forest/scrub, may also be under federal and state jurisdiction. In addition, wetland waters and non-wetland waters, including non-vegetated stream channels, erosional features, gullies, and concrete-lined channels, that occur in the Project area may fall under the regulatory jurisdiction of the USACE, RWQCB, or CDFW. However, only these agencies can make a final determination of jurisdictional boundaries.

3.3 Sensitive Plant and Wildlife Species

Sensitive species are those recognized by federal, state, or local agencies as being potentially vulnerable to impacts because of rarity, local or regional reductions in population numbers, isolation/restricted genetic flow, or other factors. Sensitive plant species include those listed as threatened or endangered, proposed for listing, or candidates for listing by the USFWS and CDFW; those considered sensitive by the CDFW; or those species included in the California Rare Plant Rank (CRPR) inventory, maintained by the CNPS. Sensitive wildlife species include those listed as threatened or endangered, proposed for listing, candidates for listing by the USFWS and CDFW; those considered sensitive by the CDFW; or the CDFW Watch List (WL).

Based on the database search results, which included a 1-mile buffer in addition to the Project area for the California Natural Diversity Database, a two quadrangle search (La Habra and Yorba Linda) for the CNPS inventory and the IPaC query, ten sensitive plant species and 20 sensitive wildlife species have been documented in and have the potential to occur in the Project area (Figure 7, Historical Species with Potential to Occur). These species are listed in Table 2, Sensitive Plant Species Documented in the Project Area, and Table 3, Sensitive Wildlife Species Documented in the Project Area (Calflora 2025; CDFW 2025a; CDFW 2025b; CNPS 2025; USFWS 2025b).

3.3.1 Sensitive Plant Species

A total of ten sensitive plant species (Table 2) have been documented within a 1-mile buffer of the Project area and are discussed in more detail in the following sections.

Table 2. Sensitive Plant Species Documented in the Project Area

Scientific Name	Common Name	Federal/State/CRPR
Astragalus brauntonii	Braunton's milk-vetch	FE/None/1B.1
Berberis nevinii	Nevin's barberry	FE/CE/1B.1
Calochortus weedii var. intermedius	Intermediate mariposa-lily	None/None/1B.2
Dudleya multicaulis	Many-stemmed dudleya	None/None/1B.2
Eriastrum densifolium ssp. *sanctorum*	Santa Ana River woollystar	FE/CE/1B.1
Juglans californica	Southern California black walnut	None/None/4.2
Lepidium virginicum var. *robinsonii*	Robinson's pepper-grass	None/None/4.3
Nasturtium gambelii	Gambel's water cress	FE/CT/1B.1
Phacelia hubbyi	Hubby's phacelia	None/None/4.2
Romneya coulteri	Coulter's matilija poppy	None/None/4.2

Sources: Calflora 2025; CDFW 2025a, 2025b; CNPS 2025; USFWS 2025b.

Notes: CE = California endangered; CRPR = California Rare Plant Rank; CT = California threatened; FE = federally endangered; CRPR: 1B = rare, threatened, or endangered in California and elsewhere; .1 = seriously threatened in California (over 80 percent of occurrences threatened/high degree and immediacy of threat); .2 = moderately threatened in California (20–80 percent occurrences threatened/moderate degree and immediacy of threat)

Braunton's Milk-vetch *(Astragalus brauntonii)*

- **Status:** Federally endangered, CRPR 1B.1

- **Distribution:** As of 2023, 60 known occurrences are present in Southern California, primarily within Los Angeles, Orange, and Ventura Counties.
- **Habitat:** Coastal scrub and valley and foothill grassland, in recent burns or disturbed areas, usually sandstone with carbonate layers at elevations between 15 and 2100 feet amsl (CNPS 2025).
- **Suitable Habitat in Project Area:** Coastal scrub and annual grassland.
- **Occurrence in Project Area:** Documented in the eastern portion of the Project area (Figure 7).
- **Years Documented:** 2013

Nevin's Barberry-vetch *(Berberis nevinii)*

- **Status:** Federally endangered, State Endangered, CRPR 1B.1
- **Distribution:** Southern California, primarily within Los Angeles, San Bernardino, Riverside, and Ventura Counties.
- **Habitat:** Chaparral, coastal scrub, cismontane woodland, and riparian scrub at elevations between 230 and 2705 feet amsl (CNPS 2025).
- **Suitable Habitat in Project Area:** Chaparral, coastal scrub, cismontane woodland, and riparian scrub.
- **Occurrence in Project Area:** Documented in the western portion of the Project area.
- **Years Documented:** Unknown

Intermediate Mariposa-lily (*Calochortus weedii* var*. intermedius*)

- **Status:** CRPR 1B.2
- **Distribution:** Southern California, primarily in the South Coast and Peninsular Range regions.
- **Habitat:** Coastal scrub, valley and foothill grassland with rocky, calcareous soils at elevations between 345 and 2,805 feet amsl (CNPS 2025).
- **Suitable Habitat in Project Area:** Coastal scrub and annual grassland with calcareous soil.
- **Occurrence in Project Area:** Documented in the southeastern and northeastern portions of the Project area (Figure 7).
- **Years Documented:** 1937, 1998, 2000, 2005, 2008, 2010, 2011, 2017, 2019
-

Many-stemmed Dudleya (*Dudleya multicaulis*)

- **Status:** CRPR 1B.2
- **Distribution:** Southern California, primarily in Orange County.
- **Habitat:** Chaparral, coastal scrub, valley and foothill grassland, often in clay soils, at elevations between 50 and 2,590 feet amsl (CNPS 2025).

- **Suitable Habitat in Project Area:** Chaparral, coastal scrub, and annual grassland with clayey soils.
- **Occurrence in Project Area:** Documented in the northwestern portion of the Project area (Calflora 2025).
- **Years Documented:** 2020.

Santa Ana River Woollystar (*Eriastrum densifolium* ssp. *sanctorum*)

- **Status:** Federally endangered, California endangered, CRPR 1B.1
- **Distribution:** Santa Ana River drainage in southern California.
- **Habitat:** Chaparral, coastal scrub in gravelly or sandy soils at elevations between 300 and 2,00 feet amsl (CNPS 2025).
- **Suitable Habitat in Project Area:** Chaparral and coastal scrub with sandy soil.
- **Occurrence in Project Area:** Documented in the northern portion of the Project area (CNPS 2025).
- **Years Documented:** 1980

Southern California Black Walnut (*Juglans californica*)

- **Status:** CRPR 4.2
- **Distribution:** Central valley and the coast range valleys from northern to southern California.
- **Habitat:** Chaparral, cismontane woodland, coastal scrub, riparian woodland, in alluvial soils, at alevations between 165 and 2,955 feet amsl (CNPS 2025).
- **Suitable Habitat in Project Area:** Chaparral, coastal scrub, annual grassland, cismontane woodland with alluvial soils.
- **Occurrence in Project Area:** Documented in the northern, northeastern, and eastern portions of the Project area (Calflora 2025).
- **Year Documented:** 2014, 2019, 2020, 2021, 2022.

Robinson's Pepper-grass (*Lepidium virginicum var. robinsonii*)

- **Status:** CRPR 4.3
- **Distribution:** Southwestern California, between Santa Barbara and San Diego counties.
- **Habitat:** Chaparral, coastal scrub at elevations between 5 and 2,905 feet amsl (CNPS 2025).
- **Suitable Habitat in Project Area:** Chaparral and coastal scrub.
- **Occurrence in Project Area:** Documented in the northern portion of the Project area (Figure 7).
- **Years Documented:** 2010

Gambel's Water Cress (*Nasturtium gambelii*)

- **Status:** Federally endangered, California threatened, CRPR 1B.1
- **Distribution:** Very few scattered occurrences in southern California.
- **Habitat:** Brackish and freshwater marshes and swamps at elevations between 15 and 1,085 feet amsl (CNPS 2025).
- **Suitable Habitat in Project Area:** Freshwater
- **Occurrence in Project Area:** Documented in the southern portion of the Project area (CNPS 2025).
- **Years Documented:** 1980 (possibly extirpated).

Hubby's Phacelia (*Phacelia hubbyi*)

- **Status:** CRPR 4.2
- **Distribution:** Southern coastal California, primarily in Santa Barbara, Ventura, Los Angeles, and Orange Counties.
  Habitat: Chaparral, coastal scrub, valley and foothill grassland in gravelly, rocky, and talus soils at elevations between 0 and 3,280 feet amsl (CNPS 2025).
- **Suitable Habitat in Project Area:** Chaparral, coastal scrub, and annual grassland with rocky and talus soils.
- **Occurrence in Project Area:** Documented in the eastern portion of the Project area (Calflora 2025).
- **Years Documented:** 2023, 2025.

Coulter's Matilija Poppy (*Romneya coulteri*)

- **Status:** CRPR 4.2
- **Distribution:** Coastal and inland southern and central California, [primarily in Orange and San Bernardino Counties.
- **Habitat:** Chaparral, coastal scrub, often in burned areas, at elevations between 65 and 3,935 feet amsl (CNPS 2025).
- **Suitable Habitat in Project Area:** Chaparral and coastal scrub.
- **Occurrence in Project Area:** Documented in the eastern portion of the Project area (Calflora 2025).
- **Years Documented:** 2020.

3.3.2 Sensitive Wildlife Species

A total of 20 sensitive wildlife species (two invertebrate, five reptiles, 11 birds, and two mammals) have been documented in the Project area (Table 3), and are discussed in more detail in the following sections.

Table 3. Sensitive Wildlife Species Documented in the Project Area

Species		Status
Scientific Name	**Common Name**	**Federal/State**
Invertebrates		
Bombus crotchii	Crotch's bumble bee	None/CCE
Danaus plexippus	Monarch butterfly	FPT/None
Reptiles		
Actinemys pallida	Southwestern pond turtle	FPT/SSC
Crotalus ruber	Red-diamond rattlesnake	None/SSC
Phrynosoma blainvillii	Blainville's (coast) horned lizard	None/SSC
Salvadora hexalepis virgultea	Coast patch-nosed snake	None/SSC
Spea hammondii	Western spadefoot toad	FPT/SSC
Birds		
Aimophila ruficeps canescens	Southern California rufous-crowned sparrow	None/WL
Ammodramus savannarum	Grasshopper sparrow	None/SSC
Aquila chrysaetos	Golden Eagle	BGEPA/CFP, WL
Athene cunicularia	Western burrowing owl	None/CCE, SSC
Campylorhynchus brunneicapillus sandiegensis	Coastal cactus wren	BCC/SSC
Empidonax traillii extimus	Southwestern willow flycatcher	FE/SE
Eremophila alpestris actia	California horned lark	None/WL
Icteria virens	Yellow-breasted chat	None/SSC
Polioptila californica californica	Coastal California gnatcatcher	FT/SSC
Setophaga petechia	Yellow warbler	None/SSC
Vireo bellii pusillus	Least Bell's vireo	FE/CE
Mammals		
Eumops perotis californicus	Western mastiff bat	None/SSC
Nyctinomops femorosaccus	Pocketed free-tailed bat	None/SSC

Sources: CDFW 2025a, 2025b; USFWS 2025b.

Notes: BGEPA = federal bald and golden eagle protection act; CCE = California candidate endangered; CE = California endangered; CFP= California fully protected; FE = federally endangered; FT= federally threatened; FPT = federally proposed threatened; BCC = federal bird of conservation concern; SSC = CDFW species of special concern; WL = CDFW watch list.

Invertebrates

Crotch's Bumble Bee (*Bombus crotchii*)

- **Status:** California candidate endangered species
- **Distribution:** Southwestern California.
- **Habitat:** Occurs in open grasslands, shrublands, chaparral, desert margins, creosote scrub, and semi-urban areas. Forages on species with open flowers and short corollas due to their short tongue, most commonly Fabaceae, Apocynaceae, Asteraceae,

Lamiaceae, Hydrophyllacae, Asclepiadaceae, and Boraginaceae species. While little is known about hibernacula of this species, it is likely that it overwinters in soft, disturbed soil and nests underground (Xerces Society 2018).

- **Suitable Habitat in Project Area:** Cismontane woodland, coastal scrub, chaparral, agricultural land, and urban/developed land with underground cavities, flowering nectar and pollen plants, and open areas with loose soils for overwintering.
- **Occurrence in Project Area:** Documented in the southeastern portion of the Project area (Figure 7).
- **Years Documented:** 1968, 2024.

Monarch Butterfly (*Danaus plexippus*)

- **Status:** Federally proposed threatened, CDFW SSC
- **Distribution:** North America.
- **Habitat:** Occurs in a variety of habitats where patches of milkweed (*Asclepias* sp.), the monarch caterpillar host plant, are present. Overwinters in groves of eucalyptus, cypress, and pine along the California coast and high-elevation forests in Mexico.
- **Suitable Habitat in Project Area:** Cismontane woodland, coastal scrub, chaparral, annual grassland, agricultural land, and urban/developed land with flowering nectar plants, and eucalyptus, cypress, or pine groves for overwintering.
- **Occurrence in Project Area:** Unknown.
- **Years Documented:** Unknown.

Reptiles

Southwestern Pond Turtle (*Actinemys pallida*)

- **Status:** Federally proposed threatened, CDFW SSC
- **Distribution:** Restricted to the central Coast Range south from the middle of Monterey Bay to the species' southern range boundary in Baja California.
- **Habitat:** Occurs in slow-moving permanent or intermittent streams, ponds, lakes, permanent and ephemeral wetlands, and reservoirs with emergent basking sites. This species spends most of its life in water, but also requires terrestrial habitats for nesting and during winter (USFWS 2025c; USFWS 2025d).
- **Suitable Habitat in Project Area:** Fresh water streams and ponds with surrounding uplands for nesting.
- **Occurrence in Project Area:** Documented in the central and eastern portions of the Project area (Figure 7).
- **Year Documented:** 1996, 2010, 2011, 2013.

Red-diamond Rattlesnake (*Crotalus ruber)*

- **Status:** CDFW SSC
- **Distribution:** Southern California's coastal and inland foothills south through most of the Baja California Peninsula.
- **Habitat:** Occurs in arid desert in rocky areas, chaparral, woodland, and dense vegetation (Thompson et al 2016).
- **Suitable Habitat in Project Area:** Chaparral, cismontane woodland, and in disturbed areas where dense vegetation is present.
- **Occurrence in Project Area:** Documented in the eastern and southeastern portions of the Project area (Figure 7).
- **Year Documented:** 1995.

Blainville's (Coast) Horned Lizard (*Phrynosoma blainvillii*)

- **Status:** CDFW SSC
- **Distribution:** Sierra Nevada foothills from Butte County to Kern County and throughout the Central and Southern California coast.
- **Habitat:** Occurs in sandy soils in valley-foothill hardwood, conifer and riparian habitats, as well as in pine-cypress, juniper and annual grassland habitats (CDFW 2000).
- **Suitable Habitat in Project Area:** Riparian forest/scrub and annual grassland with sandy soils.
- **Occurrence in Project Area:** Documented in the northeastern portion of the Project area (Figure 7).
- **Year Documented:** 1985, 2011.

Coast Patch-nosed Snake (*Salvadora hexalepis virgultea*)

- **Status:** CDFW SSC
- **Distribution:** Coastal and inland southern California into northwestern Baja California, Mexico.
- **Habitat:** Occurs in coastal sage scrub, chaparral, open woodlands, desert-edge habitats, and rocky hillsides and canyons containing loose, sandy soils (Thompson et al 2016).
- **Suitable Habitat in Project Area:** Costal scrub, chaparral, riparian forest/scrub, cismontane woodland, and annual grassland with sandy soils.
- **Occurrence in Project Area:** Documented in the southeastern portion of the Project area (Figure 7).
- **Year Documented:** 1993

Western Spadefoot Toad (*Phrynosoma blainvillii*)

- **Status:** California candidate threatened species, CDFW SSC
- **Distribution:** California

- **Habitat:** Occurs primarily in grasslands, but occasional populations also occur in valley-foothill hardwood woodlands. Some populations persist for a few years in orchard or vineyard habitats (Zeiner et al 1988-1990).
- **Suitable Habitat in Project Area:** Cismontane woodland and annual grassland with water sources for breeding.
- **Occurrence in Project Area:** Unknown.
- **Year Documented:** Unknown.

Birds

Southern California Rufous-crowned Sparrow (*Aimophila ruficeps canescens*)

- **Status:** CDFW WL
- **Distribution:** Southern California and northwestern Baja California, Mexico.
- **Habitat:** Occurs in coastal sage scrub and sparse mixed chaparral on rocky hillsides and in canyons, and is also found in open sage scrub/grassy areas of successional growth. Tends to be more common in areas that have burned in the past 15 years (Unitt 2004).
- **Suitable Habitat in Project Area:** Coastal scrub, chaparral, and annual grassland.
- **Occurrence in Project Area:** Documented in the central portion of the Project area (Figure 7).
- **Year Documented:** 2005, 2008.

Grasshopper Sparrow (*Ammodramus savannarum*)

- **Status:** CDFW SSC
- **Distribution:** United States, Mexico, and Canada, and central America. Only known in California in coastal and central regions.
- **Habitat:** Restricted to grassland habitats, typically dominated by native bunchgrasses. Nests are placed hidden within clumps of dense grass, but this species will occupy open areas within prairies, hayfields, and open pastures while foraging for insects (Shuford et al. 2008).
- **Suitable Habitat in Project Area:** Annual grassland.
- **Occurrence in Project Area:** Documented in the northern and southeastern portions of the Project area (Figure 7).
- **Year Documented:** 2001 and 2011.

Golden Eagle (*Aquila chrysaetos*)

- **Status:** Federal Bald and Golden Eagle Protection Act, California fully protected, CDFW WL

- **Distribution:** Ranges from Alaska and northern Canada south through the western United States and Mexico. Also found across northern Europe, Asia, northern Africa, and parts of the Middle East and Himalayas.
- **Habitat:** Occurs in mountains up to 12,000 feet amsl, canyon lands, rocky terrain, and riverside cliffs and bluffs. Usually nest on cliffs but may also build nests in trees, on the ground, or in human-made structures and towers (USFWS 2025c).
- **Suitable Habitat in Project Area:** Steep canyons, crags or bluffs within coastal scrub, chaparral, cismontane woodland, and riparian forest/scrub.
- **Occurrence in Project Area:** Documented in the central and southeastern portions of the Project area (Figure 7).
- **Year Documented:** 2007.

Western Burrowing Owl (*Athene cunicularia*)

- **Status:** USFWS Bird of Conservation Concern, CDFW SSC
- **Distribution:** Throughout the United States, Mexico, Central America, South America, and northeast Caribbean.
- **Habitat:** Occurs in open, dry annual or perennial grasslands, deserts, and scrublands, as well as agricultural and ruderal landscapes, characterized by low-growing vegetation with available burrows or burrow-like structures such as culverts. Often associated with high densities of burrowing small mammals (Shuford et al. 2008).
- **Suitable Habitat in Project Area:** Annual grassland and coastal scrub with low-growing vegetation and available small mammal burrows or burrow-like structures.
- **Occurrence in Project Area:** Documented in the north-central portion of the Project area (Figure 7).
- **Year Documented:** 2016.

Coastal Cactus Wren (*Campylorhynchus brunneicapillus sandiegensis*)

- **Status:** USFWS BCC, CDFW SSC
- **Distribution:** Northwestern Baja California north through the coastal lowlands in San Diego County and into southern Orange County.
- **Habitat:** Occurs in coastal cholla and prickly pear (*Opuntia littoralis* and *Opuntia oricola*) patches in coastal sage scrub and maritime succulent scrub (Shuford et al. 2008).
- **Suitable Habitat in Project Area:** Coastal scrub with dense patches of cholla or prickly pear.
- **Occurrence in Project Area:** Documented in the central and south-central portions of the Project area (Figure 7).
- **Year Documented:** 1995, 2005.

Southwestern Willow Flycatcher (*Empidonax traillii extimus*)

- **Status:** Federally endangered, State endangered
- **Distribution:** Arizona, California, Colorado, New Mexico, Texas, Utah
- **Habitat:** Occurs in dense riparian vegetation along streams.
- **Suitable Habitat in Project Area:** Non-vegetated channel, riparian forest/scrub
- **Occurrence in Project Area:** unknown.
- **Year Documented:** unknown.

California Horned Lark (*Eremophila alpestris actia*)

- **Status:** CDFW WL
- **Distribution:** California.
- **Habitat:** Occurs primarily in grassland and beach habitats but can also be found in disturbed lands, agricultural lands, and alpine fell fields in the Sierra Nevada (CDFW 2025d).
- **Suitable Habitat in Project Area:** Annual grassland and agricultural land.
- **Occurrence in Project Area:** Documented in the north-central portion of the Project area (Figure 7).
- **Year Documented:** 2008.

Yellow-breasted Chat (*Icteria virens*)

- **Status:** CDFW SSC
- **Distribution:** United States, southern Canada, Mexico, and central America.
- **Habitat:** Occurs in riparian thickets of willow and other brushy tangles near waterways.
- **Suitable Habitat in Project Area:** Riparian forest/scrub with dense willow coverage.
- **Occurrence in Project Area:** Documented in the northern, central, southern, and southeastern portions of the Project area (Figure 7).
- **Year Documented:** 2001, 2011, 2013, 2016.

Coastal California Gnatcatcher (*Polioptila californica californica*)

- **Status:** Federally threatened, CDFW SSC
- **Distribution:** Southern California to Baja California, Mexico.
- **Habitat:** Occurs almost exclusively in coastal sage scrub vegetation but can also be found in chaparral and riparian habitats (USFWS 2010).
- **Suitable Habitat in Project Area:** Coastal scrub and chaparral.
- **Occurrence in Project Area:** Documented in the northwestern, central, southeastern, and southwestern portions of the Project area (Figure 7).
- **Year Documented:** Over 400 occurrences documented from 1985 through 2020.

Yellow Warbler (*Setophaga petechia*)

- **Status:** CDFW SSC
- **Distribution:** United States, Canada, Mexico, and central America
- **Habitat:** Occurs primarily in riparian woodlands, and less often in montane chaparral and mixed coniferous forests with thick brush.
- **Suitable Habitat in Project Area:** Riparian forest/scrub.
- **Occurrence in Project Area:** Documented in the central and northern portions of the Project area (Figure 7).
- **Year Documented:** 2003, 2011, 2016.

Least Bell's Vireo (*Vireo belli pusillus*)

- **Status:** Federally endangered, California endangered
- **Distribution:** California and northern Baja California, Mexico during breeding season and winters in southern Baja California, Mexico.
- **Habitat:** Occurs in a variety of habitats, but most often associated with riparian habitat vegetated with willow species in Southern California below 2,000 feet in elevation. Requires dense understory shrub cover for nest concealment, with an overstory dominated by willows.
- **Suitable Habitat in Project Area:** Riparian forest/scrub with dense understory and willow overstory.
- **Occurrence in Project Area:** Documented in the central, northern, eastern and southeastern portions of the Project area (Figure 7).
- **Year Documented:** 51 occurrences documented from 1996 to 2018.

Mammals

Western Mastiff Bat (*Eumops perotis californicus*)

- **Status:** CDFW SSC
- **Distribution:** San Joaquin Valley and Coastal Ranges from Monterey County through southern California, from the coast eastward to the Colorado Desert.
- **Habitat:** Occurs in open, semi-arid to arid habitats, including conifer and deciduous woodlands, coastal scrub, annual and perennial grasslands, palm oases, chaparral, desert scrub, and urban habitats. Roosts in rock crevices, cliff faces, high buildings, trees, and tunnels (Zeiner et al 1988-1990).
- **Suitable Habitat in Project Area:** Coastal scrub, chaparral, cismontane woodland, annual grassland, and urban/developed land with appropriate tunnels, bridges, and buildings for roosting.
- **Occurrence in Project Area:** Documented in the south-central portion of the Project area (Figure 7).

- **Year Documented:** 2007.

Pocketed Free-tailed Bat (*Nyctinomops femorosaccus*)

- **Status:** CDFW SSC
- **Distribution:** Southwestern United States, Mexico, and Central America
- **Habitat:** Occurs in pinyon-juniper woodlands, desert scrub, desert succulent scrub, desert riparian, desert wash, alkali desert scrub, Joshua tree, and palm oasis. Roosts in rock crevices, caverns, or buildings (Zeiner et al 1988-1990).
- **Suitable Habitat in Project Area:** rocky cliffs, cervices, caverns, and urban/developed land with bridges, buildings, tunnels appropriate for roosting.
- **Occurrence in Project Area:** Documented in the central portion of the Project area (Figure 7).
- **Year Documented:** 1989.

3.3.3 Critical Habitat

Critical habitat is defined as the specific areas within the geographic range occupied by the species at the time of listing that contain the physical or biological features that are essential to the conservation of these endangered or threatened species and that may need special management or protection (USFWS 2025d).

Coastal California gnatcatcher was the only species with designated critical habitat mapped in the Project area and its vicinity (Figure 8, Critical Habitat) (USFWS 2025d). Critical habitat for coastal California Gnatcatcher occurs throughout the northern, central, and southeastern portions of the Project area in areas of open space.

3.3.4 Nesting Birds

The Project area contains suitable nesting habitat for many bird and raptor species protected under the CFGC and the Migratory Bird Treaty Act (MBTA). The majority of habitat for nesting birds in the Project area occurs in the native and ornamental trees, shrubs, and buildings that occur throughout the Project area. The structures in the developed land also have the potential to support nesting by certain species that use structures with eaves, ledges, crevices, cracks, and other "cavities," nest in or on utility structures, or nest on rooftops, such as black phoebe (*Sayornis nigricans*), gulls (*Larus* sp.), and Bewick's wren (*Thryomanes bewickii*). Suitable habitat for tree- and shrub-nesting species, including sensitive coastal California gnatcatcher, southwestern willow flycatcher, least Bell's vireo, and yellow warbler, is available in the coastal scrub, chaparral, cismontane woodland, riparian forest/scrub communities in the Project area. The trees throughout the Project area could also support nesting by more common birds, including Anna's hummingbird (*Calypte anna*), American crow (*Corvus brachyrhynchos*), and orioles (*Icterus* sp.), which often nest in ornamental palm and eucalyptus trees. Grassland- and ground-nesting species, such as the

sensitive grasshopper sparrow, California horned lark, and western burrowing owl, all documented in the Project area could nest in the annual grassland and open agricultural land throughout the Project area. The availability of large amounts of high-quality nesting habitat with access to nearby food and water sources make it very likely that birds and raptors use the Project area for nesting.

3.3.5 Sensitive Roosting Bats

The Project area contains suitable foraging and roosting habitat for sensitive bat species, including western Mastiff bat, which was documented south of the Project area (Table 2; Figure 7). The structures in the developed land of the Project area provide suitable roosting habitat for structure- and cavity-dwelling bats such as big brown bat (*Eptesicus fuscus*). Additionally, the numerous native trees in the cismontane woodland and riparian forest/scrub communities and the ornamental trees throughout the developed land of the Project area could provide suitable roosting habitat for tree-roosting bats, such as the hoary bat (*Lasiurus cinereus*) and western red bat (*Lasiurus blossevillii*), a CDFW species of special concern. There are also numerous non-vegetated channels, wetlands, and freshwater lakes and ponds present in the Project area which provide suitable foraging habitat for bats roosting in the area that forage over sources of open water, such as the western mastiff bat (*Eumops perotis*). The availability of suitable habitat indicates bats are likely roosting and foraging in the Project area.

3.4 Wildlife Corridors and Habitat Linkages

Wildlife corridors provide routes for local movement and also regional linkages and corridors, often following linear topographic, vegetation, or water features. These corridors can be continuous habitats features, or "stepping stone" areas, providing critical rest and foraging areas for birds traveling along migratory routes, for example. Local routes of movement provide constant connections to resources that include sources of water, home/cover sites, and foraging areas. Regional linkages and movement corridors provide larger patches of open space to allow relatively free movement of wildlife species along multiple paths between important resources. These areas allow for not only long-term genetic flow between subpopulations but also critical pathways of seasonal/migratory movements. Larger predatory mammals often use regional corridors for hunting and reproduction needs. Potential wildlife corridors can include streams, riparian areas, and culverts under roadways. Habitat characteristics considered included topography, habitat quality, and adjacent land uses.

The Project area provides opportunities for wildlife movement and dispersal and provides connections to surrounding and nearby open space areas. In addition, the Project area contains suitable nesting, foraging, and nursery sites for many wildlife species.

The major aquatic resources, including rivers and streams, as well as riparian corridors around many of these features, provide important wildlife movement corridors throughout the Project

area. These areas function to facilitate amphibian, fish, reptile, bird, and mammal movement in the region.

The Puente-Chino Hills area, located within and surrounding the northern and eastern portions of the Project area, provides connectivity between the Santa Ana mountains to the south and the San Gabriel mountains to the north, and function as a vital corridor for wildlife movement through the open space and native vegetation communities that occur in these areas.

The Project area is also in the Pacific Flyway, the major migratory bird corridor of the western United States. The Project area contains open space, native vegetation, and aquatic resources, and its position in the Pacific Flyway migratory corridor makes it very likely to provide habitat for migratory birds traveling between nesting and wintering areas.

According to the California Essential Habitat Connectivity Project, which maps relatively natural habitat blocks that support native biodiversity, several areas spanning from northeast to southwest in the western portion of the Project area serve as natural landscape blocks (CDFW 2025e). Additionally, small natural areas are scattered throughout the Project area (Figure 9, Wildlife Corridors/NCCPs).

The Project area is likely to be used as a movement corridor for both sensitive and common wildlife species because of the native vegetation communities, undeveloped open space, inland mountainous regions, and numerous fresh water aquatic resources within and adjacent to the Project area. The open space within the Project area has the potential to provide important habitat connectivity both locally and regionally.

Section 4 Regulatory Framework

This section summarizes federal, state, regional, and local regulations, plans, policies, and programs that provide protection and management of sensitive biological resources that are applicable to the Project. The federal government administers non-marine plant- and wildlife-related issues through the USFWS, while waters of the U.S. issues are administered by the USACE. California law relating to wetland, water-related, and wildlife issues is administered by the CDFW. Under the California Environmental Quality Act (CEQA), impacts associated with a project or program are assessed with regard to significance criteria determined by the CEQA lead agency (in this case, the City) pursuant to the CEQA Guidelines. Biological resources-related laws and regulations that apply include the federal Endangered Species Act, MBTA, Clean Water Act (CWA), CEQA, California Endangered Species Act, and CFGC.

4.1 Federal

Bald and Golden Eagle Protection Act (16 USC 668–668d). This act prohibits the possession, selling, or hunting of bald or golden eagles. This includes living eagles and their feathers, nests, eggs, or body parts.

CWA Section 404 (33 CFR 328.3[a]). These provisions regulate the discharge of dredged or fill material in waters of the U.S, including wetlands. Activities that discharge dredge or fill material into waters of the U.S. can be authorized by the USACE.

On August 29, 2023, the U.S. Environmental Protection Agency and the USACE issued a final rule to amend the final "Revised Definition of Waters of the U.S." The 2023 final rule became effective on September 8, 2023. Under the 2023 final rule:

(a) Waters of the U.S. are defined as:
1. Waters which are:
    i. Currently used, or were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters which are subject to the ebb and flow of the tide;
    ii. The territorial seas; or
    iii. Interstate waters;
2. Impoundments of waters otherwise defined as waters of the United States under this definition, other than impoundments of waters identified under (a)(5) of this section;
3. Tributaries of waters identified in (a)(1) or (2) of this section that are relatively permanent, standing or continuously flowing bodies of water;

4. Wetlands adjacent to the following waters:
    i. Waters identified in (a)(1) of this section; or
    ii. Relatively permanent, standing or continuously flowing bodies of water identified in (a)(2) or (a)(3) of this section and with a continuous surface connection to those waters;
    iii. Intrastate lakes and ponds not identified in (a)(1) through (4) of this section that are relatively permanent, standing or continuously flowing bodies of water with a continuous surface connection to the waters identified in (a)(1) or (a)(3) of this section.

Federal Endangered Species Act, Sections 7 and 9 (16 USC 1531 et seq.; 50 CFR Part 402). This act prohibits the "take" (i.e., harm, harass, or kill individuals or destroy associated habitat) of species federally listed as threatened or endangered. Take incidental to otherwise lawful activities can be authorized by the USFWS through a permit under the federal Endangered Species Act, Sections 4(d), 7, or 10(a).

MBTA (16 USC 703–712; 50 CFR 10). The MBTA prohibits the direct or indirect take of migratory birds and their active nests unless permitted.

4.2 State

Birds of Prey Protection Provision (California Fish and Game Code, Section 3503.5). This provision prohibits the taking of birds of prey (Order Falconiformes and Strigiformes), including their nests and eggs.

California Endangered Species Act (California Fish and Game Code, Section 2050 et seq.). This act prohibits any activities that would jeopardize or take a species designated as threatened or endangered by the state.

Streambed Alteration Agreement (California Fish and Game Code, Section 1600). The CFGC requires any person who proposes a project that will substantially divert or obstruct the natural flow or substantially change the bed, channel, or bank of any river, stream, or lake, or their tributaries, or use materials from a streambed to submit a notification for a Streambed Alteration Agreement to the CDFW.

California Fish and Game Code, Section 1602. Section 1602 regulates water resources in the State of California. Activities that divert or obstruct the natural flow of or change or use material from the bed, channel, or bank of any river, stream, or lake may be authorized by the CDFW. CDFW jurisdiction includes intermittent and perennial watercourses and extends to the top of the bank of a stream or lake if unvegetated or to the limit of the adjacent riparian vegetation, located contiguous to the watercourse, if the stream or lake is vegetated.

California Fish and Game Code, Section 3503. Section 3503 prohibits the take, possession, or needless destruction of the nests or eggs of any birds except as otherwise provided by the code or any regulation made pursuant thereto.

CEQA, as amended (California Public Resources Code, Section 21000 et seq.). The goal of CEQA is to assist California public agencies in identifying potentially significant negative environmental impacts caused by their actions and avoiding or mitigating those impacts when feasible.

California Fully Protected Wildlife Species Provision (California Fish and Game Code, Sections 3511, 4700, 5050, and 5515). These provisions prohibit the taking of fully protected birds, mammals, amphibians, and fish.

California Native Plant Protection Act of 1977 (California Fish and Game Code, Sections 1900–1913). These provisions preserve, protect, and enhance endangered or rare native plants of the state.

Regional Water Quality Control Board (RWQCB). The RWQCB regulates impacts to water quality under Section 401 of the CWA. A project must comply with Section 401 of the CWA before the USACE can issue a Section 404 Permit. The RWQCB will issue a Section 401 Water Quality Certification or Waiver of Certification, depending on the extent of impacts to waters of the United States. The RWQCB also regulates impact to waters of the state (usually limited to "isolated" waters or swales that may not fall under USACE jurisdiction) under the Porter-Cologne Act.

Natural Community Conservation Planning Act (NCCP), as amended (California Fish and Game Code, Sections 2800–2835). The primary objective of the Natural Community Conservation Planning Act (NCCP) program is to conserve natural communities at the ecosystem level while accommodating compatible land use. The program seeks to anticipate and prevent the controversies and gridlock caused by species' listing by focusing on the long-term suitability of wildlife and plant communities and including key interests in the process.

Porter-Cologne Water Quality Control Act. Regulated by the RWQCB for impacts to waters of the state. Although water quality issues related to impacts to waterways are normally addressed in a Section 401 Water Quality Certification, should a water of the State of California be determined by the USACE not to have CWA jurisdiction, the Porter-Cologne Act would be addressed under a Construction General Permit, State General Waste Discharge Order, or Waste Discharge Requirements, depending on the level of impact and the properties of the waterway.

4.3 Local

4.3.1 City of Brea General Plan

The City's comprehensive General Plan was adopted in 2003 (2003 Brea General Plan). The 2003 Brea General Plan identifies the community's vision for its collective future and establishes the fundamental framework to guide future decision-making about development, resource

management, public safety, public services, and general community well-being. During creation of the General Plan, the community worked together to craft this vision and define it through text and illustrations. The General Plan reflects the planning desires and values of Brea residents, the business community, community educators, and elected and appointed officials.

The 2003 Brea General Plan describes how Breans will work to retain the natural and aesthetic qualities that make their City unique, but at the same time, respond to the dynamics of regional growth and meeting changing community needs. The 2003 Brea General Plan serves as a policy guide, balancing these interrelated factors to Brea's community vision. The goals and policies contained in the City's General Plan supports the overarching vision statement, which is: "IMAGINE BREA: Brea will be a community that provides great places to live, work, learn, and play; Places that respect the community's natural and cultural resources; Provide open space and public spaces that appeal to all Breans; Encourage economic vitality, and enhance the overall quality of life for all residents."

In support of this vision statement, the community defined four overarching goals that embody the community's values and will guide all decisions made pursuant to this General Plan (City of Brea 2003).

> Goal 1: Create an inclusive community that strives to meet the needs of residents of all ages, income levels, occupations, family types, and lifestyles.
>
> Goal 2: Plan for the sustainable stewardship of natural resources.
>
> Goal 3: Provide a range of mobility options that reduce dependence on the automobile.
>
> Goal 4: Maintain a sustainable economic base to provide a solid fiscal foundation and diverse employment opportunities, and to ensure the provision of quality community facilities and services.

In support of the City's commitment to enhance the living environment for all residents by providing, facilitating, and supporting parks, recreation facilities and programs, and open space of high quality in a cost-effective manner, the following community resource (CR) goals were put in place:

> Goal CR-1: Provide a variety of parks and recreation facilities that meet the diverse needs and interests of the community.
>
> Goal CR-2: Protect and preserve existing parks and recreation facilities.
>
> Goal CR-3: Maximize use of open space areas capable of supporting park-type activities.

Goal CR-4: Preserve open space aggressively for diverse purposes – as a visual and scenic resource, for habitat conservation, to protect watersheds, and for recreation.

Goal CR-5: Provide a flexible and balanced open space and conservation plan.

Goal CR-6: Provide an extensive trail system that links all areas of Brea.

Goal CR-7: Encourage an urban and walkway trail system within the urban areas of the City.

Goal CR-8: Preserve and maintain wildlife and animal movement corridors.

Goal CR-9: Preserve and maintain open space, natural habitat, and vegetation communities that support wildlife species and animals.

Goal CR-10: Pursue aggressively the preservation and protection of scenic resources.

Goal CR-11: Conserve and protect water resources through water conservation standards, sustainable development practices, and water quality standards.

Goal CR-12: Protect the beneficial uses of ground and surface waters.

Goal CR-13: Improve air quality.

Goal CR-14: Preserve historically significant landmarks and/or sites, individual structures, objects, and neighborhoods, and encourage appropriate rehabilitation.

Goal CR-15: Make all Breans aware of the importance of historic preservation.

4.3.2 Orange County Transportation Authority Natural Community Conservation Plan (NCCP)/Habitat Conservation Plan (HCP) Planning Agreement

The Orange County Transportation Authority (OCTA) NCCP/HCP accommodates the implementation of the OCTA's 13 proposed freeway projects proposed under Measure M (M2), designed to reduce congestion, increase capacity, and improve traffic flow of Orange County's important transportation infrastructure. It would also accommodate management activities conducted on the OCTA acquired lands (or preserves) within Orange County. The M2 NCCP/HCP includes the lands along existing freeways in which M2 freeway improvement projects will be constructed and provides a framework to protect and enhance natural resources in Orange County while streamlining the environmental permitting process for Covered Projects and Activities. Covered projects and activities include 13 freeway improvement projects and ongoing management, restoration, and monitoring activities in preserves associated with the M2 NCCP/HCP. The M2 NCCP/HCP fulfills

the requirements of issuance of take permits from the California Department of Fish and Game (CDFG) and the United States Fish and Wildlife Service (USFWS).

Section 5 Thresholds of Significance

Appendix G of the CEQA Guidelines (CEQA Guidelines, Section 15000 et seq.) defines "significant effect on the environment" as a "substantial, or potentially substantial adverse change in the environment." Appendix G of the CEQA Guidelines further indicates that there may be a significant effect on biological resources if the project would:

1. Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service.
2. Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, and regulations or by the California Department of Fish and Game or U.S. Fish and Wildlife Service.
3. Have a substantial adverse effect on state or federally protected wetlands (including, but not limited to marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means.
4. Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites.
5. Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance.
6. Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan.

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Section 6 Impacts

Impacts to biological resources from implementation of the Project are categorized quantitatively as direct and indirect impacts.

Direct impacts to biological resources occur when significant alterations or destruction occurs during the course of, or because of, Project implementation. Examples of such impacts include removing, disturbing, or grading vegetation; dredging or grading a stream bank; filling wetlands with any materials; erecting any structures, including in a stream; and severing or physically restricting wildlife corridors and the distribution of individual species or resources. Other direct impacts may include loss of foraging or nesting habitat and loss of individual species as a result of habitat clearing.

Indirect impacts may include elevated levels of noise or lighting, change in surface water hydrology within a floodplain, and increased erosion or sedimentation. These types of indirect impacts can affect vegetation communities or their potential use by sensitive species. They can also cause the disruption of normal wildlife functions or activities, impacting individual species.

Within the direct and indirect quantitative impacts categories, impacts are also qualified temporally as permanent and temporary impacts.

Permanent impacts may result in irreversible damage to biological resources, including habitat or removal of species from a particular area.

Temporary impacts are interim changes in the local environment due to construction and would not extend beyond project-associated construction, including revegetation of temporarily disturbed areas adjacent to native habitats.

An analysis of the exact acreage of direct impacts that would occur on biological resources, including sensitive plant and wildlife species, sensitive vegetation communities, jurisdictional aquatic resources, and wildlife corridors and habitat linkages, in the Project area from Project implementation is not provided at the programmatic level. This is because such an analysis would be speculative in nature since focused surveys were not conducted, and future site-specific project designs are not known at this time.

6.1 Threshold 1: Sensitive Plant and Wildlife Species

6.1.1 Guidelines for Determination of Significance

Significant impacts to sensitive plant and wildlife species could result if the Project has a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations or by the CDFW and USFWS.

6.1.2 Impacts Analysis

6.1.2.1 Sensitive Plant Species

Direct Impacts

A total of ten sensitive plant species have been documented by historical literature and databased within one mile of the Project area (refer to Table 2, Sensitive Plant Species Documented in the Project Area, and Figure 7). No biological surveys or focused species surveys were conducted as a part of this Project. The Project area consists of eight habitats and three land cover types (refer to Table 1), including fresh water, freshwater emergent wetland, non-vegetated channel, cismontane woodland, riparian forest/scrub, annual grassland, chaparral, coastal scrub, agricultural land, disturbed land, and urban/developed land. The potential for these habitats and land cover types to provide suitable habitat for sensitive plant species is summarized below.

Developed (Urban/developed Land, Disturbed land, and Agricultural land). Impacts on urban/developed land and agricultural land, which comprises approximately 5,685 acres, have a low potential to impact sensitive plant species because these areas provide little to no suitable habitat value for the sensitive plant species documented in the Project area. However, impacts on disturbed land have the potential to impact sensitive plant species. Impacts to these disturbed habitat could result in potentially significant impacts without mitigation.

Wetlands and Waters (Fresh Water, Freshwater Emergent Wetland, and Non-Vegetated Channel). The aquatic habitats present in the Project area, including fresh water, freshwater emergent wetland, and non-vegetated channel, have the potential to support sensitive plant species, including Gambel's water cress. Impacts to these vegetation communities could result in potentially significant impacts without mitigation.

Woodland and Forest (Cismontane Woodland and Riparian Forest/Scrub). The cismontane woodland and riparian forest/scrub communities throughout the Project area have the potential to support sensitive plants documented in the Project area, including southern California black walnut and Nevin's barberry. Impacts to these vegetation communities could result in potentially significant impacts without mitigation.

Upland Vegetation Communities (Annual Grassland, Chaparral, and Coastal Scrub). The upland vegetation communities of annual grassland, chaparral, and coastal scrub present in the Project area provide suitable habitat for many of the sensitive plant species documented as occurring in the Project area, such as Braunton's milk-vetch, intermediate mariposa-lily, many-stemmed dudleya, Santa Ana River woollystar, Robinson's pepper-grass, Hubby's Phacelia, Nevin's barberry Coulter's and Matilija Poppy. Impacts to these vegetation communities could result in potentially significant impacts without mitigation.

Impacts to the vegetation communities listed above as well as disturbed habitat are assumed to be significant without mitigation because they could result in impacts to sensitive plant species. Prior to impacts to undeveloped areas that could support sensitive plant species occurring in the Project area, a site specific biological survey shall be required to be conducted to determine the presence and potential for occurrence of sensitive plant species and to quantify potential impacts on these resources (Mitigation Measure BIO-1). While suitable habitats for the historically documented sensitive plant species may be present in the Project area, many of these species have specific microhabitat requirements, including soils and elevation range restrictions, that may reduce the potential for these species to occur on a particular site. Therefore, site specific biological surveys are needed to analyze potential impacts.

If the results of the biological survey determine that sensitive plant species are not present and do not have a high potential to occur, direct impacts to sensitive plant species would be less than significant, and no further mitigation is required.

Alternatively, if the results of the biological survey determine that sensitive plant species are present or have a high potential to occur due to available suitable habitat, direct impacts to sensitive plant species would occur and further mitigation would be required (Mitigation Measures BIO-2 through BIO-4).

Indirect Impacts

Temporary indirect impacts to sensitive plant species could result during Project implementation, and may include dust, which could disrupt plant vitality in the short term, or construction-related soil erosion and runoff. Permanent edge effects, which are changes that occur at the boundary between two different communities or habitats (i.e., native habitat and urban/developed land), could result during operation of the Project. These edge effects may include intrusions by humans and therefore possible trampling of individual plants, invasion by exotic plant and wildlife species, exposure to urban pollutants (fertilizers, pesticides, herbicides, and other hazardous materials), soil erosion, litter, fire, and hydrologic changes (e.g., surface and groundwater level and quality).

Like the discussion under Sensitive Plant Species, Direct Impacts, if the results of the biological surveys determine that sensitive plant species are not present and do not have a high potential to occur, indirect impacts to sensitive plant species would be less than significant, and no further mitigation would be required.

Alternatively, if the results of the biological survey determine that sensitive plant species are present or have a high potential to occur due to available suitable habitat, indirect impacts to sensitive plant species could occur.

However, the Project would be required to be in compliance with state and local regulations controlling erosion and stormwater runoff, including the National Pollutant Discharge Elimination

System (NPDES) Construction General Permit provisions, which would trigger preparation and compliance with an approved Stormwater Pollution Prevention Plan that would consider the full range of erosion control best management practices (BMPs), including any additional site-specific and seasonal conditions to minimize any water quality and erosion impacts that could result during construction. The City of Brea participates in the NPDES permit program via a partnership consisting of Orange County, all cities within Orange County, and the County Flood Control District. Therefore, through compliance with these regulations, indirect impacts to sensitive plant species would be less than significant, and no mitigation is required.

6.1.2.2 Sensitive Wildlife Species

Direct Impacts

A total of 20 sensitive wildlife species have been documented by historical literature and databased in the Project area (refer to Table 3, Sensitive Wildlife Species Documented in the Project and Figure 7). No biological surveys or focused species surveys were conducted as a part of this Project.

Implementation of the Project on urban/developed land has a low potential to impact sensitive wildlife species because it provides little to no suitable habitat value for the sensitive wildlife species documented in the Project area. However, the ornamental trees and shrubs and structures present in the urban/developed land could provide potential overwintering habitat for monarch butterfly and suitable foraging and roosting habitat for sensitive bats documented in the Project area, including western Mastiff bat. Direct impacts to the trees, shrubs, and structures in the urban/developed land of the Project area could result in direct impacts in the form of foraging, nesting, and roosting habitat loss.

The aquatic habitats present in the Project area including wetlands and streams, have the potential to provide suitable habitat for sensitive reptiles like southwestern pond turtle, and foraging, nesting, for sensitive bird species such as southwestern willow flycatcher, least Bell's vireo, and yellow-breasted chat.

The woodland and forest communities of cismontane woodland and riparian forest/scrub throughout the Project area support sensitive reptiles, birds, and mammals documented in the Project area, including but not limited to Blainville's (coast) horned lizard and red-diamond rattlesnake. If sandy and/or gravelly soils are present, these areas may have the potential to support western spadefoot.

The upland vegetation communities of annual grassland, chaparral, and coastal scrub present in the Project area provide suitable habitat for sensitive invertebrates, reptiles, birds, and mammals documented in the Project area. These sensitive wildlife species include monarch butterfly, grasshopper sparrow, coastal cactus wren, western burrowing owl, and California horned lark,

among others. If sandy and/or gravelly soils are present, these areas may have the potential to support western spadefoot.

Although the disturbed and agricultural land throughout the Project area is unlikely to support most of the historically documented sensitive wildlife species, species like western burrowing owl have adapted to frequently use highly cultivated and disturbed areas such as agricultural lands for burrowing (if suitable burrows and soil conditions are available) and as movement corridors.

Impacts to the vegetation communities listed above are assumed to be significant without mitigation because they could result in impacts to sensitive wildlife species. Prior to impacts to sensitive vegetation communities that could support sensitive wildlife species, a biological survey shall be required to be conducted to determine the presence and potential for occurrence of sensitive wildlife species and to quantify potential impacts on these resources (Mitigation Measure BIO-1). .

If the results of the biological survey determine that sensitive wildlife species are not present and do not have high potential to occur, direct impacts to sensitive wildlife species would be less than significant, and no further mitigation is required.

Alternatively, if the results of the biological survey determine that sensitive wildlife species are present or have a high potential due to available suitable habitat, direct impacts to sensitive wildlife species would be considered potentially significant without further mitigation (Mitigation Measures BIO-3, BIO-4, BIO-5, BIO-6).

Nesting Birds

The Project area provides potentially suitable nesting habitat for birds and raptors protected under the CFGC and MBTA. Focused nest surveys were not conducted due to the programmatic nature of the Project. If construction activities or other disruptive Project activities begin during the general bird and raptor nesting season (January 15 through September 15), the Project could result in potentially significant impacts without mitigation. Prior to impacts to potential nesting bird habitat in the Project area, a nesting bird survey would be required to implement regulations protecting sensitive nesting birds, including the CFGC and MBTA (Mitigation Measure BIO-7).

Sensitive Roosting Bats

As previously discussed, suitable roosting habitat for sensitive bat species, including western Mastiff bat, occurs in the structures and trees throughout the Project area. Although no focused nighttime mist-netting or acoustic surveys were conducted, the potential availability of suitable roosting with nearby foraging habitat suggests that bats may be roosting in the Project area. Therefore, if sensitive roosting bats are present, potential impacts would be considered potentially

significant without mitigation. Prior to impacts to potential roosting bat habitat in the Project area, a roosting bat survey would be required (Mitigation Measure BIO-6).

Critical Habitat

Critical habitat for coastal California gnatcatcher occurs in the Project area (Figure 8). Potential impacts to this sensitive species in its designated critical habitat could occur during implementation of the Project on these opportunity sites and would be considered potentially significant without mitigation. Prior to impacts to coastal California gnatcatcher critical habitat in the Project area, a biological resources survey and habitat assessment would be required to implement regulations protecting critical habitat (Mitigation Measure BIO-1).

Like the discussion under Sensitive Wildlife Species, Direct Impacts, if the results of the biological survey determine that suitable habitat for coastal California gnatcatcher is not present, direct impacts to this sensitive species in its designated critical habitat would be less than significant, and no mitigation is required.

Alternatively, if the results of the biological survey determine that suitable coastal California gnatcatcher habitat is present, direct impacts to designated critical habitat for coastal California gnatcatcher would be considered potentially significant without mitigation. Implementation of Mitigation Measures BIO-3 through BIO-7 would be required to reduce impacts to critical habitat to a less than significant level.

Indirect Impacts

Temporary construction-related and long-term operational indirect impacts to wildlife generally include lighting, increased human activity, hydrologic quality (increased turbidity, excessive sedimentation, flow interruptions, and changes in water temperature), noise, vibration, and trash and garbage, which can attract both introduced terrestrial and native terrestrial and avian predators (such as American crows, common ravens [*Corvus corax*], coyotes [*Canis latrans*], domestic dogs [*Canis familiaris*], raccoons [*Procyon lotor*], and striped skunks [*Mephitis mephitis*]). These indirect impacts in the form of habitat disturbance and potential predation could have a significant impact on the sensitive wildlife species historically documented in the Project area, identified in Section 3.3.2, Sensitive Wildlife Species, and discussed under Direct Impacts in Section 6.1.2.2, Sensitive Wildlife Species.

Like the discussion under Sensitive Wildlife Species, Direct Impacts, if the results of the biological survey determine that sensitive wildlife species are not present and do not have a high potential to occur, indirect impacts to sensitive wildlife species would be less than significant, and no mitigation is required.

Alternatively, if the results of the biological survey determine that sensitive wildlife species are present or have a high potential to occur due to available suitable habitat, indirect impacts to sensitive wildlife species could occur.

As previously discussed under Indirect Impacts in Section 6.1.2.1, Sensitive Plant Species, indirect impacts to sensitive wildlife species from hydrologic changes, including erosion, stormwater runoff, and pollution discharges, would be reduced through project compliance with NPDES Construction General Permit provisions.

However, indirect impacts to sensitive wildlife species from lighting, increased human activity, and potential predation by mesocarnivores attracted by trash and garbage could result. Therefore, indirect impacts to sensitive wildlife during Project construction activities would be considered potentially significant without mitigation.

6.1.3 Mitigation Measures

Sensitive Plant Species

Implementation of Mitigation Measure BIO-1 and BIO-2 would reduce potential direct and indirect impacts to sensitive plant species through conducting sensitive plant species focused surveys prior to construction of the Project. Direct impacts to vegetation communities potentially occupied by sensitive plant species would be conserved or restored through the implementation of Mitigation Measure BIO-3 and Mitigation Measure BIO-4.

The operation of future projects proposed as a result of changes to the General Plan under this Project could potentially result in indirect impacts to biological resources, such as edge effects. These potential impacts are not addressed in this report because such impacts would be project specific and variable and to do so at this point would be speculative. Rather these potential indirect impacts resulting from operation of such projects would be addressed on a project-by project basis through the environmental review required under Mitigation Measure BIO-1 and compliance with existing local policies, and federal and state environmental regulations.

Sensitive Plant

MM BIO-1 **Pre-project/Activity Biological Resources Survey/Habitat Assessment.** For project sites within vegetation communities and land covers other than "Urban/Developed," as shown on Figure 6, Vegetation Communities and Land Cover Types, the following requirements shall apply.

Prior to the issuance of any clearing, grading, or construction permits for individual development projects that are not exempt from California Environmental Quality Act (CEQA), and in conjunction with any required CEQA review, the future project applicant shall submit one or more documents to the City of Planning Division for

review and approval, demonstrating that the project site does not contain native vegetation, sensitive plants, or undisturbed soils. Examples of acceptable documentation include, but are not limited to, the following:

- Aerial photographs (historic and current) showing grading, building footprints, paving, and landscaped areas over time to support ornamental status, existing landscape plans.
- Photographic documentation consisting of georeferenced or dated photographs.
- Landscaping plans or as-built drawings demonstrating that vegetation was intentionally planted as part of site development.
- Field survey results prepared by a qualified biologist confirming that existing plant species are ornamental and non-native.

Within the future site-specific project areas exhibiting native vegetation,, a site-specific biological resources survey shall be conducted during the project design phase.

The biological resources survey and habitat assessment shall be conducted by a qualified biologist and shall include but not be limited to the following:

- An analysis of available literature and biological databases, such as the California Natural Diversity Database, to determine sensitive biological resources that have been reported historically from the Proposed Project vicinity.
- A review of current land use and land ownership within the Project vicinity.
- An assessment and mapping of vegetation communities present within the Project vicinity. If vegetation community mapping has not been conducted on the site in the previous 3 years, updated vegetation mapping shall be conducted by a qualified biologist as part of the Project planning and environmental review process. Vegetation communities shall be mapped according to the Manual of California Vegetation at the alliance level, and a crosswalk table with Holland vegetation communities shall be provided.
- A general assessment of the potential for aquatic resources, including wetlands and riparian habitats, to occur on site.
- An evaluation of potential local and regional wildlife movement corridors.
- A focused habitat assessment to determine if the Project area supports vegetation communities that may provide habitat for plant or wildlife species, to be conducted by a qualified biologist, to determine the potential for sensitive plant or wildlife species to occur in or adjacent to the Project area.
- If the Project area supports sensitive vegetation communities, the project proponent shall implement the following weed control methods to minimize the

establishment and spread of non-native and invasive weed species in the project site during construction activities:

- Seeds and plant materials used for revegetation shall be certified weed free.
- Straw materials, such as those used for erosion control, shall be certified weed free.

The results of the biological survey shall be presented in a biological technical report. The survey report shall map and describe the location and extent of observed sensitive resources, including sensitive vegetation communities, plant, and wildlife species within the areas of potential direct and indirect effects for each project area, direct and indirect impacts associated with construction and operation of a project, and the need for further survey, monitoring, or mitigation, including measures pursuant to mitigation measures MM BIO-2, MM BIO-3, MM BIO-4, MM BIO-5, MM BIO-6, and MM BIO-7 of this Program Environmental Impact Report.

MM BIO-2: **Focused Sensitive Plant Species Surveys.** Prior to subsequent project-level approval and prior to any construction or grading activities, focused surveys for future site-specific development shall be conducted, as applicable, in suitable habitat, to determine presence/absence of sensitive plant species in the Project area. Focused sensitive plant surveys shall be conducted during the species' specific blooming periods to determine presence/absence. If sensitive plant species are mapped within any proposed construction, access, or staging areas, these species shall be quantified and flagged, and these areas shall be modified to avoid direct impacts to mapped sensitive plant species. If significant impacts to these species are unavoidable, the impact on these species shall be reduced to a less than significant level through implementation of one or a combination of the following actions, in accordance with a Conceptual Restoration Plan or acquisition of mitigation credits, reviewed and approved by the City of Brea:

- Impacted plants shall be salvaged and relocated to suitable habitat in an on-site restoration area, if possible. If relocation to a restoration area is not practical, the plants shall be relocated off-site to an appropriate location determined by a qualified biologist.
- Seeds from impacted plants shall be collected for use at a local off-site location, as applicable.
- Off-site habitat that supports the species impacted shall be enhanced or supplemented with seed collected on site.
- Comparable habitat at an approved off-site location shall be determined by a qualified biologist and preserved for relocation, enhancement, or transplant of the impacted sensitive plants.

Mitigation that involves relocation, enhancement, or transplant of sensitive plants shall include all the following:

- Conceptual planting plan prepared by a qualified biologist including grading, planting specifications, and, if appropriate, temporary irrigation.
- Planting specifications and fencing and signage to discourage unauthorized access of the planting site.
- Monitoring program prepared by a qualified biologist with clearly stated goals and objectives and well-defined performance standards that result in no net loss of sensitive plant resources. Final success criteria shall be determined based on quality, quantity, and species of plant impacted and in consultation with California Department of Fish and Wildlife and U.S. Fish and Wildlife Service depending on the status of the species. The monitoring program will include measures for adaptive management detailing remedial actions if success criteria are not met in the monitoring time frame. Remedial actions may include, but are not limited to, supplemental water, replanting, and herbivore deterrents/protections.

MM BIO-3 **Sensitive Vegetation Communities Impacts Mitigation.** Prior to subsequent project-level approval and prior to any construction or grading activities, a biological survey shall be conducted to ground-truth and/or update vegetation communities. Any direct impacts to sensitive vegetation communities require mitigation to comply with California Department of Fish and Wildlife authorizations, as well as the ratios defined in any State or federal permit(s) issued for the Proposed Project.

Potential direct impacts to sensitive vegetation communities resulting from Project implementation shall be mitigated prior to any vegetation clearing or ground-disturbing activities within the site-specific areas through one of the following three options:

a. Vegetation communities and land cover types will be verified in the field during the required biological survey and will be mapped for impact analysis;
b. Compensatory mitigation for sensitive habitats shall be satisfied through the acquisition of mitigation bank credits via a resource agency-approved mitigation site within the site's specific watershed or by acquisition of other off-site mitigation credits to be identified and selected in coordination with CDFW. Prior to implementation of Project construction impacts (e.g., vegetation clearing or ground-disturbing activities) that would require compensatory mitigation, documentation demonstrating the availability of mitigation credits (i.e., credit ledger) at the approved mitigation site must be submitted to the City of Brea for confirmation; or
c. If credits are not available at a resource agency-approved mitigation site within the site's specific watershed or through other off-site mitigation

credits, implementation of habitat creation, restoration, enhancement, or preservation shall occur through a Habitat Mitigation and Monitoring Plan developed by a qualified biologist. Under this option, a Habitat Mitigation and Monitoring Plan shall be provided and prepared to achieve no net loss of the resource, be timed in relation to Project impacts, and comply with Federal and State mitigation requirements.

When proposed mitigation involves habitat enhancement, restoration or creation, the Habitat Mitigation and Monitoring Plan shall include all of the following information:

- Conceptual planting plan including planting zones, grading, and irrigation.
- Seed mix/planting palette.
- Planting specifications.
- Monitoring program prepared by a qualified biologist including success criteria that ensure no net loss of sensitive vegetation communities. Final success criteria shall be determined based on quality, quantity, and type of habitat impacted and in consultation with CDFW. The monitoring program shall include measures for adaptive management plan detailing remedial actions if success criteria are not met in the monitoring time frame. Remedial actions may include, but are not limited to, supplemental water, replanting, and herbivore deterrents/protections.

For mitigation that involves habitat acquisition, the Habitat Mitigation and Monitoring Plan shall include all the following:

- Location of proposed acquisition.
- Description of the biological resources to be acquired, including support for the conclusion that the acquired habitat mitigates for the specific maintenance impact.
- Documentation that the mitigation area would be adequately preserved and maintained in perpetuity.

The identification of mitigation site credits shall be provided to the City of Brea and shall include the following:

- Location of approved mitigation site.
- Description of the mitigation credits to be acquired, including substantial evidence that the acquired habitat mitigates for the specific maintenance impact.
- Documentation of the credits that are associated with a mitigation bank, which has been approved by the appropriate resource agencies.
- Documentation in the form of a current mitigation credit ledger.

MM BIO-4: **Habitat Restoration for Temporary Impacts.** Temporary impact areas shall be restored to pre-construction topographic contours and conditions, including the revegetation of native plant communities, where appropriate, following disturbance and prior to Project completion. Habitat restoration and erosion control treatments shall be installed within these short-term impact areas. Habitat revegetation shall feature native species that are typical of the area, and associated erosion control best management practices shall include silt fence and microplastic- and weed-free straw fiber rolls, where appropriate. The revegetation areas shall be monitored and maintained by a qualified biologist or restoration specialist for 25 months to ensure adequate establishment and sustainability of the plantings/seedings.

Where a Project activity involves potential disturbance of non-native invasive plant species (as identified by the California Invasive Plant Council), these plants shall be entirely removed immediately, where feasible, and the removal shall be monitored by the qualified monitoring biologist to ensure that dispersal of propagules (e.g., seeds and stems) are avoided or minimized. Where removal of plant roots is not feasible (e.g., where erosive flows are predicted), aboveground plant material shall be fully removed and monitored by the qualified monitoring biologist. Where aboveground plant material cannot be removed (e.g., due to limited access), herbicides shall be applied by a licensed pest control advisor, using chemicals permitted as safe within aquatic environments.

Sensitive Wildlife Species

In the event that sensitive wildlife species are identified as present or with a high potential to occur in suitable habitat or other sensitive wildlife species are identified within the potential impact area, impacts would be considered potentially significant without mitigation.

Direct impacts to vegetation communities potentially occupied or used by sensitive wildlife species would be conserved or restored through the implementation of Mitigation Measure BIO-3 and Mitigation Measure BIO-4, listed previously under Sensitive Plant Species Mitigation Measures.

Implementation of Mitigation Measure BIO-5 would reduce potential direct and indirect impacts to sensitive wildlife species, including sensitive roosting bats, through monitoring by a qualified biologist prior to and during construction of the Project. Mitigation Measure BIO-6 and Mitigation Measure BIO-7 would reduce potential direct impacts to sensitive wildlife species, including sensitive birds and raptors, roosting bats, and designated critical habitat for coastal California gnatcatcher, through conducting sensitive bird and wildlife species focused surveys prior to construction.

MM BIO-5: **Qualified Monitoring Biologist.** Prior to subsequent Project-level approval and prior to the start of construction activities, a qualified monitoring biologist shall be

retained to implement required monitoring. The qualified monitoring biologist shall be responsible for the following monitoring and reporting tasks:

a. **Biological Construction Mitigation/Monitoring Exhibit.** Prior to the start of construction within the future site-specific project areas that have potential to contain sensitive biological resources, the qualified monitoring biologist shall submit a Biological Construction Mitigation/Monitoring Exhibit, which includes limits of work, proposed monitoring schedule, bird, focused sensitive species, or other wildlife surveys/survey schedules (including general bird nesting and U.S. Fish and Wildlife Service protocol), timing of surveys, bird construction avoidance areas/noise buffers/barriers, other impact avoidance areas, and any subsequent requirements determined by the qualified monitoring biologist. The Biological Construction Mitigation/Monitoring Exhibit shall include the construction site plan, written and graphic depiction of the Proposed Project's biological mitigation/monitoring program, and a schedule for construction activities. Where the potential for impacts to biological resources is limited (e.g., construction within a footprint that consists entirely of previously developed or disturbed lands), the Biological Construction Mitigation/Monitoring Exhibit may be limited to a pre- and post-maintenance verification inspection by a qualified biologist. For highly sensitive resource areas with documented sensitive biological and aquatic resources present, full-time biological monitors may be required, as determined by a qualified biologist. The Biological Construction Mitigation/Monitoring Exhibit shall be approved by the City of Brea prior to the start of construction.
b. **Resource Marking/Protection.** Prior to the start of construction activities within the future site-specific Project area, the qualified monitoring biologist shall supervise the placement of orange construction fencing or similar visible marker, staking, or flagging along the limits of the construction area adjacent to sensitive biological habitats, as shown on the Biological Construction Mitigation/Monitoring Exhibit to ensure crews remain within the approved construction limits. These demarcations shall not be required for areas with existing barriers, such as chain-link fencing, along the limits or facilities that are within or adjacent to developed and non-sensitive habitat areas. This task shall include flagging plant specimens and delineating buffers to protect sensitive biological resources (e.g., habitats, sensitive plant and wildlife species, including nesting birds) prior to construction.
c. **Cover Trenches.** The qualified monitoring biologist shall oversee the construction site so that cover and escape routes for wildlife from excavated areas shall be provided daily. All trenches, holes, and excavations during construction shall be covered at night as directed by the monitoring biologist with plywood, metal

plates, or other means, and if plastic sheeting is used, the edges must be covered with soils such that small wildlife cannot access the excavated hole. Soil piles shall be covered at night to prevent wildlife from burrowing in. The edges of the sheeting shall be weighed down by sandbags. These areas may also be fenced to prevent wildlife from gaining access. Exposed trenches, holes, and excavations shall be inspected twice daily (i.e., each morning and before sealing the exposed area) by the qualified monitoring biologist to monitor for wildlife entrapment. Excavations shall provide an earthen ramp to allow for a wildlife escape route. The qualified monitoring biologist shall verify that the contractor has covered all steep-walled trenches or excavations prior to the end of construction daily. If wildlife species are encountered within any trenches or excavated areas, the qualified monitoring biologist shall remove them, if possible, or provide them with a means of escape (e.g., a ramp or sloped surface at no greater than a 30-degree angle) and allow the species to disperse. In addition, the qualified monitoring biologist shall provide training to construction personnel to increase awareness of the possible presence of wildlife beneath vehicles and equipment and to use best judgment to avoid killing or injuring wildlife (refer to Mitigation Measure BIO-5e).

d. **Structure and Tree Clearance.** Prior to the issuance of any permit to allow for the removal or demolition of trees and existing structures within the survey area (particularly any ornamental trees and existing buildings in the developed land areas), the qualified monitoring biologist shall conduct clearance surveys to flush out any wildlife species nesting, roosting, or otherwise occupying the trees or structures. If wildlife species are encountered within any of the trees or structures (outside the general bird nesting season), the qualified monitoring biologist shall remove them, if possible, or provide them with a means of escape and allow the species to disperse. If tree-roosting bats are suspected, slow removal by gently pushing the tree over with heavy equipment is required.

e. **Pre-Construction Meeting/Education.** Prior to the start of any construction activity where the site plan for the construction area indicates that significant impacts to biological resources may occur, as determined by a qualified biologist, a pre-construction meeting shall be held on site with the following in attendance: City of Brea representative (project planner and building inspector), the construction contractor (if applicable), and the qualified monitoring biologist. At this meeting, the qualified monitoring biologist shall identify and discuss the construction protocols that apply to the proposed activities and the sensitive nature of the adjacent habitat with appropriate Project personnel.

   At the pre-construction meeting, the qualified monitoring biologist shall submit to the City of Brea representatives and construction contractor a copy

of the Biological Construction Mitigation/Monitoring Exhibit that identifies areas to be protected, fenced, and monitored. This data shall include all buffer limits, if applicable.

Prior to the start of construction activities, the qualified monitoring biologist shall meet with the construction contractor and crew and conduct an on-site educational session regarding the need to avoid impacts outside the approved construction footprint and to protect sensitive plants and wildlife that may occur at the specific facility. This may include but not be limited to explanations of the bird and wetland buffers, the flag system for removal of invasive species or retention of sensitive plants, and clarification of acceptable access routes/methods and staging areas.

f. **Biological Monitoring and Reporting.** The qualified monitoring biologist with stop work authority shall inspect/monitor the Project construction area in accordance with the approved Biological Construction Mitigation/Monitoring Exhibit. This may be limited to pre- and post-maintenance inspections, weekly visits, or full-time monitoring, as determined by the qualified monitoring biologist and the City of Brea.

   The qualified monitoring biologist shall document monitoring events via a Consultant Site Visit Record. This record shall be sent to the City of Brea Project manager each month. However, if weekly reports are submitted as part of a separate agency permit requirement, these reports may be forwarded to the City of Brea in place of Consultant Site Visit Record submittals.

   If no deviations from the construction site plan occur during maintenance, no additional documentation is required. However, if deviations from the site plan do occur, such as unanticipated impacts to sensitive vegetation communities or unanticipated discharge of pollutants, a final monitoring report shall be prepared within 3 months following the completion of mitigation monitoring detailing maintenance and monitoring that occurred, and any remedial or compensatory measures taken.

BIO-6: **Focused Sensitive Wildlife Species Surveys.** Focused surveys for future site-specific development shall be conducted, as applicable, in suitable habitat, to determine presence/absence of sensitive wildlife species within the proposed survey area. If sensitive wildlife species or their habitat are present or potentially present based on biological surveys, the following measures shall be implemented.

a. **Crotch's bumble bee.** Habitat assessment surveys for California Endangered Species Act (CESA) candidate bumble bee species, with a focus on Crotch's bumble bee, followed the California Department of Fish and Wildlife (CDFW)

methodology from the Survey Considerations for CESA Candidate Bumble Bee Species dated June 6, 2023 (CDFW Survey Considerations) (CDFW 2023). If no Crotch's bumble bees are found during the focused surveys, but the habitat assessment identified suitable nesting, foraging, or overwintering habitat in the Project area, recommendations outlined in the CDFW Survey Considerations will be followed, including recommendations that a biological monitor be on site during vegetation or ground-disturbing activities that take place during any of the Queen and Gyne Flight Period and Colony Active Period. If Crotch's bumble bees are observed, Project proponents may propose site-specific measures to avoid take, or consult with CDFW to obtain an incidental take permit if take of CESA-protected bumble bees may occur during Project activities.

b. **Western spadefoot and Monarch butterfly.** If western spadefoot or monarch butterfly become listed prior to implementation of future site-specific development projects, focused surveys and consultation with the U.S. Fish and Wildlife Service (USFWS) would be necessary.

c. **Western burrowing owl.** If suitable habitat for western burrowing owl is present (annual grassland and agricultural land), a qualified biologist shall conduct focused surveys of the site and a 500-foot buffer, as access allows. If no burrowing owls are identified, no further measures are necessary. If burrowing owls are detected, active burrows shall be avoided using buffers outlined in the Staff Report on Burrowing Owl Mitigation, dated March 7, 2012, issued by CDFW. If avoidance is not possible, the qualified biologist shall consult with CDFW. No direct disturbance to burrowing owls or their occupied habitat shall occur without appropriate authorization from CDFW.

d. **Least Bell's vireo.** If suitable habitat for least Bell's vireo is present and clearing, grubbing, grading, or other construction activities may occur between March 15 and September 15, the breeding season of the least Bell's vireo, a qualified biologist shall conduct focused surveys for the presence of the least Bell's vireo of the site and areas of potentially suitable habitat within 300 feet or that would be subject to construction noise levels exceeding 60 A-weighted decibels or to the ambient noise level if it already exceeds 60 A-weighted decibel hourly average. If present, measures to minimize noise impacts (such as temporary noise walls/berms) may be required. Noise levels from construction activities during the avian breeding season should not exceed 60 decibels (dBA Leq; or the ambient noise level if they already exceed 60 dBA Leq) at the edge of the occupied habitat. If complete avoidance is not feasible, the qualified biologist shall consult with USFWS. No direct harm to the species shall be allowed without appropriate authorization from USFWS.

e. **Southwestern willow flycatcher.** If suitable habitat for southwestern willow flycatcher is present and clearing, grubbing, grading, or other construction activities may occur between April 15 through September 15, the breeding season of the southwestern willow flycatcher, a qualified biologist shall conduct focused surveys for the presence of the southwestern willow flycatcher of the site and areas of potentially suitable habitat within 500 feet. If the species is determined to be present, consultation per Endangered Species Act with USFWS would be necessary and no activities would occur until authorized by USFWS. No direct harm to the species shall be allowed without appropriate authorization from USFWS.

f. **Sensitive Bat Species.** If suitable roosting habitat (e.g., riparian habitat, snags, wooden buildings, bridges, etc.) for sensitive bat species is present, a qualified biologist shall conduct subsequent focused surveys no less than 14 days prior to removal or disturbance of vegetation or buildings. The survey shall consist of visual and/or acoustic methods as deemed appropriate by the qualified biologist. If no bats are detected, no further measures are necessary. If bat species are detected during surveys, a site-specific plan shall be developed by the qualified biologist. The plan may include, as determined by the qualified biologist, delaying removal of roost habitat until after the maternity roosting period and exclusion of bats from roosting habitat prior to removal of habitat. The qualified biologist shall consult with CDFW prior to implementing any exclusion activities.

g. **Other Sensitive Species.** Prior to any demolition work, construction or grading activities within the future site-specific project areas, pre-construction surveys for other sensitive wildlife species, such as reptiles, may be required to determine presence/absence of sensitive wildlife species within the proposed survey area.

BIO-7: **Focused Nesting Bird Surveys.** Project activities that may directly (e.g., vegetation removal, clearing and grubbing, building demolition) or indirectly affect (noise, light, or ground vibration) nesting raptors and other protected bird species shall be timed to avoid the nesting season (January 15 through September 15). If Project activities occur within the nesting season, the qualified monitoring biologist shall conduct focused surveys for birds in suitable habitat to determine presence/absence. Surveys shall occur within seven (7) days prior to any construction or grading activities within the future site-specific project areas. Focused sensitive bird surveys shall be conducted during the species' specific nesting seasons to determine presence/absence within the development footprint plus a buffer, if recommended by the qualified monitoring biologist (refer to mitigation measure MM BIO-5). The survey report shall map and

describe the location and extent of observed sensitive bird species that would be impacted within the areas of potential effect for each Project area. If no nesting birds are documented within the individual activity area, construction shall be allowed to proceed. If nesting birds cannot be completely avoided, a no-disturbance buffer shall be established around the active nest, the size of which will be determined by the qualified monitoring biologist based on species of bird and specific construction activities to take place. The size of the buffer can be reduced in consultation with California Department of Fish and Wildlife. Any work within the buffer shall be avoided until the nest is inactive, as determined by the qualified monitoring biologist.

6.1.4 Significance After Mitigation

Implementation of Mitigation Measures BIO-1 through BIO-7 would mitigate direct and indirect impacts to sensitive plant and wildlife species to below a level of significance.

6.2 Threshold 2: Riparian Habitat or Other Sensitive Natural Community

6.2.1 Guidelines for Determination of Significance

A significant impact would result if the Project would have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations or by the CDFW or USFWS.

6.2.2 Impact Analysis

Direct Impacts

A total of eight sensitive vegetation communities and three land cover types occur in the Project area, including fresh water, freshwater emergent wetland, non-vegetated channel, cismontane woodland, riparian forest/scrub, annual grassland, chaparral, coastal scrub, agricultural land, disturbed land, and urban/developed land. Construction activities in areas that contain sensitive vegetation communities could result in potential impacts to these sensitive vegetation communities.

Prior to impacts undeveloped areas occurring in the Project area, a biological survey shall be required to be conducted to determine the presence of sensitive vegetation communities and to quantify potential impacts on these resources (Mitigation Measure BIO-1).

If the results of the biological survey determine that sensitive vegetation communities are not present, direct impacts to sensitive vegetation communities would be less than significant, and no mitigation is required.

Alternatively, if the results of the biological survey determine that sensitive vegetation communities do occur, direct impacts to sensitive vegetation communities would occur and further mitigation would be required (Mitigation Measures BIO-3 through BIO-5.

Impacts to the non-sensitive land cover types, agricultural land, disturbed land, and urban/developed land would not be considered significant or require habitat-based mitigation.

Indirect Impacts

Most of the indirect impacts to sensitive plant species described in Section 6.1, Threshold 1: Sensitive Plant and Wildlife Species, also result in potentially significant indirect impacts to sensitive vegetation communities. Like the discussion under Indirect Impacts in Section 6.1.2.1, if the results of the biological survey required by the City determine that sensitive vegetation communities do not occur, indirect impacts to sensitive vegetation communities would be less than significant, and no mitigation is required.

Alternatively, if the results of the biological survey determine that sensitive vegetation communities are present, indirect impacts to sensitive vegetation communities could occur.

As previously discussed under Indirect Impacts in Section 6.1.2.1, indirect impacts to sensitive vegetation communities from hydrologic changes, including erosion, stormwater runoff, and pollution discharges would be reduced through project compliance with NPDES Construction General Permit provisions (including preparation and implementation of a Stormwater Pollution Prevention Plan and BMPs). Therefore, through compliance with state and local regulations, ordinances, and plans, indirect impacts to sensitive vegetation communities would be less than significant, and no mitigation is required.

6.2.3 Mitigation Measures

In the event that sensitive vegetation communities are identified, development of the Project area could result in potentially significant direct impacts to sensitive vegetation communities, including fresh water, freshwater emergent wetland, non-vegetated channel, cismontane woodland, annual grassland, chaparral, and coastal scrub. Implementation of Mitigation Measures BIO-3 through BIO-5 (described under Sensitive Plant and Wildlife Species Direct Impacts Mitigation) would reduce direct impacts to sensitive vegetation communities through monitoring by a qualified biologist, providing mitigation ratios for acreage impacts, creating new vegetation communities and restoring impacted ones.

6.2.4 Significance After Mitigation

Implementation of Mitigation Measures BIO-3 through BIO-5 would reduce potential direct impacts to sensitive vegetation communities to below a level of significance.

6.3 Threshold 3: Jurisdictional Aquatic Resources

6.3.1 Guidelines for Determination of Significance

A significant impact would result if the Project would have a substantial adverse effect on state or federally protected wetlands through direct removal, filling, hydrological interruption, or other means of disturbance.

6.3.2 Impact Analysis

Direct Impacts

Aquatic vegetation communities, including fresh water, freshwater emergent wetland, and non-vegetated channel, occur in the Project area and may fall under the regulatory jurisdiction of the USACE, RWQCB, or CDFW.

Impacts to jurisdictional aquatic resources are assumed to be significant without mitigation. If potentially jurisdictional aquatic resources are identified during the pre-project/activity biological resources survey conducted pursuant to Mitigation Measures BIO-1, a qualified biologist shall conduct a formal aquatic resources delineation (Mitigation Measure BIO-8).

If the results of the aquatics resources delineation determine that jurisdictional aquatic resources are not present, direct impacts to jurisdictional aquatic resources would be less than significant, and no further mitigation is required.

Alternatively, if the results of the aquatics resources delineation determine that jurisdictional aquatic resources occur in the site-specific project area, direct impacts to jurisdictional aquatic resources would be potentially significant without further mitigation (Mitigation Measure BIO-9).

Indirect Impacts

Most of the indirect impacts to sensitive plant species and sensitive vegetation communities described in Sections 6.1 and 6.2 also result in potentially significant indirect impacts to jurisdictional aquatic resources. Like the discussion in these sections, if the results of the biological survey determine that impacts to jurisdictional aquatic resources will not occur, indirect impacts to jurisdictional aquatic resources would be less than significant, and no further mitigation is required.

Alternatively, if the results of the biological survey determine that jurisdictional aquatic resources are present, indirect impacts to jurisdictional aquatic resources could occur.

As previously discussed under Indirect Impacts in Section 6.1.2.1, indirect impacts to jurisdictional aquatic resources from hydrologic changes, including erosion, stormwater runoff, and pollution discharges, would be reduced through project compliance with NPDES Construction General

Permit provisions (including preparation and implementation of a Stormwater Pollution Prevention Plan and BMPs). Therefore, through compliance with state and local regulations, ordinances, and plans, indirect impacts to jurisdictional aquatic resources would be less than significant, and no mitigation is required.

6.3.3 Mitigation Measures

If jurisdictional aquatic resources are identified, development of the Project area could result in potentially significant direct impacts to jurisdictional aquatic resources. Implementation of Mitigation Measures BIO-3 through BIO-5 (described under Sensitive Plant and Wildlife Species Direct Impacts Mitigation) would reduce direct impacts to jurisdictional aquatic resources through monitoring by a qualified biologist, providing mitigation ratios for acreage impacts, and restoring temporary impact areas.

Prior to construction of the Project and implementation of Mitigation Measures BIO-3 through BIO-5, a formal aquatic resources delineation and resource agency (USACE, CDFW, and RWQCB) approval of the mitigation strategy to compensate for impacts to jurisdictional aquatic resources through the permitting process shall be required. Implementation of Mitigation Measure BIO-8 and Mitigation Measure BIO-9 would further reduce direct impacts to jurisdictional aquatic resources through conducting an aquatic resources delineation and obtaining resource agency permits.

MM BIO-8 Aquatic Resources Delineation. If potentially jurisdictional aquatic resources are identified during pre-project/activity surveys pursuant to mitigation measure MM BIO-1, a qualified biologist shall conduct a formal aquatic resources delineation following the methods outlined in the 1987 U.S. Army Corps of Engineers Wetland Delineation Manual and applicable Regional Supplement to the U.S. Army Corps of Engineers Wetland Delineation Manual to map the extent of wetlands and non-wetland waters, determine jurisdiction, and assess potential impacts. The results of the delineation shall be presented in an aquatic resources delineation report. The aquatic resources delineation report shall be used in consultation with the U.S. Army Corps of Engineers, Regional Water Quality Control Board, and California Department of Fish and Wildlife for necessary authorization or permit, as described in mitigation measure MM BIO-9.

MM BIO-9 Potentially Jurisdictional Aquatic Resources Permitting. Temporary and permanent impacts to the wetland and non-wetland waters potentially under the jurisdiction of the U.S. Army Corps of Engineers, Regional Water Quality Control Board, and California Department of Fish and Wildlife, shall be authorized by the U.S. Army Corps of Engineers, Regional Water Quality Control Board, and California Department of Fish and Wildlife, as applicable. Approved temporary and permanent impacts to the potentially federal and State jurisdictional aquatic resources in the Project area require

compensatory mitigation through proposed on- or off-site habitat restoration, creation, or enhancement to the satisfaction of the U.S. Army Corps of Engineers, Regional Water Quality Control Board, and California Department of Fish and Wildlife to achieve a no-net loss of federal and State jurisdictional wetland and non-wetland waters.

6.3.4 Significance After Mitigation

Implementation of Mitigation Measures BIO-3 through BIO-5, Mitigation Measure BIO-8, and Mitigation Measure BIO-9 would reduce potential direct impacts to jurisdictional aquatic resources to below a level of significance.

6.4 Threshold 4: Wildlife Corridors and Habitat Linkages

6.4.1 Guidelines for Determination of Significance

A significant impact would occur if the Project would interfere substantially with the movement of any native resident or migratory fish or wildlife species, with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites.

6.4.2 Impact Analysis

Direct Impacts

As discussed in Section 3.4, Wildlife Corridors and Habitat Linkages, the Project area is likely to be used as a wildlife movement corridor because it provides suitable nesting, foraging, nursery, and dispersal areas for both sensitive and common wildlife species due to the presence of native vegetation communities and its connection and proximity to Puente-Chino Hills area, the Pacific Coast, as well the Santa Ana mountains to the south and the San Gabriel mountains to the north. There are numerous aquatic resources in and surrounding the Project area, which function as large-scale wildlife movement corridors for resident and migratory birds, large mammals, and aquatic species both locally and regionally. The cismontane woodland and riparian forest/scrub communities in the Project area in particular, are high-quality, contiguous sections of these habitats that support movement and linkages to other habitats along the Pacific Coast and through the mountains to the east for both local and migratory species. The residential and commercial development throughout much of the Project area has the potential to limit wildlife movement through the Project area.

Impacts to the wildlife corridors and habitat linkages are assumed to be significant without mitigation. Prior to impacts to potential wildlife corridors and habitat linkages, a biological survey shall be required to be conducted to determine the presence and potential for occurrence of these resources (Mitigation Measure BIO-1). Thus, prior to individual project construction in areas that contain sensitive vegetation communities or those that could support wildlife corridors and habitat

connectivity (such as agricultural land), a biological survey would be conducted to determine if the area is used as a wildlife corridor or linkage to other sensitive habitats.

If the results of the biological survey determine that wildlife corridors or habitat linkages are not present, direct impacts would be less than significant, and no further mitigation is required.

Alternatively, if the results of the biological survey determine that wildlife corridors and habitat linkages are present, direct impacts would be considered potentially significant without further mitigation (Mitigation Measures BIO-3 through BIO-6.

Indirect Impacts

Wildlife movement corridors and habitat connectivity would be impacted by many of the other indirect effects discussed in Section 6.1.2.2 for indirect impacts to sensitive wildlife species. Like the discussion under Sensitive Wildlife Species, Direct Impacts, if the results of the biological survey determine that wildlife corridors and habitat linkages are not present, indirect impacts to wildlife corridors and habitat linkages would be less than significant, and no mitigation is required.

Alternatively, if the results of the biological survey determine that wildlife corridors and habitat linkages are present, indirect impacts to sensitive wildlife species could occur.

As previously discussed in Section 6.1.2.2, indirect impacts to wildlife corridors and habitat linkages from hydrologic changes, including erosion, stormwater runoff, and pollution discharges, would be reduced through project compliance with NPDES Construction General Permit provisions.

However, indirect impacts to wildlife corridors and habitat linkages from lighting and increased human activity could result. Therefore, indirect impacts to wildlife corridors and habitat linkages would be considered potentially significant without mitigation.

6.4.3 Mitigation Measures

If wildlife corridors and habitat linkages are identified, during pre-project/activity biological resources survey pursuant to Mitigation Measures BIO-1, development of the Project area could result in potentially significant direct and indirect impacts to wildlife corridors and habitat linkages in the Project area. Implementation of Mitigation Measures BIO-3 through BIO-6 (described under Sensitive Plant and Wildlife Species Direct Impacts Mitigation) would reduce direct and indirect impacts to wildlife corridors and habitat linkages through monitoring by a qualified biologist, providing mitigation ratios for acreage impacts, creating new vegetation communities and restoring impacted ones, and conducting sensitive bird and wildlife species focused surveys prior to construction.

6.4.4 Significance After Mitigation

Potential direct and indirect impacts to wildlife corridors and habitat linkages would be less than significant with implementation of Mitigation Measures BIO-3 through BIO-6.

6.5 Threshold 5: Local Policies and Ordinances

6.5.1 Guidelines for Determination of Significance

A significant impact would result if the Project would conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance.

6.5.2 Impact Analysis

As discussed in Sections 6.1 through 6.4, the Project's potential impacts to sensitive plant and wildlife species, sensitive vegetation communities, jurisdictional aquatic resources, and wildlife corridors and habitat linkages would be potentially significant before incorporation of mitigation. However, implementation of mitigation measures that fully mitigate impacts to sensitive plant and wildlife species, sensitive vegetation communities, jurisdictional aquatic resources, and wildlife corridors and habitat linkages discussed in those sections, would fully mitigate for potential impacts to these resources (Mitigation Measures 1 through 9). Additionally, the Focused General Plan Update provides policies that would protect sensitive plant and wildlife species, critical habitat, and sensitive vegetation communities in the Project area.

Therefore, projects to be facilitated by the Focused GPU would comply with local policies and ordinances protecting biological resources set forth in the Focused General Plan Update. With incorporation of Mitigation Measures BIO-1 through BIO-9, implementation of the Project would not result in impacts to protected biological resources, and the Project would not conflict with any local policies or ordinances protecting biological resources. Impacts would be less than significant.

6.5.3 Mitigation Measures

Implementation of Mitigation Measures BIO-1 through BIO-9 (described under Thresholds 1 through 4 in Sections 6.1.3, 6.2.3, 6.3.3, and 6.4.3) ensures no significant impacts would occur to biological resources through conducting pre-construction surveys, focused sensitive plant and wildlife species surveys, focused bird species surveys, requiring sensitive vegetation communities impacts mitigation, habitat restoration for temporary impacts, a qualified monitoring biologist during construction, conducting an aquatic resources delineation, and obtaining resource agency permits.

6.5.4 Significance After Mitigation

Implementation of Mitigation Measures BIO-1 through BIO-9 would mitigate all direct and indirect permanent and temporary impacts to biological resources to below a level of significance,

and any additional protection measures set forth in the Focused General Plan Update would be implemented, as necessary, thereby resulting in the Project's compliance with local policies or ordinances.

6.6 Threshold 6: Regional Conservation Planning

6.6.1 Guidelines for Determination of Significance

A significant impact would result if the Project would conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state Habitat Conservation Plan.

6.6.2 Impact Analysis

The Project area is not within an adopted Habitat Conservation Plan and is not subject to the NCCP program or other regional conservation plan. Therefore, no impacts to local or regional conservation plans would occur from implementation of the Project, and no protection measures are required.

6.6.3 Mitigation Measures

No mitigation is required.

6.6.4 Significance After Mitigation

No mittigation is required, therefore impact without mitigation incorporated.

6.7 Cumulative Impacts

6.7.1 Cumulative Threshold 1: Sensitive Plant and Wildlife Species

Cumulative projects within the vicinity of the Project area would have the potential to result in impacts to sensitive plant and wildlife species, including loss of habitat.

The remaining areas within Orange County, as well as adjacent and nearby jurisdictions, including Los Angeles County to the north, San Bernardino County and Riverside County to the east, and San Diego County to the south, would be required to comply with applicable federal and state regulations that provide protections for sensitive plant and wildlife species, such as the federal Endangered Species Act, California Endangered Species Act, and the California NCCP Act. In addition, some projects that impact sensitive species require approval from the USFWS and CDFW. If significant impacts occur from particular cumulative projects, then mitigation measures are implemented to reduce impacts to the extent feasible in compliance with CEQA.

As discussed in Section 6.1, development of the Project area would have the potential to impact sensitive plant and wildlife species. Because cumulative projects, would be required to implement

project-specific mitigation measures and obtain applicable approval from the CDFW and/or USFWS to reduce the Project's impacts to sensitive plant and wildlife species to below a level of significance, the Project would not contribute to a cumulatively significant impact. Therefore, the Project's contribution to impacts on sensitive plant and wildlife species would not be cumulatively considerable.

6.7.2 Cumulative Threshold 2: Riparian Habitat or Other Sensitive Natural Community

Cumulative projects in the vicinity of the Project area would have the potential to result in impacts associated with riparian habitat and other sensitive natural communities through direct and indirect loss or degradation.

The remaining areas within Orange County, as well as adjacent and nearby jurisdictions, including Los Angeles County to the north, San Bernardino County and Riverside County to the east, and San Diego County to the south, would be required to comply with applicable federal and state regulations such as the California Lake and Streambed Alteration Program or the California NCCP Act. These programs provide protections for riparian and other sensitive habitats. In addition, many projects that affect riparian or other protected habitat types require approval from the USFWS and CDFW. If potentially significant impacts would occur from particular cumulative projects, then mitigation measures would be implemented to reduce impacts to the extent feasible.

As discussed in Section 6.2, development of the Project area would have the potential to impact sensitive vegetation communities. Any projects approved within the City's jurisdiction would be required to implement project-specific mitigation measures to mitigate the Project's impacts to riparian habitat or other sensitive communities to below a level of significance. Therefore, the Project's contribution to impacts on riparian habitat and other sensitive natural communities would not be cumulatively considerable.

6.7.3 Cumulative Threshold 3: Jurisdictional Aquatic Resources

Cumulative projects located in the vicinity of the Project area would have the potential to result in a cumulative impact associated with federally or state protected aquatic resources.

The remaining areas within Orange County, as well as adjacent and nearby jurisdictions, including Los Angeles County to the north, San Bernardino County and Riverside County to the east, and San Diego County to the south, would be required to comply with applicable federal and state regulations such as the California Lake and Streambed Alteration Program, Sections 401 and 404 of the CWA, and the Porter-Cologne Act.

Existing regulations would ensure that a significant cumulative impact associated with federally or state protected aquatic resources would not occur. If potentially significant impacts would occur

from particular cumulative projects, then mitigation measures would be implemented to reduce impacts as required to meet the regulatory agency's no-net-loss standard. As discussed in Section 6.3, the Project would avoid impacts to jurisdictional aquatic resources to the greatest extent feasible, providing compensatory mitigation at an approved ratio for unavoidable impacts, and would not contribute to cumulative impacts to jurisdictional aquatic resources as a result. Projects in the City and in surrounding cities are required to comply with existing regulatory requirements and obtain applicable permits from the USACE, RWQCB, and CDFW. Therefore, the Project's contribution would not be cumulatively considerable.

6.7.4 Cumulative Threshold 4: Wildlife Corridors and Habitat Linkages

Cumulative projects located within the vicinity of the Project area would have the potential to result in a cumulative impact associated with wildlife movement corridors and habitat linkages.

The remaining areas within Orange County, as well as adjacent and nearby jurisdictions, including Los Angeles County to the north, San Bernardino County and Riverside County to the east, and San Diego County to the south, would be required to comply with applicable federal and state regulations such as the California NCCP Act, which supports the continued provision of wildlife movement corridors. If potentially significant impacts would occur from particular cumulative projects, then mitigation measures would be implemented to reduce impacts to the extent feasible.

As discussed in Section 6.4, Threshold 4: Wildlife Corridors and Habitat Linkages, development of the Project would have the potential to impact wildlife corridors or habitat linkages. Any projects would be required to implement project-specific mitigation measures to mitigate the Project's impacts to wildlife corridors or habitat linkages to below a level of significance. Therefore, the Project would not contribute to a cumulatively significant impact, and the Project's contribution would not be cumulatively considerable.

6.7.5 Cumulative Threshold 5: Local Policies or Ordinances

Cumulative projects located in the vicinity of the Project area would have the potential to result in a cumulative impact associated with conflicts with local policies or ordinances.

The remaining areas within Orange County, as well as adjacent and nearby jurisdictions, including Los Angeles County to the north, San Bernardino County and Riverside County to the east, and San Diego County to the south, would be required to comply with applicable local policies or ordinances. If potentially significant impacts would occur from particular cumulative projects, then mitigation measures would be implemented to reduce impacts to the extent feasible.

As discussed in Section 6.5, Threshold 5: Local Policies and Ordinances, the Project would comply with local policies and ordinances protecting biological resources in the updated Brea General Plan. A significant cumulative impact associated with a conflict with a local policy or ordinance

would not occur. Therefore, the Project, in combination with other cumulative projects, would not result in a significant cumulative impact. The Project's contribution would not be cumulatively considerable.

6.7.6 Cumulative Threshold 6: Regional Conservation Planning

As discussed in Section 6.6.2, the Project area is not within an adopted Habitat Conservation Plan and is not subject to the NCCP program or other regional conservation plan. Therefore, the Project, in combination with other cumulative projects, would not result in a significant cumulative impact from conflicts with regional conservation plans. The Project's contribution would not be cumulatively considerable.

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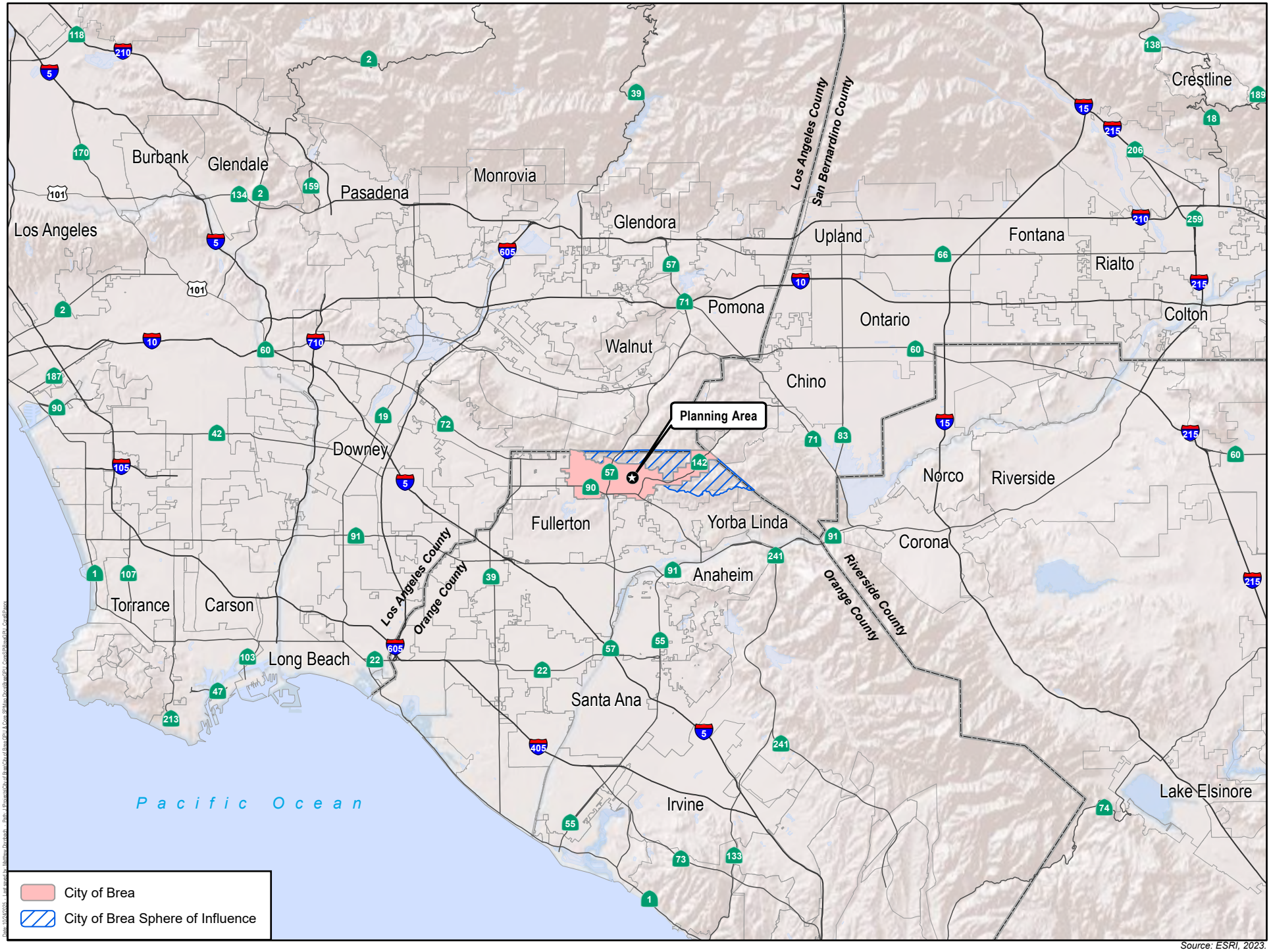
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Appendix A. Figures

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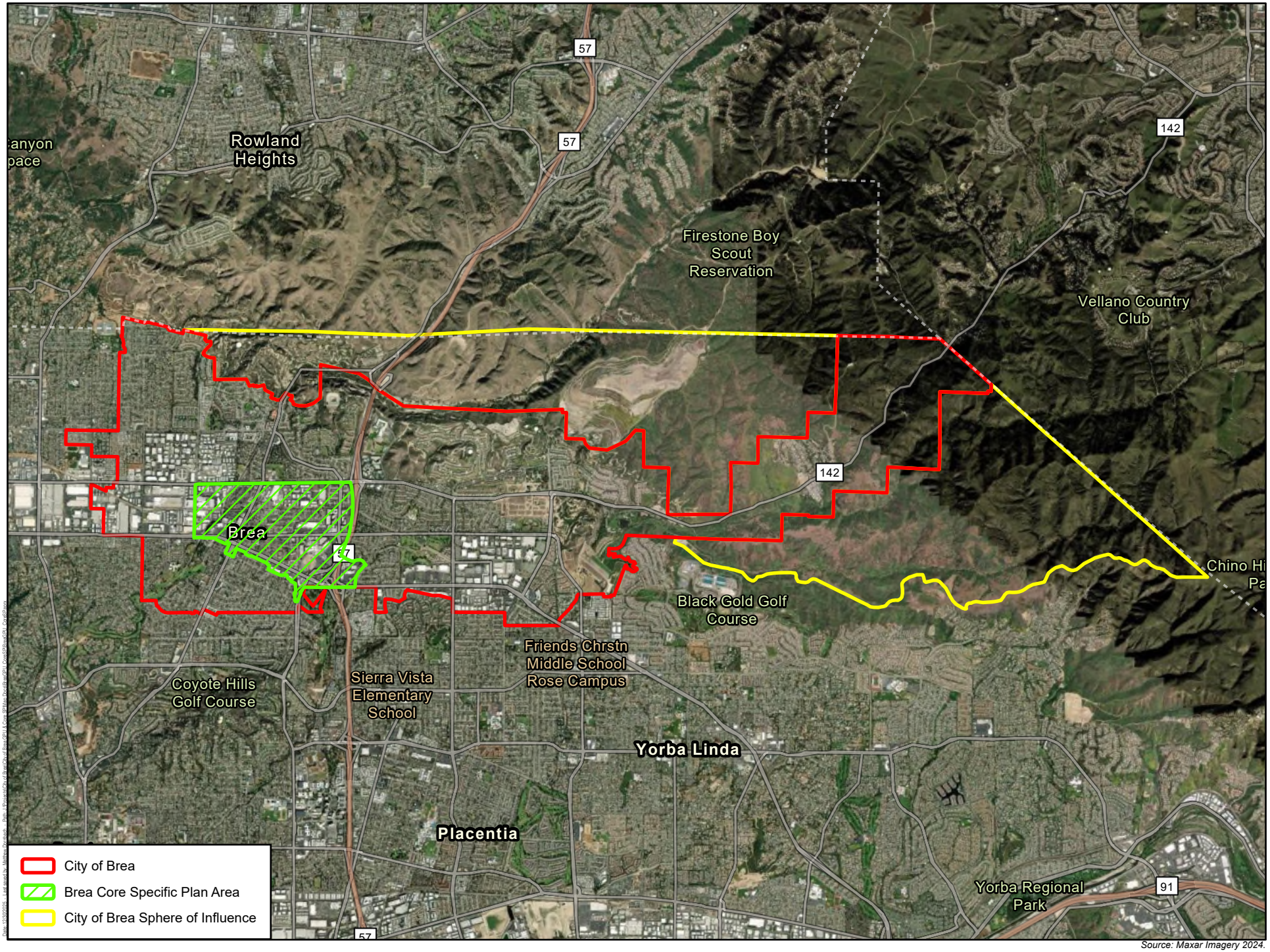
Source: ESRI, 2023.

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Figure 1

Regional Location

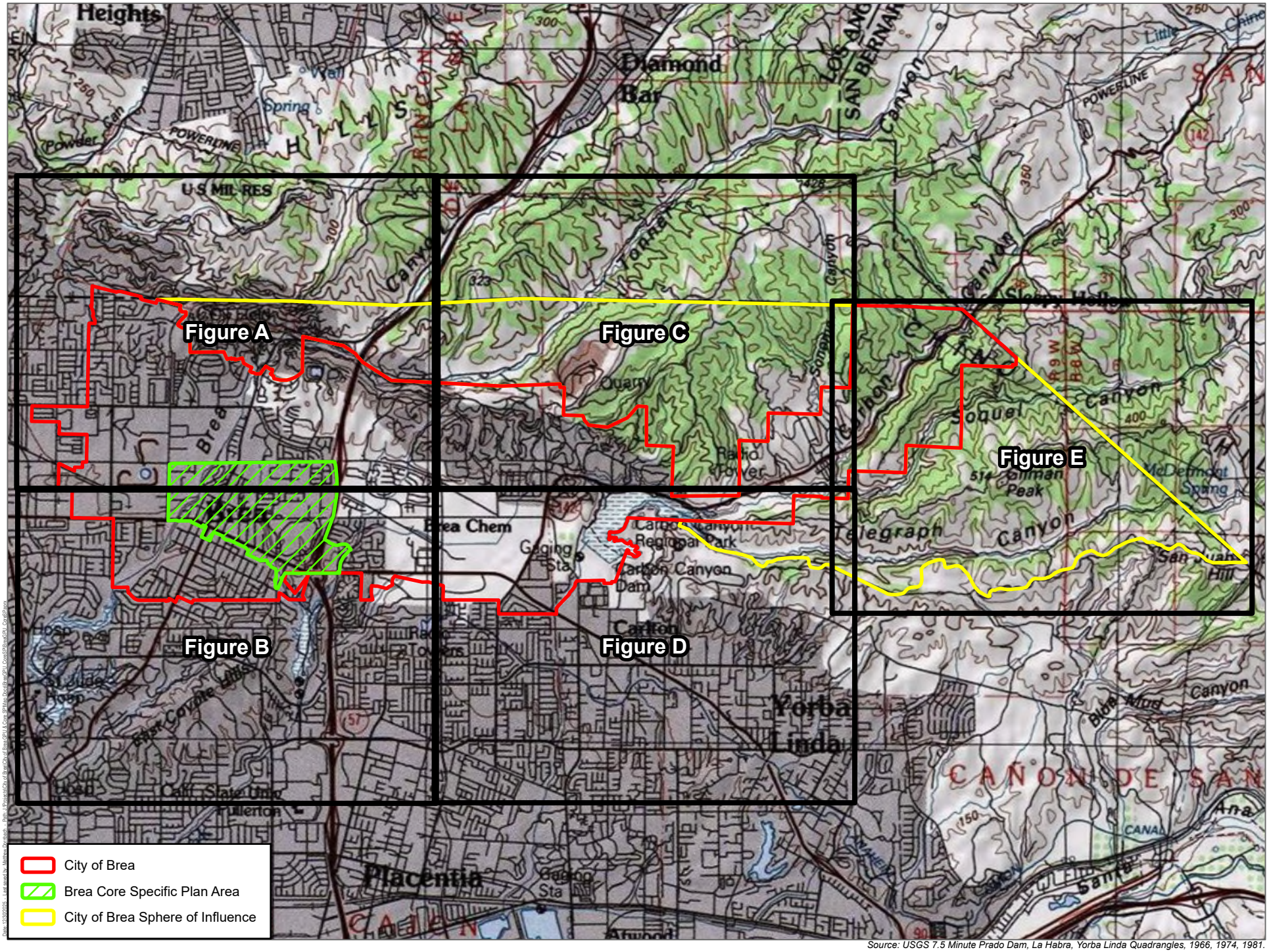
Brea Focused General Plan Update and Brea Core Specific Plan



Source: Maxar Imagery 2024.

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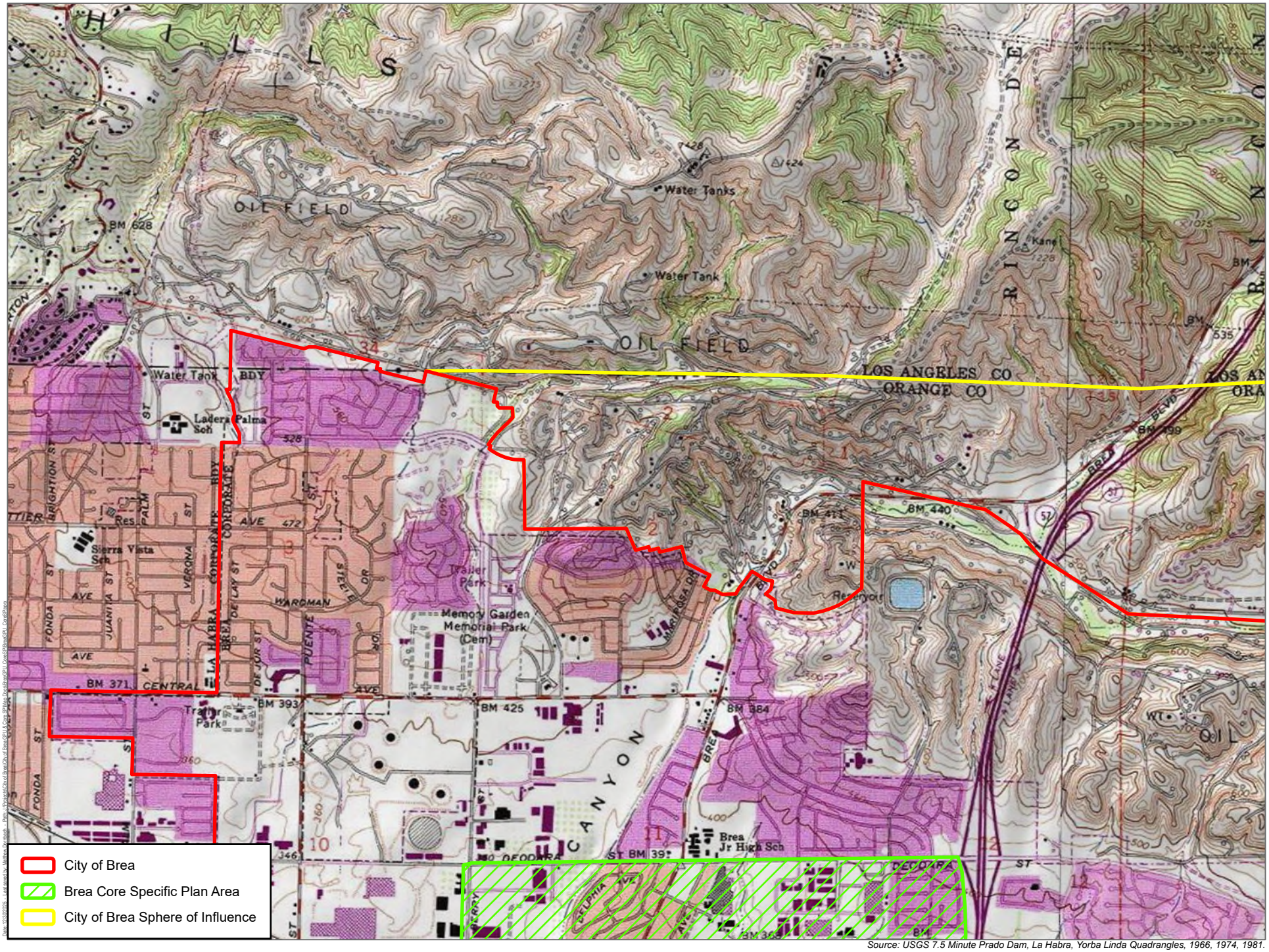
Figure 2
Project Location
Brea Focused General Plan Update and Brea Core Specific Plan



Source: USGS 7.5 Minute Prado Dam, La Habra, Yorba Linda Quadrangles, 1966, 1974, 1981.

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Figure 3
USGS Topographic Map
Brea Focused General Plan Update and Brea Core Specific Plan

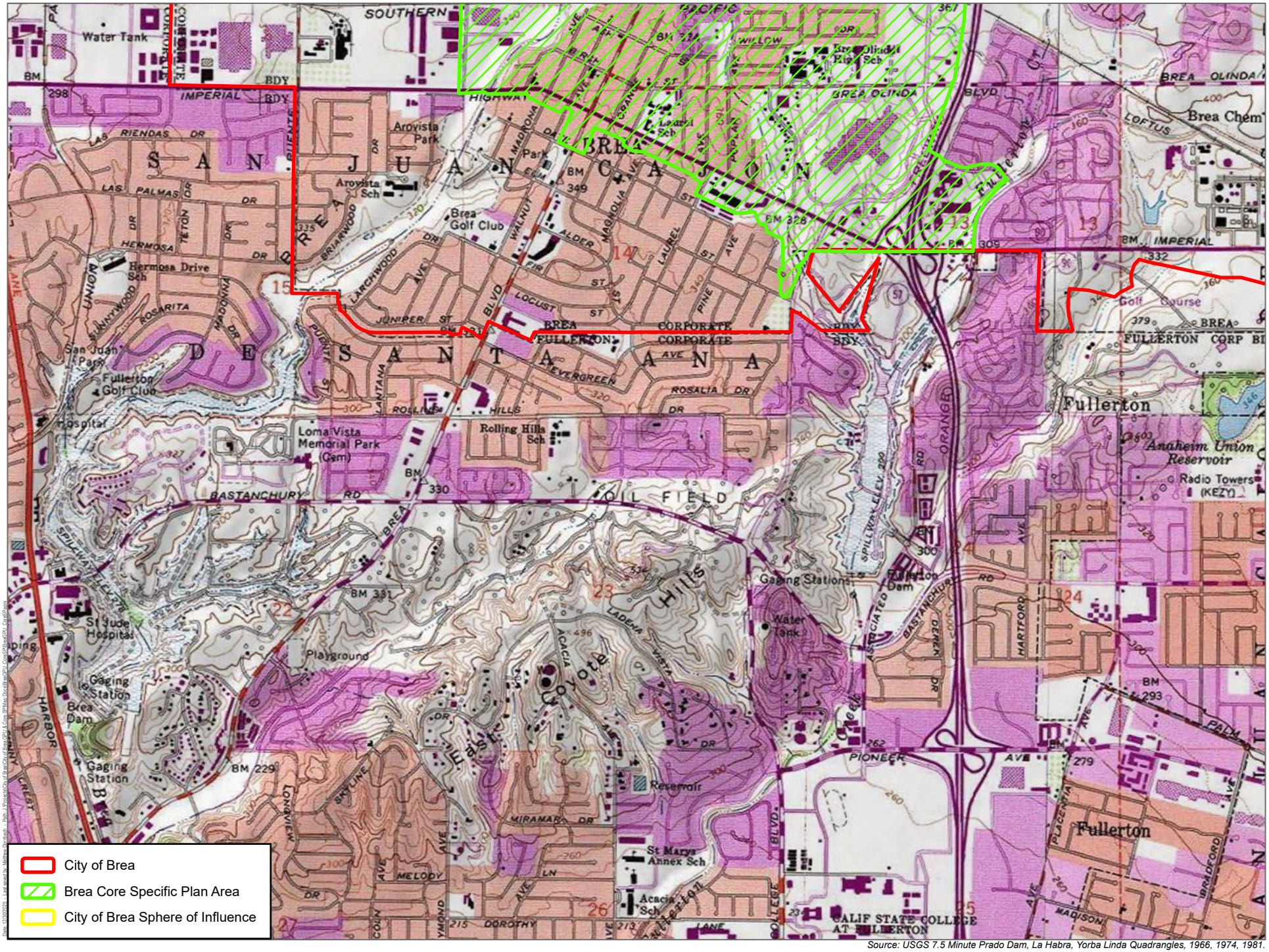


Source: USGS 7.5 Minute Prado Dam, La Habra, Yorba Linda Quadrangles, 1966, 1974, 1981.

Figure 3a

USGS Topographic Map

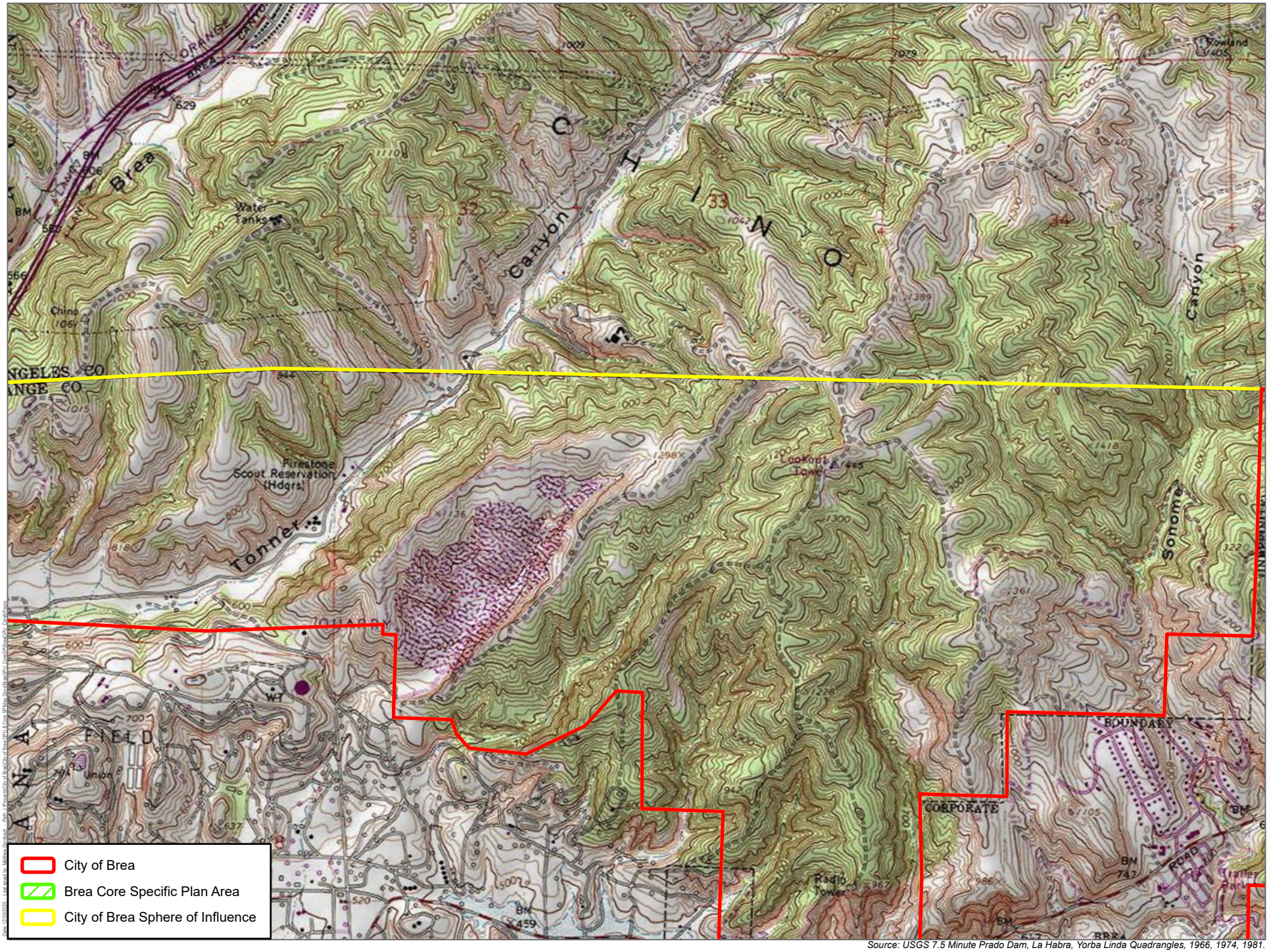
Brea Focused General Plan Update and Brea Core Specific Plan



Source: USGS 7.5 Minute Prado Dam, La Habra, Yorba Linda Quadrangles, 1966, 1974, 1981.

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Figure 3b
USGS Topographic Map
Brea Focused General Plan Update and Brea Core Specific Plan



Source: USGS 7.5 Minute Prado Dam, La Habra, Yorba Linda Quadrangles, 1966, 1974, 1981.

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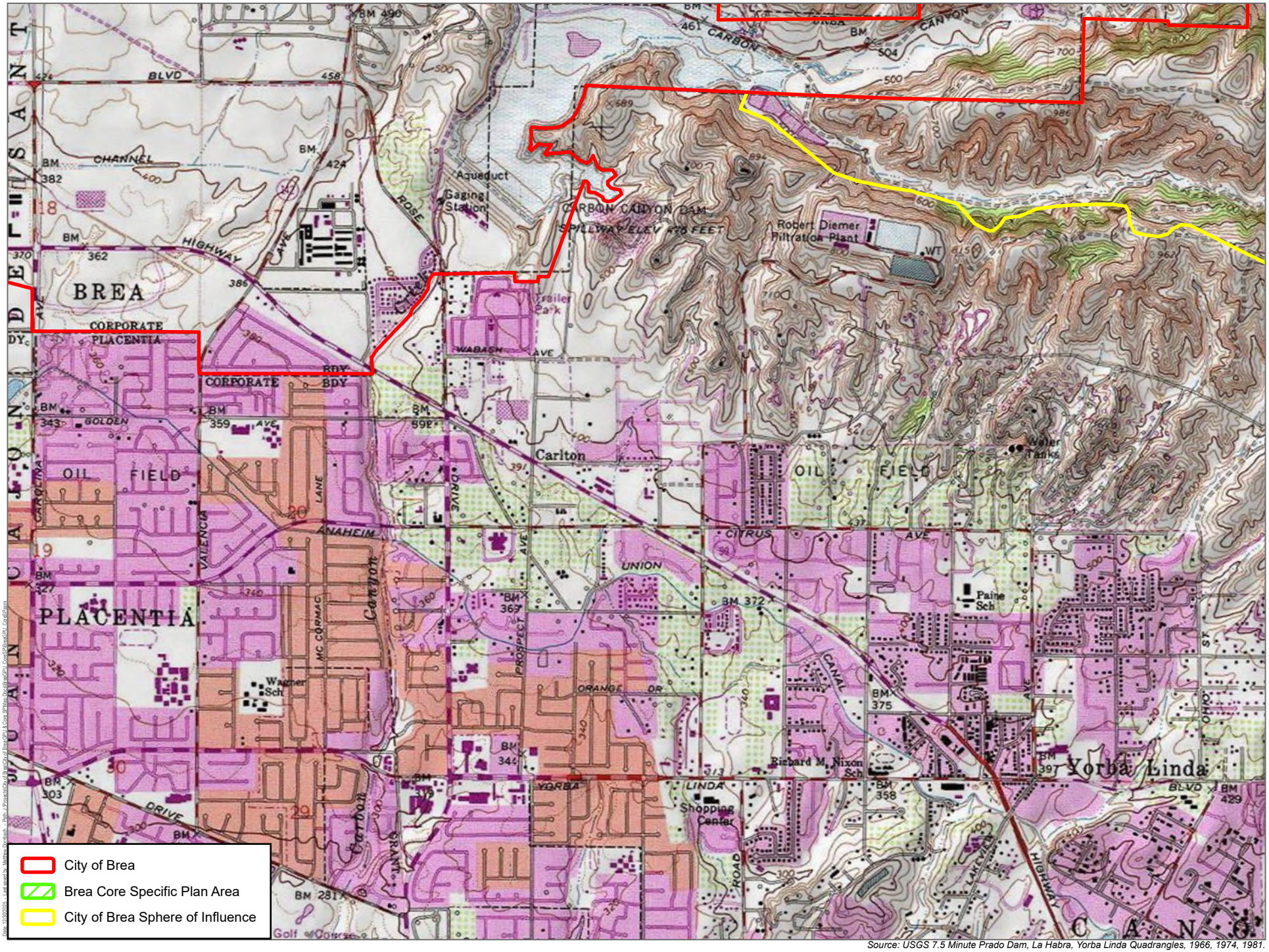
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US Feet

Figure 3c

USGS Topographic Map

Brea Focused General Plan Update and Brea Core Specific Plan



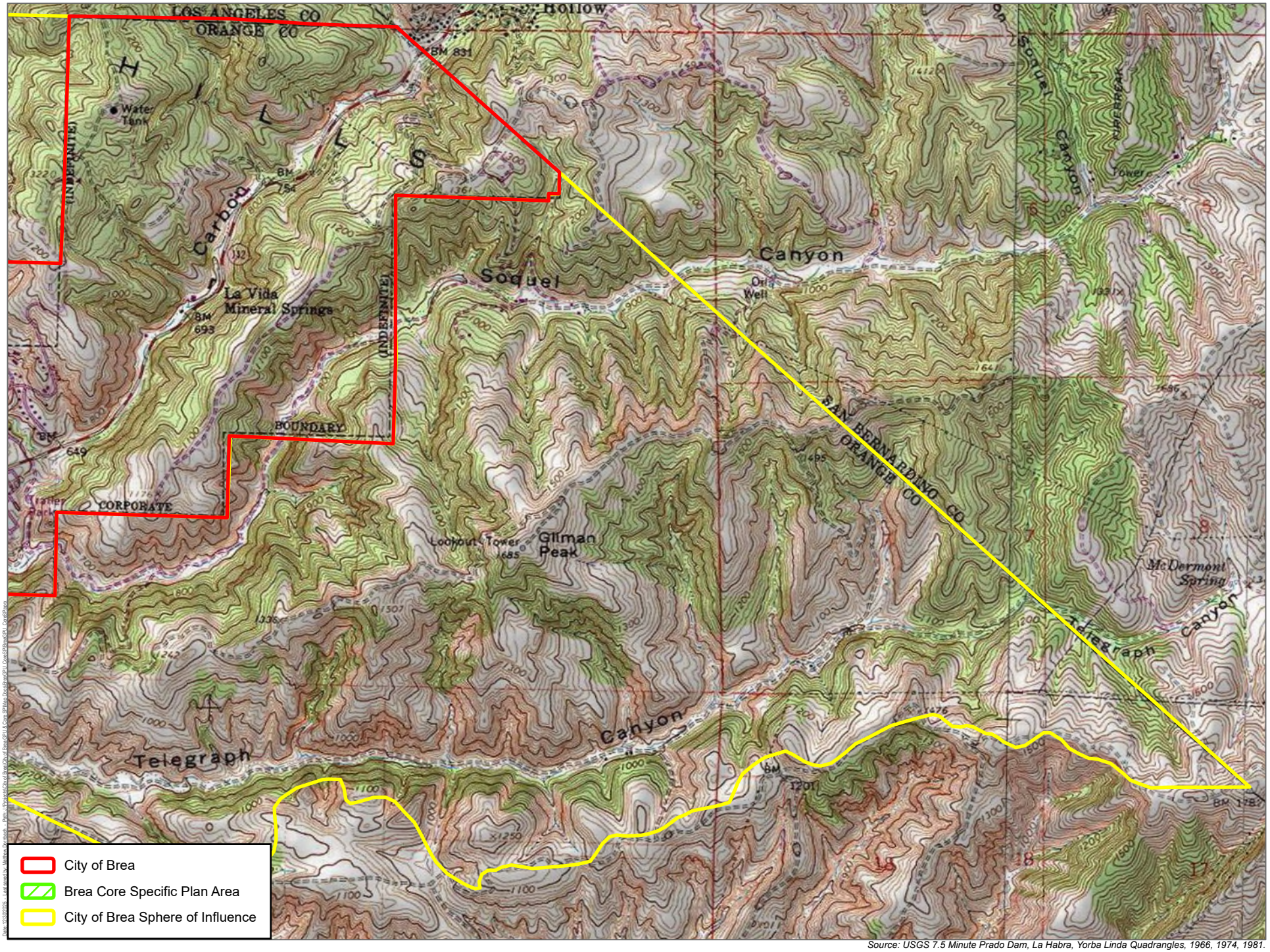
Source: USGS 7.5 Minute Prado Dam, La Habra, Yorba Linda Quadrangles, 1966, 1974, 1981.

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Figure 3d

USGS Topographic Map

Brea Focused General Plan Update and Brea Core Specific Plan



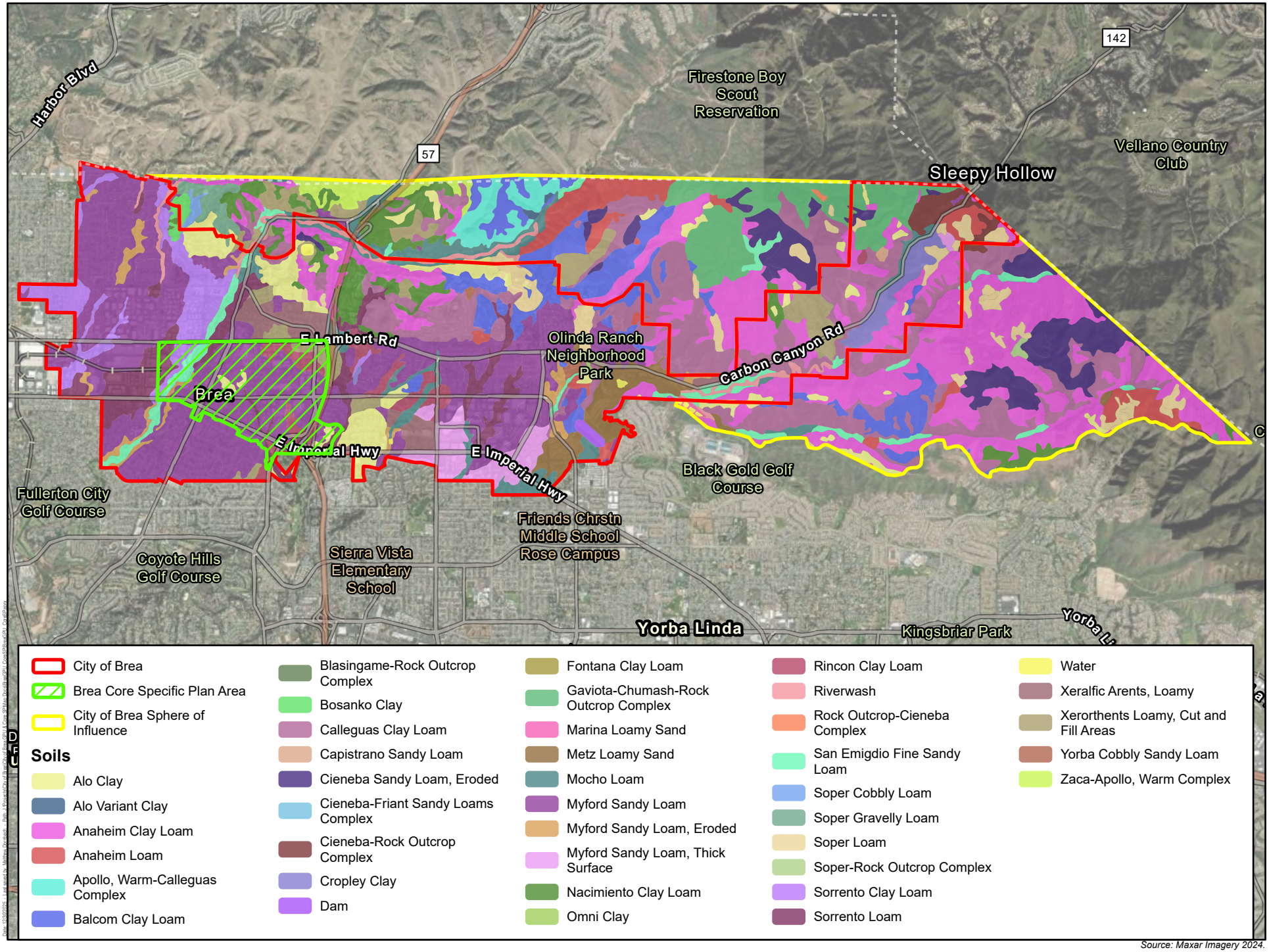
Source: USGS 7.5 Minute Prado Dam, La Habra, Yorba Linda Quadrangles, 1966, 1974, 1981.

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Figure 3e

USGS Topographic Map

Brea Focused General Plan Update and Brea Core Specific Plan



Source: Maxar Imagery 2024.

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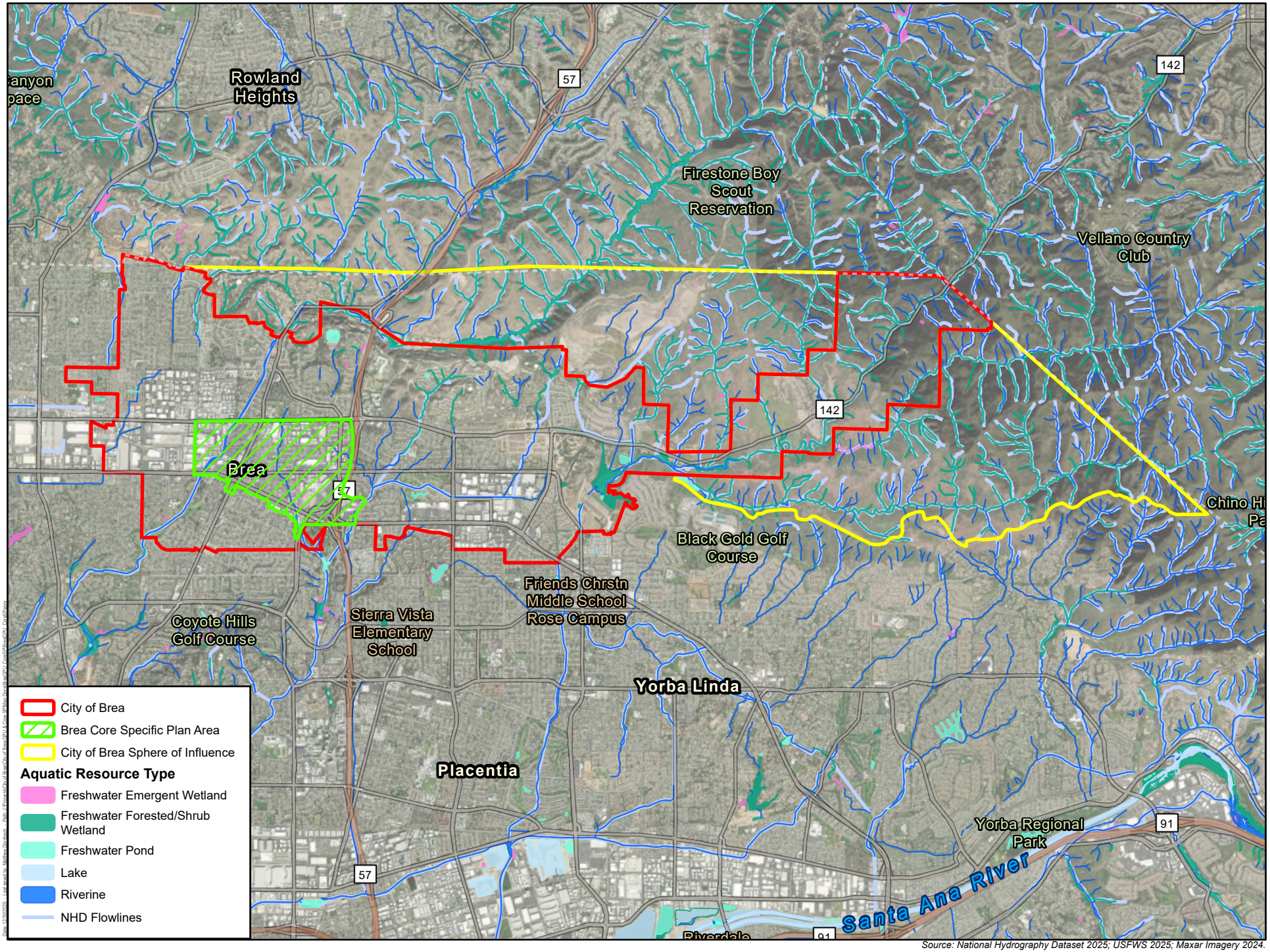
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Miles

Figure 4

Soils



Source: National Hydrography Dataset 2025; USFWS 2025; Maxar Imagery 2024.

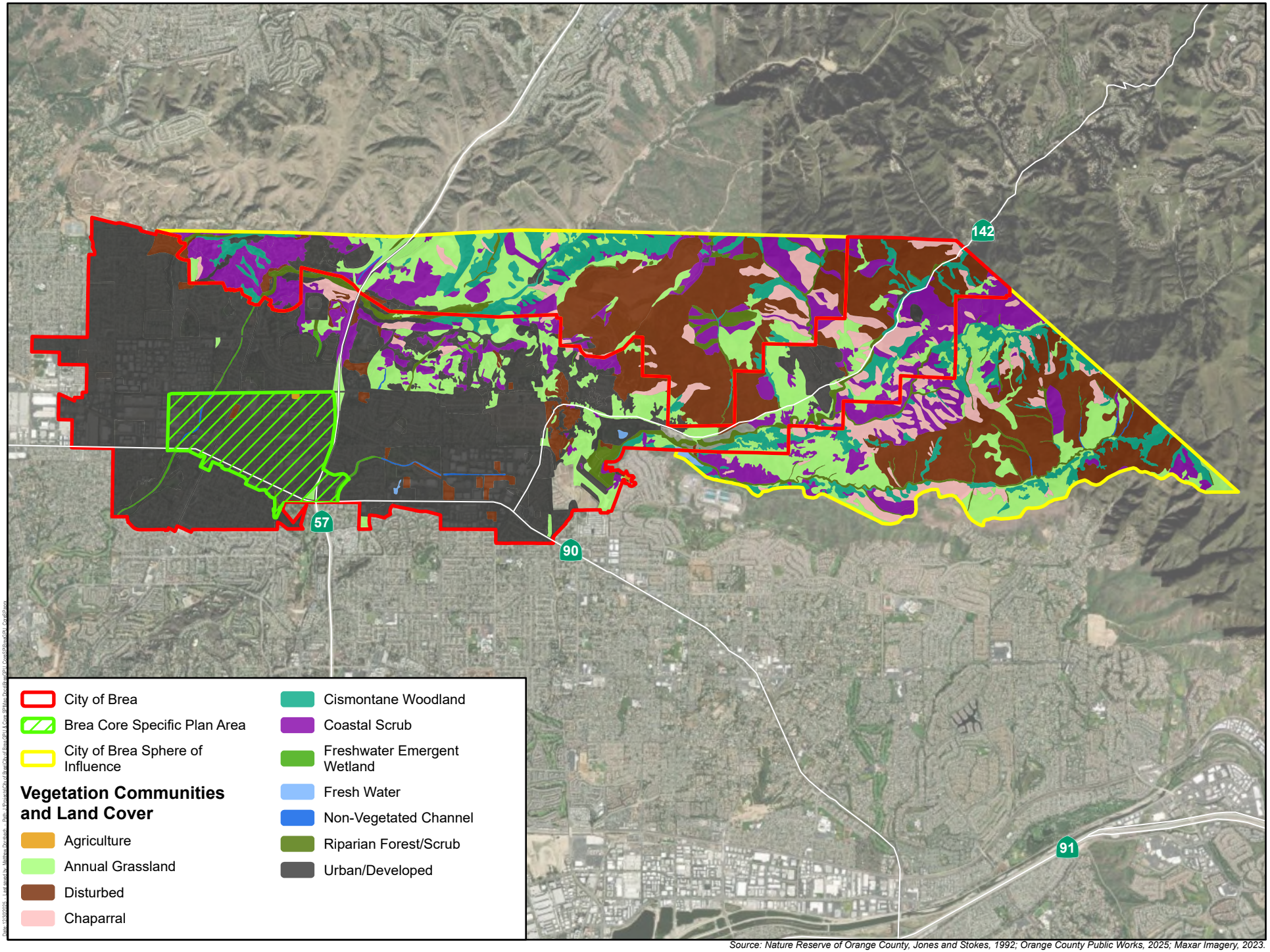
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Figure 5
Hydrology

Brea Focused General Plan Update and Brea Core Specific Plan



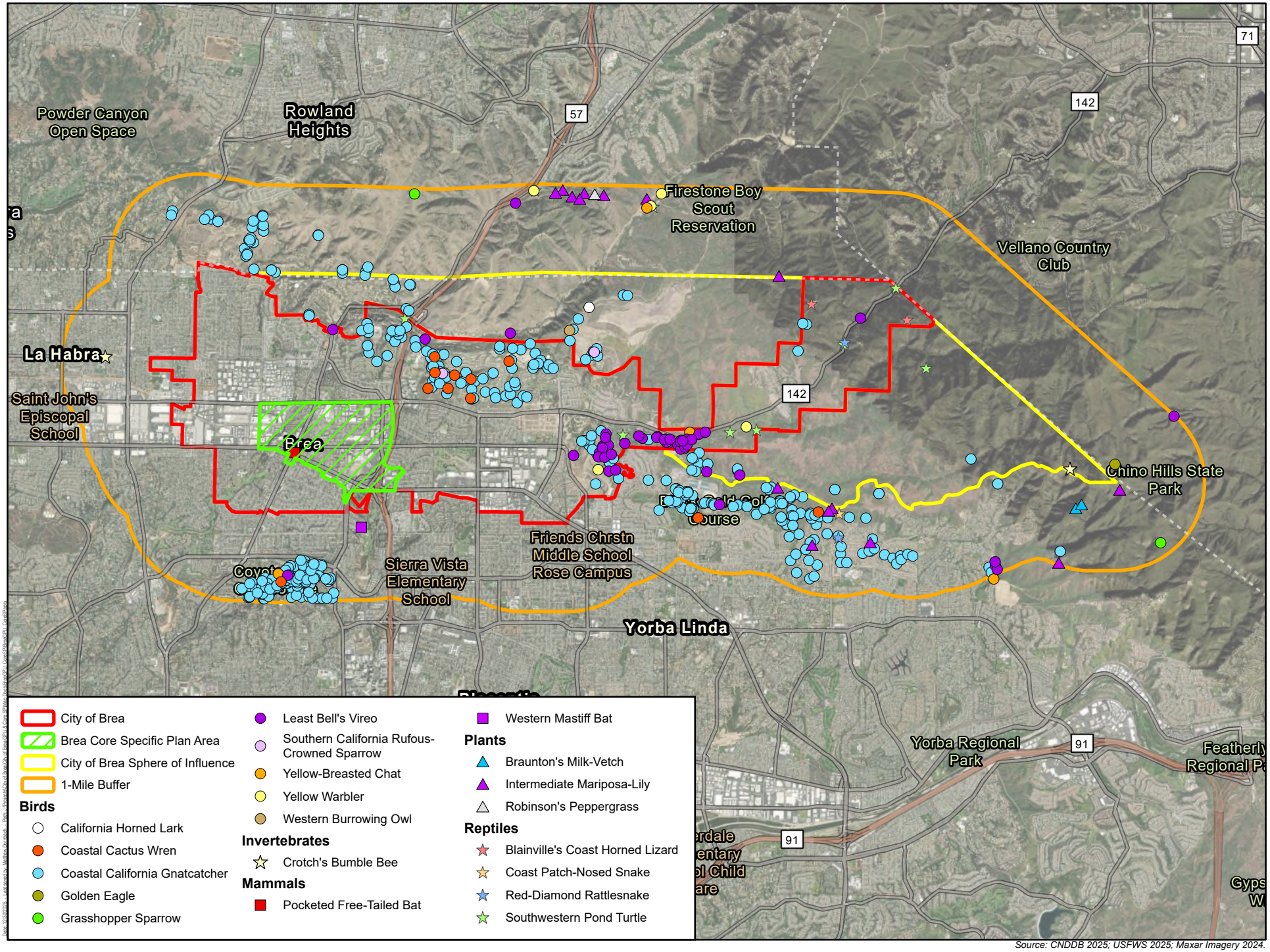
Source: Nature Reserve of Orange County, Jones and Stokes, 1992; Orange County Public Works, 2025; Maxar Imagery, 2023.

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Figure 6
Vegetation Communities and Land Cover Types
Brea Focused General Plan Update and Brea Core Specific Plan



Source: CNDDB 2025; USFWS 2025; Maxar Imagery 2024.

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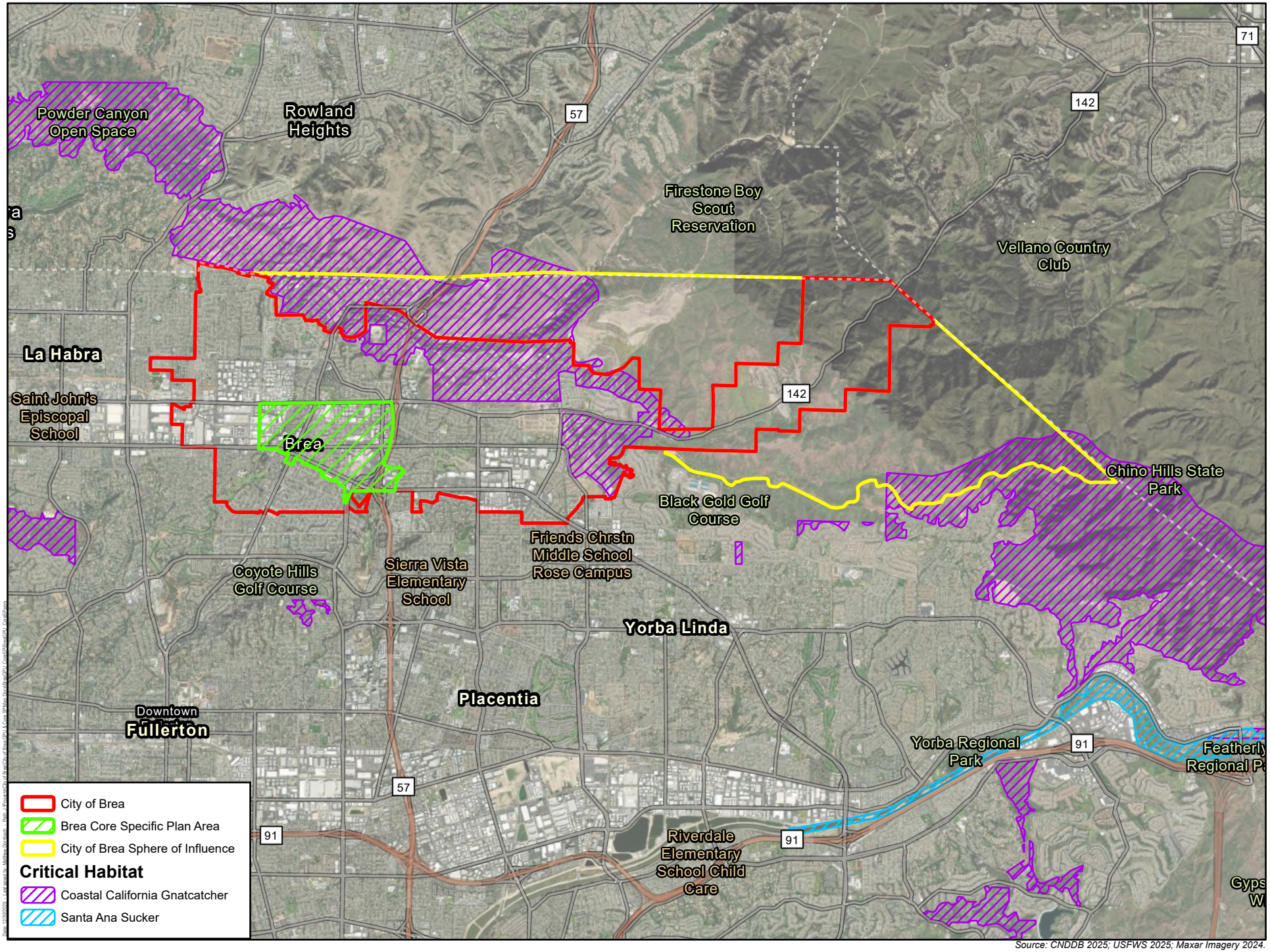
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Miles

Figure 7

Historical Species with Potential to Occur

Brea Focused General Plan Update and Brea Core Specific Plan



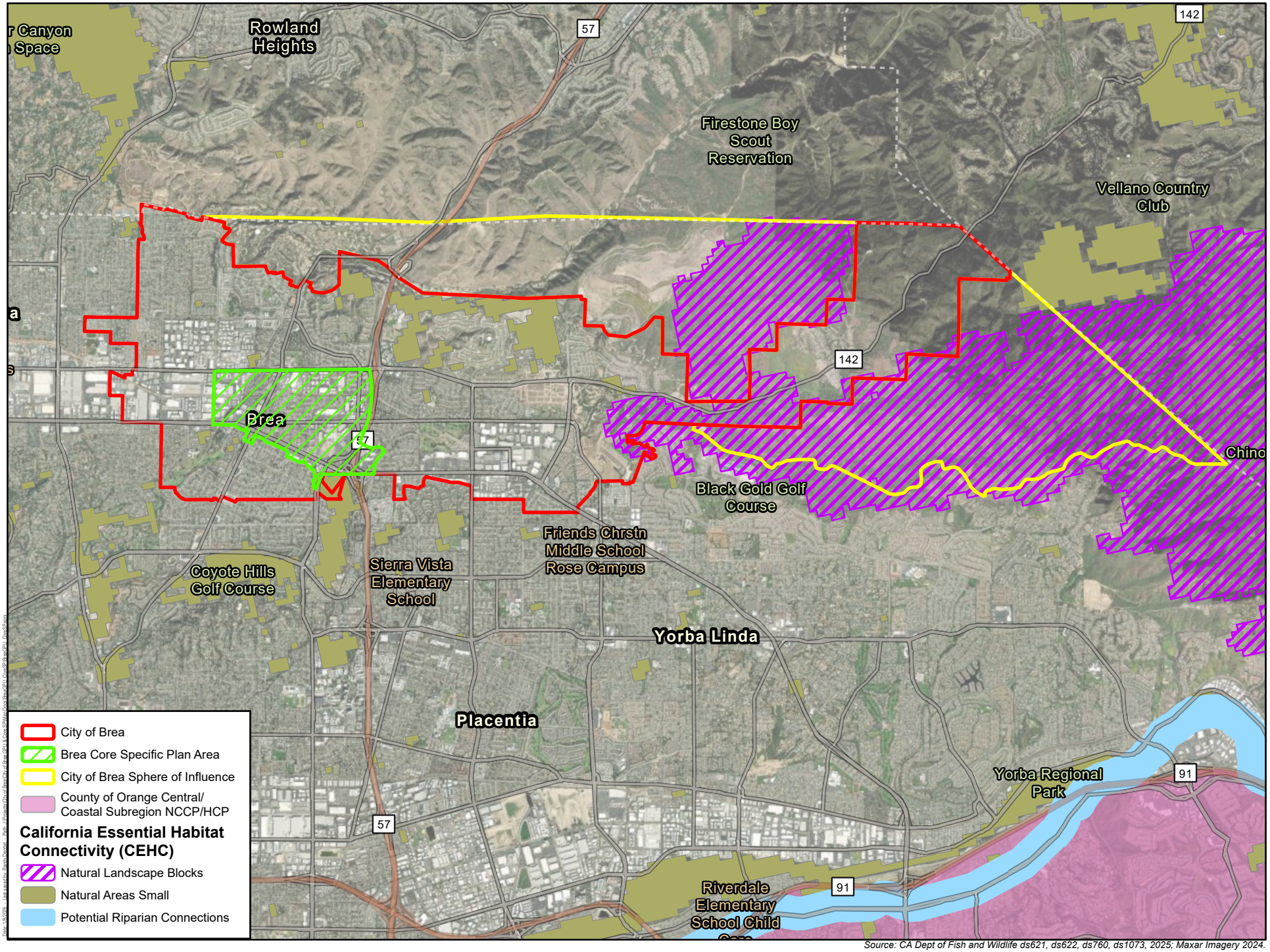
Source: CNDDB 2025; USFWS 2025; Maxar Imagery 2024.

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Miles

Figure 8
Critical Habitat
Brea Focused General Plan Update and Brea Core Specific Plan



Source: CA Dept of Fish and Wildlife ds621, ds622, ds760, ds1073, 2025; Maxar Imagery 2024.

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Figure 9
Wildlife Corridor/NCCPs
Brea Focused General Plan Update and Brea Core Specific Plan

Appendix F1. Cultural Resources Data

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South Central Coastal Information Center
California State University, Fullerton
Department of Anthropology MH-426
800 North State College Boulevard
Fullerton, CA 92834-6846
657.278.5395 / FAX 657.278.5542
sccic@fullerton.edu
California Historical Resources Information System
Orange, Los Angeles, and Ventura Counties

12/23/2025 Records Search File No.: 27551.13697

Donna Beddow
Harris & Associates
2375 Northside Drive, Suite 125
San Diego, CA 92108

Re: Record Search Results for the Brea General Plan Update

The South Central Coastal Information Center received your records search request for the project area(s) referenced above, located on the La Habra, Yorba Linda and Prado Dam, CA USGS 7.5' quadrangle(s). The following reflects the results of the records search for the project area:

As indicated on the data request form, the locations of resources and reports are provided in the following format: ☒ custom GIS maps ☐ shape files ☐ hand-drawn maps

Resources within project area: 69	ATTACHED MAP or LIST
Reports within project area: 102	SEE ATTACHED MAP or LIST

Resource Database Printout (list): ☒ enclosed ☐ not requested ☐ nothing listed
Resource Database Printout (details): ☒ enclosed ☐ not requested ☐ nothing listed
Resource Digital Database (spreadsheet): ☒ enclosed ☐ not requested ☐ nothing listed
Report Database Printout (list): ☒ enclosed ☐ not requested ☐ nothing listed
Report Database Printout (details): ☒ enclosed ☐ not requested ☐ nothing listed
Report Digital Database (spreadsheet): ☒ enclosed ☐ not requested ☐ nothing listed
Resource Record Copies: ☒ enclosed ☐ not requested ☐ nothing listed
Report Copies: ☐ enclosed ☒ not requested ☐ nothing listed
OHP Built Environment Resources Directory (BERD) 2022: ☒ available online; please go to https://ohp.parks.ca.gov/?page_id=30338
Archaeo Determinations of Eligibility 2022: ☒ enclosed ☐ not requested ☐ nothing listed
Los Angeles Historic-Cultural Monuments ☐ enclosed ☐ not requested ☒ nothing listed
Historical Maps: ☐ enclosed ☒ not requested ☐ nothing listed
San Bernardino Historical Maps: ☒ not available at SCCIC; please go to https://ngmdb.usgs.gov/topoview/viewer/#4/39.98/-100.02
Ethnographic Information: ☒ not available at SCCIC
Historical Literature: ☒ not available at SCCIC
GLO and/or Rancho Plat Maps: ☒ not available at SCCIC
Caltrans Bridge Survey: ☒ not available at SCCIC; please go to http://www.dot.ca.gov/hq/structur/strmaint/historic.htm

Shipwreck Inventory: ☒ not available at SCCIC; please go to http://shipwrecks.slc.ca.gov/ShipwrecksDatabase/Shipwrecks_Database.asp
Soil Survey Maps: (see below) ☒ not available at SCCIC; please go to http://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx

Please forward a copy of any resulting reports from this project to the office as soon as possible. Due to the sensitive nature of archaeological site location data, we ask that you do not include resource location maps and resource location descriptions in your report if the report is for public distribution. If you have any questions regarding the results presented herein, please contact the office at the phone number listed above.

The provision of CHRIS Data via this records search response does not in any way constitute public disclosure of records otherwise exempt from disclosure under the California Public Records Act or any other law, including, but not limited to, records related to archeological site information maintained by or on behalf of, or in the possession of, the State of California, Department of Parks and Recreation, State Historic Preservation Officer, Office of Historic Preservation, or the State Historical Resources Commission.

Due to processing delays and other factors, not all of the historical resource reports and resource records that have been submitted to the Office of Historic Preservation are available via this records search. Additional information may be available through the federal, state, and local agencies that produced or paid for historical resource management work in the search area. Additionally, Native American tribes have historical resource information not in the CHRIS Inventory, and you should contact the California Native American Heritage Commission for information on local/regional tribal contacts.

Should you require any additional information for the above referenced project, reference the record search number listed above when making inquiries. Requests made after initial invoicing will result in the preparation of a separate invoice.

Thank you for using the California Historical Resources Information System,

Isabela Kott

Digitally signed by Isabela Kott
Date: 2025.12.23 17:12:22 -08'00'

Isabela Kott
Assistant Coordinator, GIS Program Specialist

Enclosures:

(X) Custom Maps – 10 pages
(X) Resource Database Printout (list) – 5 pages
(X) Resource Database Printout (details) – 78 pages
(X) Resource Digital Database (spreadsheet) – 69 lines
(X) Report Database Printout (list) – 11 pages
(X) Report Database Printout (details) – 105 pages
(X) Report Digital Database (spreadsheet) – 102 lines
(X) Resource Record Copies – (all) 465 pages
(X) Archaeological Determinations of Eligibility (2022) – 1 line
(X) National Register Status Codes – 1 page

Report List

Report No.	Other IDs	Year	Author(s)	Title	Affiliation	Resources
OR-00015		1975	Rozaire, Charles E.	Archaeological Investigations for Environmental Study Report of Bandera Estates Mobile Home Park in Brea, Orange County, California		
OR-00024		1974	Clewlow, William C. Jr.	Evaluation of the Archaeological Resources and Potential Impact of Proposed Improvement of the 30 Mg Central Reservoir and Pumping Station, and Industrial Area, City of Brea	UCAS	
OR-00182		1977	Desautels, Roger J.	Archaeological Survey Report on the Proposed Carbon Canyon Wastewater Facility and Attendant Pipelines	Scientific Resource Surveys, Inc.	
OR-00213		1978	Cottrell, Marie G.	An Archaeological Survey on a Parcel of Land in Soquel Canyon in Orange County	Archaeological Resource Management Corp.	
OR-00266	Paleo -	1978	Anonymous	Archaeological/paleontological Survey Report on Approximately 482 Acres of Land Located in the Yorba Linda Area of the County of Orange	Scientific Resource Surveys, Inc.	
OR-00318		1979	Pence, Robert L.	Archaeological Assessment of the Proposed Brea-fedco Project, City of Brea, Orange County, California		
OR-00468		1979	Desautels, Roger J.	Archaeological Test Report (ORA-848) on a Portion of Tentative Tract 10731 Located in Yorba Linda	Scientific Resource Surveys, Inc.	30-000848
OR-00474		1977	Martz, Patricia	Description and Evaluation of the Cultural Resources Within Brea, Carbon Canyon, Fullerton and San Antonio Reservoirs, Santa Ana River Basin, Orange, Los Angeles, and San Bernadino Counties	University of California, Riverside	30-120001, 30-120002, 30-120003
OR-00476		1979	Mabry, Theo N.	Cultural Resources Records Search and Reconnaissance Olinda Disposal Station Off-Road Vehicle Park, Orange County	Archaeological Planning Collaborative	
OR-00497		1979	Brown, Roderick S.	Archaeological Survey of Property in Brea	Chambers Consultants and Planners	30-000796
OR-00507		1980	Brown, Rod	Archaeological Survey Letter to Connie Cameron	Chambers Group, Inc.	
OR-00593		1981	Sawyer, William A. and Van Horn, David M.	Archaeological Survey Report: A Portion of the Proposed Carbon Canyon Residential Development Project in the City of Brea, County of Orange, California	Archaeological Associates, LTD.	

Report List

Report No.	Other IDs	Year	Author(s)	Title	Affiliation	Resources
OR-00692		1983	Cottrell, Marie G.	Archaeological Resources Assessment Concucted for the Carbon Canyon Specific Plan Study, City of Brea Orange County, California	Archaeological Resource Management Corp.	
OR-00816	Paleo -	1986	Padon, Beth	An Archaeological and Paleontological Assessment of the Moreland Stearns Lease Annexation Parcel 1 & 2 Orange County, California.		
OR-00882		1977	Stickel, E. Gary	A Cultural Resource Survey of the Proposed Lake Park Brea Project, City of Brea, California		
OR-00916		1988	Brown, Robert S. and Cottrell, Marie G.	Archaeological Survey and Records Search for a Twenty-five Acre Parcel Adjacent to the Imperial Golf Course City of Fullerton, California	Archaeological Resource Management Corp.	
OR-01055		1990	Bissell, Ronald M.	Cultural Resources Reconnaissance of the Downtown Brea Master Plan Study Area, Brea, Orange County, California	RMW Paleo Associates, Inc.	
OR-01089		1991	Bissell, Ronald M. and Kenneth Becker	Addendum to Cultural Resources Reconnaissance of the Proposed North Orange County Landfill Alternative Technologies Study (noclats) Landfill Property, Approximately 2,700 Acres in Orange County, California	RMW Paleo Associates, Inc.	30-001272, 30-001277, 30-100441
OR-01106		1990	Brown, Joan C.	Cultural Resources Reconnaissance of the Proposed North Orange County Landfill Alternative Technologies Study (noclats) Landfill Property, Approximately 2,700 Acres in Orange County, California	RMW Paleo Associates, Inc.	30-000319, 30-000320, 30-001277, 30-001280, 30-001281, 30-001282, 30-001283, 30-001284, 30-001285, 30-001286, 30-001287, 30-001288, 30-001289, 30-001290, 30-001291
OR-01134		1976	Stickel, Gary E.	A Cultural Resources Report (Prehistoric and Historic Resources) of a Tract of Land, City of Brea, California.		
OR-01159		1984	McGuire, Pamela J. and Evans, Nancy	Inventory of Features Cultural Resources Chino Hills State Park	Cultural Heritage Planning	
OR-01184		1992	Becker, Kenneth M. and Juanita R. Shinn	Report on the Investigations at the "Landa House," an Early Twentieth Century Basque Sheepherder's House Near the City of Brea, Orange County, California		30-176487

Report List

Report No.	Other IDs	Year	Author(s)	Title	Affiliation	Resources
OR-01199		1992	Mason, Roger D.	Cultural Resources Survey Report for the Santa Fe Energy Company Olinda Property Orange County, California	The Keith Companies Archaeological Division	30-001321, 30-001322, 30-001323
OR-01210		1992	Bissell, Ronald M.	Cultural Resources Reconnaissance of the Shell Oil Property and Test Excavation of a Rockshelter Near the City of Yorba Linda, Orange County, California	RMW Paleo Associates, Inc.	
OR-01291		1993	Elliot, John F. and James Brock	A Cultural Resources Assessment for the Imperial Highway Project, Orange County, California	Archaeological Advisory Group	30-000796, 30-177614
OR-01427		1995	Owen, Shelly M.	Cultural Resources Survey and Impact Assessment for the Cajon/eptc Pipeline Project Located in Portions of Los Angeles, San Bernardino and Orange Counties, California	EIP Associates, Inc.	
OR-01479		1994	White, Robert S.	Birch Hills Specifics Plan, City of Brea, County of Orange	Archaeological Associates, Ltd.	
OR-01480		1994	White, Robert S. and Laura S. White	An Archaeological Assessment of the Olinda/olinda Alpha Landfill Alternative Access Routes, Brea, County of Orange	Archaeological Associates, Ltd.	
OR-01494		1947	Walker, Edwin Francis	Report of Preliminary Archaeological Survey Carbon Canyon, Olinda Dam Site, Southern California	The Southwest Museum	
OR-01636			Heumann, Leslie and Christy McAvoy	Request for Determination of Eligibility for Inclusion in the National Register of Historic Places	Larry Seeman Associates, Inc.	30-150063
OR-01719		1998	McLean, Deborah K.	Archaeological Assessment for Pacific Bell Mobile Services Telecommunications Facility CM 314-01, 300 East Imperial Highway, City of Brea, County of Orange, California	LSA Associates, Inc.	
OR-01772		1998	Brechbiel, Brant A.	Cultural Resources Records Search and Literature Review Report for a Pacific Bell Moblie Services Telecommunications Facility: Cm 143-11, in the City of Brea, California	Chambers Group, Inc.	
OR-01779	Cellular -	1998	Brechbiel, Brant A.	Cultural Resources Records Search and Literature Review Report for a Pacific Bell Moblie Services Telecommunications Facility: Cm 313-05 in the City of Brea, California	Chambers Group, Inc.	

Report List

Report No.	Other IDs	Year	Author(s)	Title	Affiliation	Resources
OR-01780	Cellular -	1998	Mason, Roger D.	Cultural Resources Survey Report for a Pacific Bell Moblie Services Telecommunications Facility: Cm 084-11 Near Brea, Orange County, California	Chambers Group, Inc.	
OR-01837	Paleo -	1989	Whitney-Desautels, Nancy A.	Final Report Cultural and Paleontological Resources Investigation of the Tonner Canyon Channel Facility	Scientific Resource Surveys, Inc.	
OR-01875		1998	McKenna, Jeanette A.	Artifact Analysis: Historic Artifacts Recovered From the Olinda Site, CA-ORA-1323h, Orange County, California	McKenna et al.	30-001323
OR-01879		1985	Padon, Beth	Historic Property Survey Report for the Proposed Imperial Highway Widening City of Brea, CA Route 90, P.M. 4.0-5.1, Ea-013490	LSA Associates, Inc.	
OR-01886		1985	Unknown	Request for Determination of Effect Report	LSA Associates, Inc.	
OR-01994		1998	White, Robert S. and Laurie S. White	A Cultural Resources Assessment of the Lambert Road/Carbon Canyon Road Improvement Project, City of Brea and Unincorporated County of Orange	Archaeological Associates, Ltd.	
OR-02069		1999	Maxon, Patrick O.	Cultural Resources Reconnaissance of the 732 Acre Canyon Crest Project, Along a Portion of Carbon Canyon Road, Orange County, California	RMW Paleo Associates, Inc.	
OR-02114		1978	Pence, Robert L.	Archaeological Assessment of the Brea Raintree Project, City of Brea, Orange County, California	Pence Archaeological Consulting	
OR-02115		1978	Pence, Robert L.	Archaeological Assessment of the Brea Dyer-Johnson Project, City of Brea, Orange County, California	Pence Archaeological Consulting	
OR-02117		2000	Lapin, Philippe	Cultural Resource Assessment for Pacific Bell Mobile Services Facility Cm 422-01, County of Orange, California	LSA Associates, Inc.	
OR-02118		2000	Lapin, Philippe	Cultural Resource Assessment for Pacific Bell Mobile Services Facility Cm 424-01, Located in the City of Brea, Orange County, California	LSA Associates, Inc.	
OR-02119		1980	Brown, Rod	Archaeological Survey in the City of Brea	Chambers Consultants and Planners	

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Report No.	Other IDs	Year	Author(s)	Title	Affiliation	Resources
OR-02209		2001	Storey, Noelle	Cultural Resources Investigation for the Yorba Linda Feeder Project, Chino Hills State Park, Orange County, CA	Jones & Stokes	30-001101, 30-001322, 30-001323, 30-001494, 30-120001, 30-120002, 30-120003
OR-02256		1999	Demcak, Carol R.	Cultural Resources Assessments for Orange County Sanitation Districts	Archaeological Resource Management Corp.	30-000083, 30-000084, 30-000085, 30-000086, 30-000087, 30-000144, 30-000277, 30-000288, 30-000289, 30-000300, 30-000352, 30-000353, 30-000381, 30-001352
OR-02276		2000	Maxon, Patrick O. and Jason Miller	Archaeological Monitoring for the Carbon Canyon Water Tank Reconstruction, City of Brea, Orange County, California	RMW Paleo Associates, Inc.	30-001011, 30-001321
OR-02279		1999	Kyle, Carolyn E.	Cultural Resource Survey for the Metropolitan Water District of Southern California Robert B. Diemer Filtration Plant Improvement Orange County, California	Kyle Consulting	
OR-02300		2000	Romani, Gwendolyn R.	Archaeological Survey Report: Los Angeles-San Diego Fiber Optic Project: Mesa Substation to Chino Hills State Park Segment	Compass Rose Archaeological, Inc.	30-000614
OR-02366		2000	Demcak, Carol R.	Report of Phase 1 Archaeological Assessment for Proposed Tomlinson Park Project, City of Brea, Orange County, California	Archaeological Resource Management Corp.	
OR-02460	Cellular -	2002	Duke, Curt	Cultural Resource Assessment Cingular Wireless Facility No. Sc 045-02 Orange County, California	LSA Associates, Inc.	
OR-02524	Cellular -	2002	Duke, Curt	Cultural Resource Assessment At&t Wireless Services Facility No.c872c Los Angeles County, California	LSA Associates, Inc.	
OR-02525		2000	Minch, John A.	Archaeological Mitigation Monitoring Report Vista Verde Tentative Tract 15572 Shell/Toll Yorba Linda, County of Orange, California	John Minch & Associates, Inc.	
OR-02540		2002	Duke, Curt	Cultural Resource Assessment at & T Wireless Services Facility No. 13057d Orange County, California	LSA Associates, Inc.	
OR-02789	Cellular -	2001	Bonner, Wayne H.	Records Search Results for Sprint PCS Facility OG33XC331A (Pole Number 2319557E), 5971 Carbon Cyn. Road, Brea, Orange County, California	Michael Brandman Associates	

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Report No.	Other IDs	Year	Author(s)	Title	Affiliation	Resources
OR-02790	Cellular -	2001	Bonner, Wayne H.	Records Search Results for Sprint Pcs Facility Og33xc334a, 7302 Carbon Canyon Rd., Orange County, California	Michael Brandman Associates	
OR-02791	Cellular -	2001	Bonner, Wayne H.	Records Search Results for Sprint Pcs Facility Og33xc333a, 6999 Carbon Canyon Rd., Brea, Orange County, California	Michael Brandman Associates	
OR-02792	Cellular -	2001	Bonner, Wayne H.	Records Search Results for Sprint Pcs Facility Og33xc332a, 6199 Carbon Canyon Rd., Brea, Orange County, California	Michael Brandman Associates	
OR-02797		2001	Wallock, Nicole	Cultural Resource Assessment Cingular Wireless Facility No. Cm 424-02 Orange County, California	LSA Associates, Inc.	
OR-02798		2002	Christy, Juliet L.	Highway Project on Imperial Highway Between Arovista Avenue and Puente Street, City of Brea		
OR-02801		2002	Demcak, Carol R.	Phase I Archaeological Re-survey for Proposed Tomlinson Park Project, City of Brea, Orange County, California	Archaeological Reosurce Management Corporation	
OR-02807		2002	Duke, Curt	Cultural Resource Assessment AT&T Wireless Services Facility No. 13057c Orange County, California	LSA Associates, Inc.	
OR-02813		2002	Duke, Curt	Cultural Resource Assessment AT&T Wireless Services Facility No. 13068b Orange County, California	LSA Associates, Inc.	
OR-02884		1997	Brechbiel, Brant A., Roger D. Mason, and Richard Cerreto	Cultural Resources Survey Report for the Stearns Property City of Brea, Orange County	Chambers Group, Inc.	30-001483
OR-03044		2004	Shepard, Richard S.	Enhancements to Approximately 3,780 Feet (0.72 Mile) of Brea Boulevard Located in the City of Brea in Northern Orange County, California	BonTerra Consulting	
OR-03213		2005	Girod, Catherine	Archaeological Reconnaissance Report: Tonner Hills ExxonMobil Pipeline Relocation Project Located Within the Lambert Road ROW, Between Kraemer Boulevard and Valencia Avenue, City of Brea, Orange County, California	Compass Rose Archaeological, Inc.	30-001483
OR-03220		2004	McLean, Roderic and Deborah K.B. McLean	Cultural Resource Assessment for the Olinda Alpha Landfill Expansion, Orange County, California	LSA Associates, Inc.	

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Report No.	Other IDs	Year	Author(s)	Title	Affiliation	Resources
OR-03221		2004	Sikes, Nancy E.	Cultural Resources Literature Review and Monitoring for Hartley Center-North, City of Brea, Orange County, California	SWCA Environmental Consultants, Inc.	
OR-03223		1999	Mason, Roger D., Bonner, Wayne H., Martin, Steve L., Popper, Virginia S., Gibson, Robert O., Cerreto, Richard, Russell, Glenn S., and Shackley, M. Steven	Cultural Resources Test and Data Recovery Report CA-ORA-1321 Olinda Heights Project, Brea, Orange County, California	Chambers Group, Inc.	30-001321
OR-03225		2003	Younger, Shannon, Brooks Smith, William Sawyer, and Kevin Buffington	Results of Archaeological Monitoring Robert B. Diemer Filtration Plant Improvement Project, Carbon Canyon And Telegraph Creeks Chino Hills State Park Orange County, California	LSA Associates, Inc.	
OR-03227		1998	Brechbiel, Brant A. and Mason, Roger D.	Cultural Resources Test Report CA-ORA1322/H and CA-ORA-1323H Olinda Heights Project Brea, Orange County, California	Chambers Group, Inc.	30-001321, 30-001322, 30-001323, 30-001494
OR-03279		2000	Ashkar, Shahira	Cultural Resources Inventory of Four Proposed Sites for the Brea Sports Park, Orange County, California	Jones & Stokes	30-001664, 30-001665, 30-001666
OR-03389	Cellular -	2007	Bonner, Wayne H.	Cultural Resources Records Search and Site Visit Results for Royal Street Communications, LLC Candidate La0851b (Brea Olinda HS), 789 Wildcat Way, Brea, Orange County, California	Michael Brandman Associates	
OR-03394		2003	Shepard, Richard S.	Negative Archaeological Survey Report: Improvements to the Intersection of Imperial Hwy (state Route 90) and Associated Rd. Located Partially in the City of Brea and Partially in the City of Fullerton, Northern Orange County	Caltrans	
OR-03395		2004	Brown, Joan C. and Matthew Tennyson	Archaeological Monitoring and Historic Trash Recovery During Grading for the Tomlinson Park Development, Located in the City of Brea, Orange County, California	SWCA Environmental Consultants, Inc.	

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Report No.	Other IDs	Year	Author(s)	Title	Affiliation	Resources
OR-03511		2003	Ahmet, Koral	SRI Technical Report 03-53: Archaeological Survey of Pipelines; Interim Solids Handling at the Robert B. Diemer Filtration Plan, Yorba Linda, Orange County, California (Agreement No. 35309, Task No. DW-1, Work Order No. 103336)	Statistical Research, Inc.	
OR-03546		2009	Chandler, Evelyn N., Cary D. Cotterman, Jennifer M. Howard, and Melanie D. Knypstra	Cultural Resources Inventory of Proposed Pole Replacement in the City of Brea, Orange County, California	ECORP Consulting, Inc.	
OR-03711		2000	Ashkar, Shahira	California Register of Historical Resources Evaluation of Oil Well on the Stearns Property in the Sphere of Influence of the City of Brea, Orange County, California	Jones & Stokes	30-177012
OR-03730		2002	Dahdul, Mariam	Reinstatement of Carbon Canyon Dam Sewer And Pump Station Abandonment Project	CRM Tech	30-120002
OR-03734		1999	Duke, Curt	Cultural Resource Assessment for AT&T Wireless Services Facility C572, County of Orange, California	LSA	
OR-03777		2009	Unknown	Confidential Cultural Resources Specialist Report for the Tehachapi Renewal Transmission Project	Applied Earthworks, Inc. and Aspen Environmental Group	19-000806, 19-001128, 19-001299, 19-001300, 19-001315, 19-001357, 19-001382, 19-001636, 19-001770, 19-001771, 19-001783, 19-001956, 19-001957, 19-002206, 19-002212, 19-002343, 19-002350, 19-002363, 19-002411, 19-002412, 19-002998, 19-003009, 19-003018, 19-003025, 19-003031, 19-003032, 19-003037, 19-003090, 19-003099, 19-003136, 19-003152, 19-003295, 19-003385, 19-003477, 19-003606, 19-003638, 19-003795, 19-003852, 19-003853, 19-003854, 19-100277, 19-100439, 19-100496, 19-100644, 19-120031, 19-120032, 19-120072, 19-120074, 19-180689, 19-186545, 19-186860, 19-186870, 19-186871, 19-186872, 19-186873, 19-186875, 19-186876, 19-186877, 19-186917, 19-186921, 19-186923, 19-186925, 19-187713

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Report No.	Other IDs	Year	Author(s)	Title	Affiliation	Resources
OR-03785		2009	Bonner, Wayne	Cultural Resources Records Search and Site Visit Results for T-Mobile USA Candidate LA33970A (Brea Veterans Club), 735 South Brea Boulevard, Brea, Orange County, California	MBA	
OR-03822		2006	Harper, Caprice	Historic Property Survey Report and Archaeological Survey Report for the State Route 57 Northbound Widening Project 0.3 km (02 mi) South of Orangethorpe Avenue to 0.2 km (0.1 mi) North of Lambert Road in the Cities of Placentia, Fullerton, and Brea, Orange County, CA.	Bonterra Counsulting	30-001010, 30-100012, 30-100013, 30-150063, 30-157297, 30-176590, 30-176663, 30-176705, 30-176706, 30-176707, 30-176749
OR-03823		2006	O'Neil, Stephen	Cultural Resources Reconnaissance Survey for the Birch Hills Golf Course/ La Floresta Development Project, City of Brea, Orange County, California	SWCA Environmental Consultants	
OR-03888		2010	Dietler, John, Clarus Backes, and Charles Cisneros	Archaeological Monitoring for the Tonner Hills Pa 7 Project, City of Brea, Orange County, California	SWCA Environmental Consultants	
OR-03911		2010	Backes, Clarus, John Dietler, Laura Hoffman, Joan Brown, and Virginia Austerman	Archaeological Monitoring for the Tonner Hills Project Located in Brea, Orange County, California	SWCA Environmental Consultants	30-001483, 30-001620, 30-001621, 30-001622, 30-001623, 30-001624, 30-001625, 30-001626, 30-001627, 30-001690, 30-001691, 30-001692, 30-001693, 30-001694, 30-001695, 30-001696, 30-001697, 30-100122, 30-100123, 30-176487, 30-177011, 30-177012
OR-03912		1989	Brown, Joan C.	Cultural Resources Reconnaissance of the 600 Acre Stearns - Unocal Project Area, California	RMW Paleo Associates	30-001483, 30-001620, 30-001697, 30-100122, 30-100123, 30-176487, 30-177011, 30-177012
OR-03970		2007	Kahan, Howard	Request for Consultation under Section 106 of the National Historic Preservation Act (NHPA) for the City of Brea West Bank Sewer Line Replacement, EPA Grant #XP-96937601-2	United States Environmental Protection Agency	
OR-03980		2007	Killeen, John	Cultural Resources Investigation for the Carbon Canyon Dam Sewer Pipeline Project, City of Brea, Orange County, California	U.S. Army Corps of Engineers	30-120002
OR-04063		2009	Freitag, Kevin	"Lambert CA 1" 16802 Carbon Canyon Road, Brea, Orange County, California - Site No.301169 IVI Project No. TS90810074	IVI Telecom Services, Inc.	30-001322, 30-001323, 30-001324, 30-001666, 30-120001, 30-120002

Report List

Report No.	Other IDs	Year	Author(s)	Title	Affiliation	Resources
OR-04073		2010	Bonner, Diane F. and Robert J. Woldarski	Cultural Resources Record Search and Archaeological Survey Results for the Proposed Clear Wireless, LLC, Site CA-ORC1573 (Arovista Park) located at 500 West Imperial Highway, Brea, Orange County, California, 92821	Historical, Environmental, Archaeological, Research, Team	
OR-04104		2002	Antram, Marie, Orr, Shannon, Vasquez, Liliana, L. de Graf, and Jertberg, Pat	Historic Resource Inventory for the City of Placentia: Update 2002	City of Placentia and Placentia Historical Committee	30-157208, 30-160084, 30-160085, 30-162291, 30-162555, 30-176705, 30-176707, 30-176749, 30-177066, 30-177080, 30-177081, 30-177082, 30-177083, 30-177084, 30-177085, 30-177086, 30-177087, 30-177088, 30-177089, 30-177090, 30-177091, 30-177092, 30-177093, 30-177094, 30-177095, 30-177096, 30-177097, 30-177098, 30-177099, 30-177100, 30-177101, 30-177102, 30-177103, 30-177104, 30-177105, 30-177106, 30-177107, 30-177108, 30-177109, 30-177110, 30-177111, 30-177112
OR-04185		2011	Cisneros, Charles and Hunt, Cheryle	Cultural Resources Monitoring Report for the La Floresta Village Project, City of Brea, Orange County, California	SWCA	30-001101, 30-001321, 30-001322, 30-001323, 30-001483, 30-001494, 30-001721, 30-100012, 30-100485, 30-100490, 30-120001, 30-120002, 30-120003
OR-04221		2012	Plank, Anna	500 Sievers Avenue, Brea, Rehabilitation	Orange County Commuinty Resources	
OR-04230		2010	Belcourt, Tria	TRTP Negative Archaeological Survey Report, Segment 8 Tonner Canyon South (Show-Up) Contractor Yard	Pacific Legacy, Inc.	30-001620, 30-001626, 30-001627, 30-001690, 30-001691, 30-001693, 30-001696, 30-001697, 30-100122, 30-177011, 30-177012
OR-04258		2011	Glentis, Dionisios	Cultural Resources Assessment for the Brea Power II Project Brea, Orange County, California	Chambers Group	30-001690
OR-04273		2008	Maxon, Pat	Historic Property Survey Report to connect existing bikeway routes on Puente Street in the cities of Fullerton and Brea in Orange County, CA	BonTerra	30-000796, 30-001489

Report List

Report No.	Other IDs	Year	Author(s)	Title	Affiliation	Resources
OR-04294	Cellular -	2013	Bonner, Wayne and Sarah A. Williams	Cultural Resources Collocation Records Search and Site Visit Results for Sprint Nextel Candidate OG25XC270 (Hughes Hills), 16802 Carbon Canyon Road, Brea, Orange County, California	MBA	30-001322, 30-001323, 30-001494, 30-120001, 30-120002, 30-162260
OR-04356		1989	Brown, Joan C.	Cultural Resources Reconnaissance of the 333 Acre Imperial Properties - Unocal Project Brea, Orange County, California	RMW Paleo Associates	
OR-04546		2015	Fulton, Terri and Phil Fulton	Archaeology Sensitivity Assessment, Hayashi Preserve Property, County of Orange, California	LSA Assocaites, Inc.	
OR-04548		2015	Fulton, Terri and Phil Fulton	Cultural Resources Assessment, Chino Hills State Park Restoration Project, Orange County, California	LSA Associates, Inc.	

Resource List

Primary No.	Trinomial	Other IDs	Type	Age	Attribute codes	Recorded by	Reports
P-30-000796	CA-ORA-000796		Site, Other	Historic	AH04; AP02; AP15		OR-00497, OR-01291, OR-01995, OR-04273
P-30-001010	CA-ORA-001010		Site	Prehistoric	AP02		OR-03822
P-30-001101	CA-ORA-001101H	Resource Name - FC 21	Site	Historic	AH02; AH03; AH04		OR-02209, OR-04185
P-30-001291	CA-ORA-001291H	Resource Name - NOCLATS-JRS 6	Site	Historic	AH04; AH11		OR-01106
P-30-001321	CA-ORA-001321/H	Resource Name - TKC-1	Site	Prehistoric, Historic	AH04; AP02		OR-01199, OR-02276, OR-03223, OR-03227, OR-04185
P-30-001322	CA-ORA-001322/H	Resource Name - TKC-2	Site	Prehistoric, Historic	AH04; AP02; AP15		OR-01199, OR-02209, OR-03227, OR-04063, OR-04185, OR-04294
P-30-001323	CA-ORA-001323H	Resource Name - TKC-3	Object, Site	Historic	AH02		OR-01199, OR-01875, OR-02209, OR-03227, OR-04063, OR-04185, OR-04294
P-30-001483	CA-ORA-001483H	Resource Name - Columbia 1	Site	Historic	AH02; AH04		OR-02884, OR-03213, OR-03911, OR-03912, OR-04185
P-30-001494	CA-ORA-001494H	Resource Name - CBA-1	Site	Historic	AH04		OR-02209, OR-03227, OR-04185, OR-04294
P-30-001620	CA-ORA-001620H	Resource Name - Landa House, S-6	Site	Historic	AH04		OR-03911, OR-03912, OR-04230
P-30-001621	CA-ORA-001621H	Resource Name - S-1, Basin	Site	Historic	AH02; AH03; AH04; AH05; AH07		OR-03911
P-30-001622	CA-ORA-001622H	Resource Name - S-2; Other - T-7, T-9	Site	Historic	AH04		OR-03911
P-30-001623	CA-ORA-001623H	Resource Name - S-3	Site	Historic	AH04		OR-03911
P-30-001624	CA-ORA-001624H	Resource Name - S-4	Site	Historic	AH02; AH04; AH07		OR-03911
P-30-001625	CA-ORA-001625H	Resource Name - S-5	Site	Historic	AH04		OR-03911

Resource List

Primary No.	Trinomial	Other IDs	Type	Age	Attribute codes	Recorded by	Reports
P-30-001626	CA-ORA-001626H	Resource Name - S-7	Site	Historic	AH04		OR-03911, OR-04230
P-30-001627	CA-ORA-001627	Resource Name - S-8; Other - TH-1	Site	Prehistoric, Unknown	AP11		OR-03911, OR-04230
P-30-001650	CA-ORA-001650	Resource Name - Sycamore Trail Site	Site	Prehistoric	AP02		
P-30-001664	CA-ORA-001664H	Resource Name - Old Oil Well; Other - BSP-1-1	Site	Historic	AH02; AH04; AH05		OR-03279
P-30-001665	CA-ORA-001665H	Resource Name - Flanigan Corners; Other - BSP-3-1	Site	Historic	AH04; AH16		OR-03279
P-30-001666		Resource Name - Generator Building; Other - BSP-3-2	Structure, Site	Historic	AH02; AH11; AH15; HP04		OR-03279, OR-04063
P-30-001690	CA-ORA-001690H	Resource Name - S-9; Other - T-1	Site	Historic	AH04		OR-03911, OR-04230, OR-04258
P-30-001691	CA-ORA-001691H	Resource Name - S-10; Other - T-2, T-3, T-4, T-5	Site	Historic	AH04		OR-03911, OR-04230
P-30-001692	CA-ORA-001692H	Resource Name - S-11; Other - T-6 and ISO-1	Site	Historic	AH04		OR-03911
P-30-001693	CA-ORA-001693H	Resource Name - S-12; Other - T-8	Site	Historic	AH04		OR-03911, OR-04230
P-30-001694	CA-ORA-001694H	Resource Name - S-13; Other - T-10	Site	Historic	AH04		OR-03911
P-30-001695	CA-ORA-001695H	Resource Name - S-14; Other - T-11	Site	Historic	AH04		OR-03911
P-30-001696	CA-ORA-001696H	Resource Name - S-15; Other - T-12	Site	Historic	AH04		OR-03911, OR-04230
P-30-001697	CA-ORA-001697H	Resource Name - S-16; Other - Iso-2, Iso-3, Iso-5	Site	Historic	AH04		OR-03911, OR-03912, OR-04230
P-30-001721		Resource Name - IF-01	Structure, Site	Historic	AH04; AH05		OR-04185
P-30-001735	CA-ORA-001735/H	Resource Name - S-17	Site	Prehistoric, Historic	AH04; AP02		
P-30-001736	CA-ORA-001736	Resource Name - S-18	Site	Prehistoric	AP02		
P-30-001737	CA-ORA-001737H	Resource Name - S-19	Site	Historic	AH02; AH04		

Resource List

Primary No.	Trinomial	Other IDs	Type	Age	Attribute codes	Recorded by	Reports
P-30-001738	CA-ORA-001738H	Resource Name - S-20	Site	Historic	AH07		
P-30-001802	CA-ORA-001802H	Resource Name - Telegraph Homestead	Site	Historic	AH02; AH04		
P-30-100012		Resource Name - OIF-12 Isolate 1; Other - OIF-12	Other	Prehistoric	AP02		OR-03822, OR-04185
P-30-100013		Resource Name - OIF-13H Isolate 2	Other	Historic	AH04		OR-03822
P-30-100122		Resource Name - Iso-11	Other	Historic	AH16		OR-03911, OR-03912, OR-04230
P-30-100123		Resource Name - Iso-14	Other	Historic	AH04		OR-03911, OR-03912
P-30-100378		Resource Name - Cow Tibia and Humerus; Other - LSA-MWD130-I-01	Other	Historic	AH04		
P-30-100379		Resource Name - Whole Bottle; Other - LSA-MWD130-I-02	Other	Historic	AH04		
P-30-100380		Resource Name - Depression Glass Fragment; Other - LSA-MWD130-I-03	Other	Historic	AH04		
P-30-100381		Resource Name - Ceramic Fragment; Other - LSA-MWD130-I-05	Other	Historic	AH04		
P-30-100382		Resource Name - Cow Rib; Other - LSA-MWD130-I-04	Other	Historic	AH04		
P-30-100441		Resource Name - NOCLATS - 91-2	Other	Prehistoric	AP02		OR-01089
P-30-100478		Resource Name - FF1	Other	Historic	AP04		
P-30-100479		Resource Name - FF2	Other	Historic	AH04		
P-30-100485		Resource Name - Iso-01	Other	Prehistoric	AP02		OR-04185
P-30-100486		Resource Name - Iso-02	Other	Prehistoric	AP02		
P-30-100487		Resource Name - Iso-03	Other	Historic	AH04		
P-30-100488		Resource Name - Iso-04	Other	Historic	AH04		
P-30-100489		Resource Name - Iso-05	Other	Historic	AH04		

Resource List

Primary No.	Trinomial	Other IDs	Type	Age	Attribute codes	Recorded by	Reports
P-30-100490		Resource Name - Iso-06 and Iso-07	Other	Prehistoric	AP02		OR-04185
P-30-120001		Resource Name - Carbon Canyon Reservoir Scatter	Site	Historic	AH04		OR-00474, OR-02209, OR-04063, OR-04185, OR-04294
P-30-120002		Resource Name - Carbon Canyon Reservoir Scatter	Site	Historic	AH04		OR-00474, OR-02209, OR-03730, OR-03980, OR-04063, OR-04185, OR-04294
P-30-120003		Resource Name - Carbon Canyon Reservoir Scatter	Site	Historic	AH04		OR-00474, OR-02209, OR-04185
P-30-150063		Resource Name - Laurel Elementary School; Other - zip 92821; OHP Property Number - 035729	Building	Historic	HP15	(Heumann, Leslie)	OR-01636, OR-03822
P-30-156178		OHP Property Number - 035525; Resource Name - Brea City Hall & Park; Other - zip 92821	Building, Site	Historic	HP14; HP31		
P-30-162260		OHP Property Number - 089531; Resource Name - Olinda Oil Fields; CHL - 918; Other - zip 92832	Object, Site	Historic	HP26; HP39		OR-04294
P-30-176487		Resource Name - Landa House	Building	Historic	HP02		OR-01184, OR-03911, OR-03912
P-30-177011		Resource Name - Stearns - Unocal Oil Property; Other - S-6; Other - Historic Barn / House	Building	Historic	HP33		OR-03911, OR-03912, OR-04230
P-30-177012		Resource Name - Brea-Olinda Oil Field; Other - Wildcatter's Park; Other - air-balanced pump jack; Other - counterbalance pump jack	Building, Structure, District	Historic	HP08; HP11; HP19; HP25; HP30; HP32; HP43; HP46		OR-03711, OR-03911, OR-03912, OR-04230
P-30-177675		Resource Name - Brea Canyon Road	Structure	Historic	HP19; HP37		

Resource List

Primary No.	Trinomial	Other IDs	Type	Age	Attribute codes	Recorded by	Reports
P-30-177676		Resource Name - Brea Canyon Portola Monument	Object	Historic	HP26		
P-30-177677		Resource Name - Sunburst	Object	Historic	HP28		
P-30-177678		Resource Name - Brea Dam	Building, Structure	Historic	HP08; HP11; HP20; HP21; HP22		
P-30-177679		Resource Name - Fullerton Dam	Building, Structure	Historic	HP08; HP11; HP20; HP21; HP22		
P-30-177680		Resource Name - Carbon Canyon Dam	Building, Structure	Historic	HP08; HP11; HP20; HP21; HP22		
P-30-177724		Resource Name - Southern Sierras Powerline	Structure	Historic	HP11		

Appendix F2. Confidential Cultural Resources Data

Not for Distribution.

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Appendix G. Noise Data

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TRAFFIC NOISE LEVELS AND NOISE CONTOURS

Project Number:
Project Name: Focused GPU and BCSP

Background Information

Model Description: FHWA Highway Noise Prediction Model (FHWA-RD-77-108) with California Vehicle Noise (CALVENO) Emission Levels.
Source of Traffic Volumes: Kittelson & Associates, Inc., 2025
Community Noise Descriptor: L_{dn}: ____ CNEL: X

Assumed 24-Hour Traffic Distribution:	Day	Evening	Night
Total ADT Volumes	77.70%	12.70%	9.60%
Medium-Duty Trucks	87.43%	5.05%	7.52%
Heavy-Duty Trucks	89.10%	2.84%	8.06%

"-" = contour is located within the roadway right-of-way.
Distance is from the centerline of the roadway segment to the receptor location.

Analysis Condition / Roadway, Segment	Lanes	Median Width	ADT Volume	Design Speed (mph)	Alpha Factor	Vehicle Mix: Medium Trucks	Vehicle Mix: Heavy Trucks	CNEL at 50 Feet	Distance from Centerline of Roadway to Contour: 70 CNEL	65 CNEL	60 CNEL	55 CNEL
Brea Boulevard												
North of Central Ave, existing	2	0	18,132	55	0.5	3.0%	2.0%	**73.0**	79	170	367	791
North of Central Avee, future GPU (2050)	2	0	23,161	55	0.5	3.0%	2.0%	**74.1**	93	201	432	931
North of Central Avee, future BCSP (2050)	2	0	19,641	55	0.5	3.0%	2.0%	**73.3**	83	180	387	834
Puente Street												
Central Ave to Lambert Rd, existing	4	12	8,382	40	0.5	6.3%	2.3%	**67.9**	-	78	168	362
Central Ave to Lambert Rd, future GPU (2050)	4	12	9,306	40	0.5	6.3%	2.3%	**68.4**	-	84	180	388
Central Ave to Lambert Rd, BCSP (2050)	4	12	8,659	40	0.5	6.3%	2.3%	**68.0**	-	80	172	370
Lambert Road												
Sunflower Street to Valencia Ave, existing	4	0	19,878	50	0.5	6.1%	1.3%	**72.9**	78	169	364	784
Sunflower Street to Valencia Ave, future GPU (2050)	4	0	34,062	50	0.5	6.1%	1.3%	**75.3**	112	242	521	1,123
Sunflower Street to Valencia Ave, future BCSP (2050)	4	0	24,133	50	0.5	6.1%	1.3%	**73.8**	89	192	414	893
State College Boulevard												
Lambert Road to Birch St, existing	4	12	19,677	40	0.5	6.3%	2.3%	**71.6**	64	138	297	640
Lambert Road to Birch St, future GPU (2050)	4	12	22,924	40	0.5	6.3%	2.3%	**72.3**	71	153	329	708
Lambert Road to Birch St, future BCSP (2050)	4	12	20,651	40	0.5	6.3%	2.3%	**71.8**	66	142	307	661
Birch Street												
Brea Boulevard to Poplar Ave, existing	4	12	16,670	35	0.5	6.1%	1.3%	**69.1**	-	94	202	435
Brea Boulevard to Poplar Ave, future GPU (2050)	2	12	18,809	35	0.5	6.1%	1.3%	**69.0**	43	92	198	426
Brea Boulevard to Poplar Ave, future BCSP (2050)	2	12	17,312	35	0.5	6.1%	1.3%	**68.6**	40	87	187	403
Associated Road												
Birch Street and Imperial Highway, existing	4	12	13,644	40	0.5	6.3%	2.3%	**70.0**	50	108	233	501
Birch Street and Imperial Highway, future GPU (2050)	4	12	15,542	40	0.5	6.3%	2.3%	**70.6**	55	118	254	547
Birch Street and Imperial Highway, future BCSP (2050)	4	12	14,213	40	0.5	6.3%	2.3%	**70.2**	52	111	239	515
Rose Drive												
Valencia Ave and Vesuvius Dr, existing	2	12	21,396	45	0.5	3.0%	2.0%	**71.8**	66	142	306	660
Valencia Ave and Vesuvius Dr, future GPU (2050)	2	12	32,501	45	0.5	3.0%	2.0%	**73.6**	87	188	405	872
Valencia Ave and Vesuvius Dr, future BCSP (2050)	2	12	24,728	45	0.5	3.0%	2.0%	**72.4**	73	157	337	727
Imperial Highway												
West of Puente St, existing	6	12	37,373	45	0.5	5.3%	3.2%	**77.2**	152	327	704	1,517
West of Puente St, future GPU (2050)	6	12	48,289	45	0.5	5.3%	3.2%	**78.3**	180	388	835	1,800
West of Puente St, future BCSP (2050)	6	12	40,648	45	0.5	5.3%	3.2%	**77.6**	160	346	745	1,605
Imperial Highway												
Berry St and Brea Blvd, existing	6	12	48,969	40	0.5	5.3%	3.2%	**77.4**	155	334	720	1,551
Berry St and Brea Blvd, future GPU(2050)	6	12	55,493	40	0.5	5.3%	3.2%	**77.9**	169	363	782	1,685
Berry St and Brea Blvd, future BCSP (2050)	6	12	50,926	40	0.5	5.3%	3.2%	**77.5**	159	343	739	1,592
Imperial Highway												
Associated Rd and Kingwood Ct, existing	6	12	45,653	40	0.5	4.4%	3.3%	**77.0**	146	315	679	1,463
Associated Rd and Kingwood Ct, future GPU (2050)	6	12	54,971	40	0.5	4.4%	3.3%	**77.8**	166	357	769	1,656
Associated Rd and Kingwood Ct, future BCSP (2050)	6	12	48,488	40	0.5	4.4%	3.3%	**77.3**	152	328	707	1,523
Imperial Highway												
Valencia Ave and East City Border, existing	6	12	36,843	50	0.5	4.4%	3.3%	**78.1**	172	371	800	1,724
Valencia Ave and East City Border, future GPU (2050)	6	12	45,844	50	0.5	4.4%	3.3%	**79.0**	199	430	926	1,995
Valencia Ave and East City Border, future BCSP (2050)	6	12	39,543	50	0.5	4.4%	3.3%	**78.4**	181	389	839	1,808
Carbon Canyon Road (SR-142)												
East of Olinda Village, existing	2	0	16,567	45	0.5	3.0%	2.0%	**70.5**	54	117	252	544
East of Olinda Village, future GPU (2050)	2	0	19,973	45	0.5	3.0%	2.0%	**71.4**	62	133	286	616
East of Olinda Village, future BCSP (2050)	2	0	17,589	45	0.5	3.0%	2.0%	**70.8**	57	122	263	566

Appendix H. Transportation Impact Analysis

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KITTELSON & ASSOCIATES

CITY OF BREA FOCUSED GENERAL PLAN UPDATE AND BREA CORE SPECIFIC PLAN: TRANSPORTATION IMPACT ANALYSIS

BREA, CA

February 2026



Inside front cover.

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City of Brea Focused General Plan Update and Brea Core Specific Plan: Transportation Impact Analysis

Brea, CA

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February 2026

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APPENDICES

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Section 1 — Executive Summary

EXECUTIVE SUMMARY

The City of Brea is in the northeastern corner of Orange County, where the boundaries of Orange, Los Angeles, and San Bernardino Counties converge. The City is bordered by unincorporated Orange County land and the Los Angeles County line to the north; Chino Hills State Park and the San Bernardino County line to the east; the Cities of Yorba Linda, Placentia, and Fullerton to the south; and the City of La Habra to the west. The Orange Freeway (State Route [SR] 57) bisects the City from north to south. The three major east–west roadways are Imperial Highway (SR 90), Carbon Canyon Road (SR 142), and Lambert Road

The City is preparing the Focused General Plan Update, which will introduce a Mobility Element (replacing the existing Circulation Element) addressing active transportation, complete streets, automobile and truck traffic, intersection and roadway vehicular level of service (LOS) operations, and transit options for communities reliant on public transportation. The Focused General Plan will serve the City through 2050.

The Plan proposes a mix of uses. Within the planning, buildout of the proposed General Plan Land Use Element could yield a total of up to 23,736 housing units, a population of 67,647 people, approximately 30.59 million square feet of non-residential square footage, and 73,709 jobs. This represents development growth above existing development conditions of approximately 7,390 new housing units, 21,062 people, 9.1 million square feet of new non-residential square footage, and 21,772 jobs.

Kittelson & Associates ("Kittelson") has prepared a transportation analysis of the Plan. Below is a summary of results of the transportation analysis conducted for the Plan, including any significant impact findings and recommended roadway improvements.

SIGNIFICANT TRANSPORTATION IMPACTS

The California Environmental Quality Act (CEQA) transportation impact analysis of the General Plan Update determined that impacts would be less than significant for the following topics:

- Vehicle miles traveled (VMT)
- Transit, roadway, bicycle, and pedestrian facilities
- Geometric design and incompatible use hazards
- Emergency access

Section 2 — Introduction

INTRODUCTION

This report documents the California Environmental Quality Act (CEQA) transportation assessments for the Brea Focused General Plan Update and Brea Core Specific Plan, and summarizes the methodology, findings, and conclusions of the analysis.

The study intersections and roadway segments were selected in coordination with City staff and focused on key citywide locations, including near growth areas, as representative locations.

PROJECT DESCRIPTION

The City of Brea is 12.4 square miles in northern Orange County, California. The city is bordered by the City of La Habra to the west, the City of Fullerton to the southwest, the City of Placentia to the south, Yorba Linda to the east, and Daimond Bar to the north. The City is preparing the Focused General Plan Update, which will introduce a Mobility Element (replacing the existing Circulation Element) addressing active transportation, complete streets, automobile and truck traffic, intersection and roadway vehicular level of service (LOS) operations, and transit options for communities reliant on public transportation. The Focused General Plan will serve the City through 2050.

Note that this study examines citywide buildout estimates that represent a hypothetical scenario of development in the City. Based on historical development patterns in Brea, it is likelier that development would occur at levels lower than the buildout estimate, due to factors such as standards governing density and floor area ratio, and physical factors such as topography.

Section 3 — Existing Conditions

EXISTING CONDITIONS

This section summarizes existing mobility conditions in the City of Brea related to vehicles, transit, bicycles, pedestrians, freight/goods movement, and traffic operations.

ROADWAY NETWORK

The roadway network in the City contains three state routes: State Route 57 (SR 57), Imperial Highway (SR 90), and Carbon Canyon Road-Valencia Avenue (SR 142). These routes, along with other significant roadways, in the City are described below.

STATE ROUTE 57 FREEWAY

State Route 57 (SR 57) is a facility under Caltrans' jurisdiction that serves as a significant north-west linkage between Los Angeles County and Orange County, connecting with Interstate 5 (I-5) and State Route 22 (SR-22) to the south and Interstate 210 (I-210), Interstate 10 (I-10) and State Route 60 (SR 60) to the north. Within Brea, SR 57 is a 12-lane freeway with six lanes in each direction with a speed limit of 65 miles per hour. In Brea, SR 57 has interchanges at Lambert Road, Imperial Highway, and Tonner Canyon Road.

IMPERIAL HIGHWAY

Imperial Highway (SR 90) is classified as a major arterial within Brea, carrying significant vehicle volumes in an east-west direction. Imperial Highway primarily supports through-traffic with access to multiple residential and commercial destinations. With a speed limit of 40 miles per hour, it features two to three travel lanes on each side of the street, primarily divided by a center turn lane. All major intersections along Imperial Highway have pedestrian crosswalks and pedestrian signal heads; in addition, sidewalks are provided along the corridor. Additionally, Imperial Highway is designated as a Smart Street within the MPAH. A "Smart Street" includes various traffic-carrying capacity enhancements to facilitate traffic flow. In particular, modifications to Imperial Highway included restriping from four to six lanes, modification of medians at intersections, addition of bus pads and turnouts, and re-timed traffic signals to improve coordination. [1] These modifications help to address traffic congestion and improve operations on the road.

CARBON CANYON ROAD

Carbon Canyon Road (SR 142) is under Caltrans' jurisdiction and is classified as a primary arterial from Valencia Avenue to Brea Hills Avenue, and as a collector from Brea Hills Avenue east to the city and county boundary. The roadway travels in the east-west direction and provides direct access to Olinda Village and cities to the east such as Chino Hills, Chino, and Eastvale. The roadway is rural in character, with one lane in each direction and no center divider. The roadway does not offer consistent pedestrian crosswalks as there is little pedestrian demand.

VALENCIA AVENUE

Also classified as SR 142, Valencia Avenue is under Caltrans' jurisdiction between Lambert Road / Carbon Canyon Road and Imperial Highway (SR 90). This portion is classified as a primary arterial. The roadway travels in the north-south direction and provides a link between northeast and southeast Brea, as well as to the City of Placentia in the south. Valencia Avenue is a four-lane divided roadway for much of its length and features continuous sidewalks along the east side of the roadway, with sporadic sidewalks on its west side. The roadway includes pedestrian crosswalks at every signalized intersection.

[1] OCTA, "Destination 2035", *Detailed Year 2035 Baseline Project List,* 2010

BREA BOULEVARD

Brea Boulevard is classified as a primary arterial crossing the City in the north-south direction. This roadway accommodates a combination of uses, including commercial and mixed-use areas with a speed limit of 40 miles per hour. It features two travel lanes on each side of a median along with a left-turn lane at multiple locations. On-street parking spaces are available in most parts of this roadway. All major intersections along Brea Boulevard have pedestrian crosswalks and pedestrian signal heads; in addition, there are sidewalks along the corridor.

LAMBERT ROAD

Lambert Road is classified as a major arterial crossing the city in the east-west direction. This roadway primarily supports through-traffic with a speed limit of 40 miles per hour. It features two to three travel lanes on each side of the street alternating between a median and a center turn lane. Several intersections along Lambert Road have pedestrian crosswalks and pedestrian signal heads; in addition, there are sidewalks along the corridor.

OTHER KEY ROADWAYS

Other arterial roadways in Brea include State College Boulevard, Central Avenue, Puente Street, and Birch Street. Collector streets include Elm Street, Palm Street, Whittier Avenue, Sante Fe Road, and Placentia Avenue.

TRANSIT SERVICE

Public transit service in Brea is provided by fixed-route bus service operated by Orange County Transportation Authority (OCTA) and Foothill Transit, plus local services provided by the City of Brea. All bus routes that run operate within the City provide service to the Brea Mall Transit Center, located off State College Boulevard between Imperial Highway and Lambert Road.

OCTA is the major transit agency serving Orange County, with services including fixed-route buses and paratransit. It provides approximately 60 fixed bus routes, including local, community, express (Bravo!), and StationLink services on a countywide basis. OCTA bus network spans most of Orange County, connecting major cities, employment centers, transit hubs, and points of interest. OCTA provides connections to other municipalities and the rest of the region through transit nodes and other intermodal hubs. Systemwide, buses generally operate on 15 to 30-minute intervals during peak hours, with less frequent service during off-peak times and on weekends.

Currently, there are four OCTA bus routes that operate within the City of Brea[2]:

- Route 57 which operates between Brea and Newport Beach.
- Route 59 which operates between Anaheim and Irvine
- Route 129, a community route that operates between La Habra, Brea and Anaheim.
- Route 143, which operates from La Habra to Brea.

In addition, OCTA's ACCESS paratransit service serves those with disabilities.

Foothill Transit operates a fleet of over 300 buses throughout Southern California's San Gabriel Valley and Pomona Valley. Within Brea, Foothill Transit operates one route, typically on a one-hour schedule:

- Route 286 which runs between Pomona and Brea.[3]

In addition to the routes provided by OCTA and Foothill Transit, the City of Brea provides local transportation services. The City offers free shuttle transportation for seniors, providing rides to the Senior Center and scheduled shopping trips. The shuttle operates Monday to Friday, requiring applicants to be 60+ years old and Brea residents. Reservations for rides must be made one business day in advance. The shuttle offers morning pick-ups between 8:15 AM and 10:00 AM. and return options after lunch. Scheduled shopping trips to various stores are available on specific days. Additionally, a new van service called "Seniors on the Go!" operates Tuesday to Friday offering rides for personal errands and community visits within Orange County for a small fee.[4]

[2] Orange County Transportation Authority, "Routes and Schedules", last accessed December 2025. https://www.octa.net/getting-around/bus/oc-bus/routes-and-schedules/routes-and-schedules
[3] Foothill Transit, "Schedules and Maps", last accessed May 2024. https://www.foothilltransit.org/buslines/timetables
[4] City of Brea, "Transportation", last accessed December 2025. https://www.cityofbrea.gov/1105/Transportation

Table 1 and Table 2 summarize the transit service in Brea and Figure 1 illustrates the routes.

Table 1: Transit Service in Brea

Route	Route Type	Operator	Route Description
OCTA Route 57 Brea- Newport Beach	Local Fixed Route	OCTA	Travels from Brea to Newport Beach via State College Boulevard / Bristol Street.
OCTA Route 59 Anaheim-Irvine	Local Fixed Route	OCTA	Travels from Brea to Irvine, stopping at the Brea Mall Area, via Birch Street / Kraemer Boulevard / Glassell Street / Grand Avenue / Von Karman Avenue.
OCTA Route 129 La Habra - Anaheim	Community Route	OCTA	Travels from La Habra to Anaheim via La Habra Boulevard / Brea Boulevard / Birch Street / Kraemer Boulevard.
OCTA Route 143 La Habra - Brea	Community Route	OCTA	Travels from La Habra to Brea via Whittier Boulevard / Harbor Boulevard / Brea Boulevard / Birch Street.
Foothill Route 286 Brea - Pomona	Community Route	Foothill Transit	Travels from Brea to Pomona via Diamond Bar Boulevard / W Mission Boulevard / S Garey Avenue.

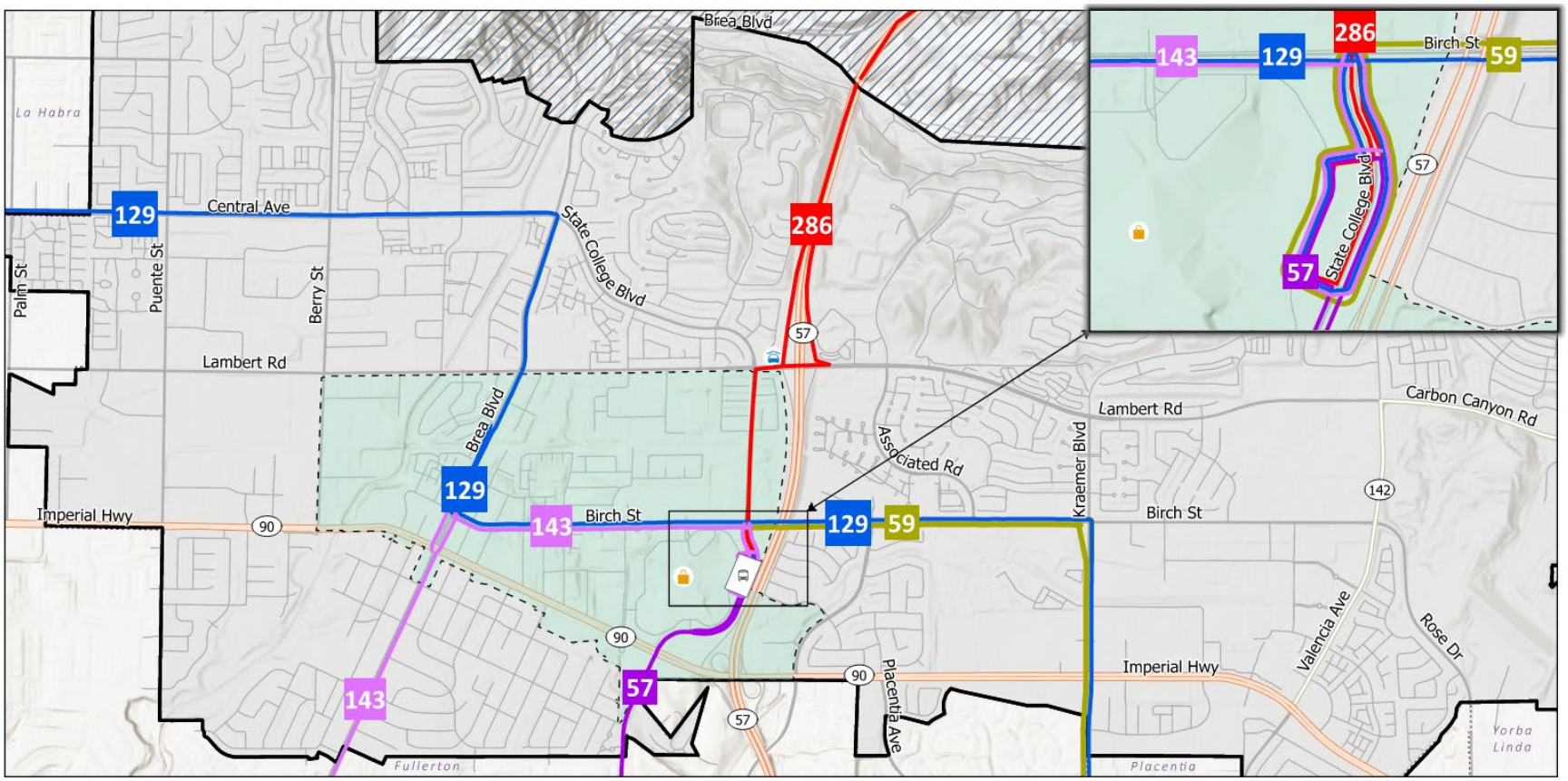
Sources: OCTA, and Foothill Transit (information accessed May 2024)

Table 2: Brea City Shuttle and Van Service

Route	Route Type	Operator	Route Description
Brea Senior Center Shuttle	City Shuttle	City of Brea	Free shuttle transportation from the Senior Center to pre-scheduled shopping. Monday to Friday.
Local Scheduled Shopping Trips	City Shuttle	City of Brea	Mondays, 12:45 PM – Walmart Shopping First Wednesday of the month 12:45 PM – Ralphs/Rite Aid Shopping Third Wednesday of the month, 12:45 PM – Albertsons/Trader Joe's Shopping
Seniors on the Go!	City Van Service	City of Brea	For $2 one way and with a ride reservation, with a cap of 5 miles, this service can take Brea residents ages 60 and over where they need to go. Operates Tuesday to Friday from 9:00 AM to 12:30 PM.

Source: City of Brea (information accessed May 2024)

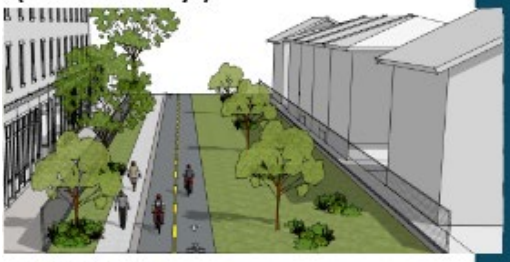
Figure 1: Existing Transit Service in Brea



BICYCLE FACILITIES

The California Department of Transportation (Caltrans) classifies and defines bicycle facilities. Caltrans designates four classes of bicycle facilities: Classes I, II, III, and IV. The illustration below illustrates and describes the bicycle facility classifications.

Multi-Use Paths (Class I Bikeways)



A path physically separated from motor vehicle traffic by an open space or barrier, used by bicyclists, pedestrians, joggers, skaters, and other non-motorized travelers.
Because the availability of uninterrupted rights-of-way is limited, this type of facilities may be difficult to locate and expensive to build relative to other types of bicycle and pedestrian facilities, but inexpensive compared to new roadways. Prime locations for bike paths are areas such as power-line easements, utility easements, canal banks, river levees, drainage easements, railroad or highway rights-of-way, or regional community parks.

Bicycle Lanes (Class II Bikeways)



A travel lane on a roadway that has been set aside by striping and pavement markings for the preferential or exclusive use of bicyclists. Bicycle lanes are intended to promote an orderly flow of bicycle and motor vehicle traffic. This type of facility is established by using the appropriate striping, legends, and signs.

Bicycle Routes (Class III Bikeways)



Bicycle routes designated by signage where bicyclists share travel lanes with motor vehicle traffic. Bicycle routes must be of benefit to the bicyclists and offer a higher degree of service than adjacent streets. Class III bikeways are often designated on low-volume local residential streets. Additionally, many cities have installed an enhanced type of Class III Bicycle Route, referred to as a "Bicycle Boulevard." Bicycle Boulevards are generally installed on relatively low-volume streets and often include elements to facilitate bicycle travel, such as reorienting stop signs to reduce delays to cyclists, and/or through the inclusion of traffic calming measures.

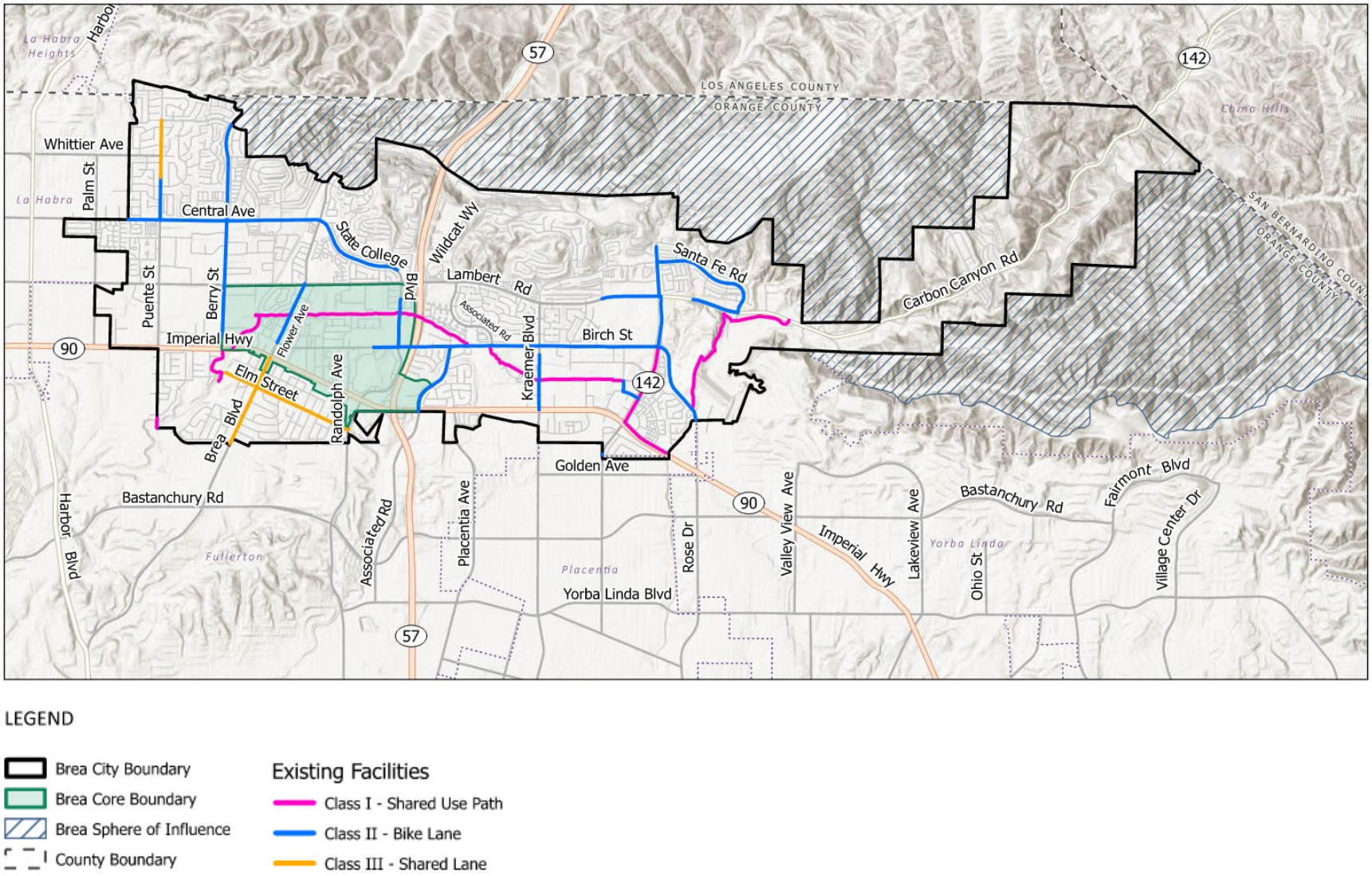
Separated Bikeway (Class IV Bikeways)



A class IV bikeway is for the exclusive use of bicycles and includes a separation between the bikeways and adjacent vehicle traffic. The physical separation may include flexible posts, grade separation, inflexible physical barriers or on-street parking. Separated bikeways generally operate in the same direction as vehicle traffic on the same side of the roadway. However, two-way separation bikeways can also be used, usually in lower speed environments (35 miles per hour or less).

Existing bikeways in the City are shown in Figure 2.

Figure 2: Existing Bikeway Network



PEDESTRIAN FACILITIES

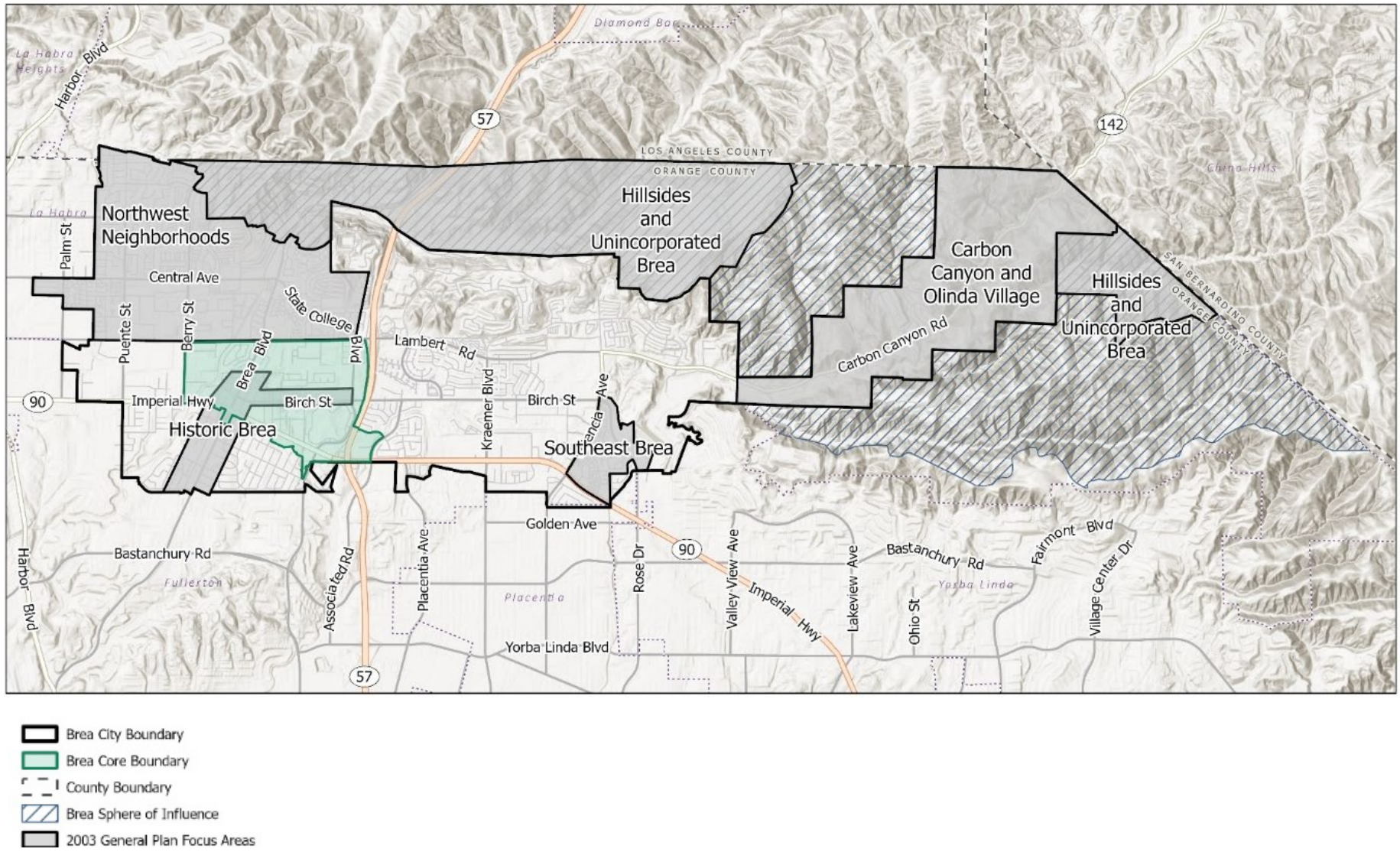
Throughout the City pedestrian facilities include crosswalks, pedestrian crossing signals, lighting, street trees, and curb ramps. The pedestrian network is comprised of sidewalks and multi-use paths, allowing residents to walk to their destination along dedicated paths and reducing conflicts with other travel modes. Routes to major destinations, such as schools and public facilities, attract youth and are important within the pedestrian network. Throughout the City, opportunities exist to improve sidewalk connectivity, installing pedestrian crossings, and maintaining consistency with pedestrian amenities.

Sidewalks are generally included on most roadways within the City; however, there are gaps in some of the industrial areas of Brea. At locations where sidewalks are provided, the City's Municipal Code requires sidewalks to be a minimum of 4 feet wide in residential areas, and a minimum of 5 feet wide in a commercial or industrial area, with additional ADA, curb-ramp and curb requirements.

The following is an overview of the typical pedestrian facilities across the City, separated by the surrounding land uses and land use patterns. This examination encompasses a diverse array of areas, providing information on the accessibility and infrastructure designed to facilitate pedestrian movements throughout these specific locales. This section describes pedestrian facilities along roadways, summarized within the City's focus areas as defined in the 2003 Brea General Plan and as proposed through the new Brea Core Specific Plan, which are listed below and shown in Figure 3.

- Northwest Neighborhoods
- Carbon Canyon and Olinda Village
- Hillsides and Unincorporated Brea
- Southeast Brea
- Brea Core Area (which includes portions of Historic Brea and Downtown Brea delineated in the 2003 General Plan

Figure 3: 2003 General Plan Focus Areas and Brea Core



NORTHWEST NEIGHBORHOODS

The northwest area of Brea contains a mix of residential neighborhoods, including several senior housing developments. Most of the homes were built between the 1950s and 1970s, with some newer tracts built in the 1980s and 1990s. The neighborhoods typically feature sidewalks on both sides of the roadway, with occasional sections that lack sidewalks. Pedestrian amenities are provided along the sidewalks such as curb ramps. Streetlights can be found throughout the area and are consistently spaced throughout.

Puente Street



Candlewood Street



CARBON CANYON AND OLINDA VILLAGE

Carbon Canyon and Olinda Village have less developed pedestrian infrastructure. Olinda Village is a distinct residential neighborhood within Carbon Canyon. The rural character of the area, together with the development constraints imposed by topography, geologic conditions, and the configuration of Carbon Canyon Road limit land use opportunities within Carbon Canyon. The majority of Carbon Canyon Road does not contain sidewalks and crosswalks. Pedestrian travel occurs along the paved roadway shoulder or unpaved sections. Although there are few pedestrian crossings and signage in rural areas, the rural setting lacks sufficient streetlights and pedestrian-friendly lighting.

Olinda Village



Carbon Canyon Road



HILLSIDES AND UNINCORPORATED BREA

The hillsides and unincorporated Brea area refer to pockets of land where the uses are currently undeveloped and include some areas north of Lambert Road up to the Los Angeles County border. Roadways in these areas do not contain sidewalks or crosswalks, with limited pedestrian demand.

Brea Canyon Road



Valencia Ave



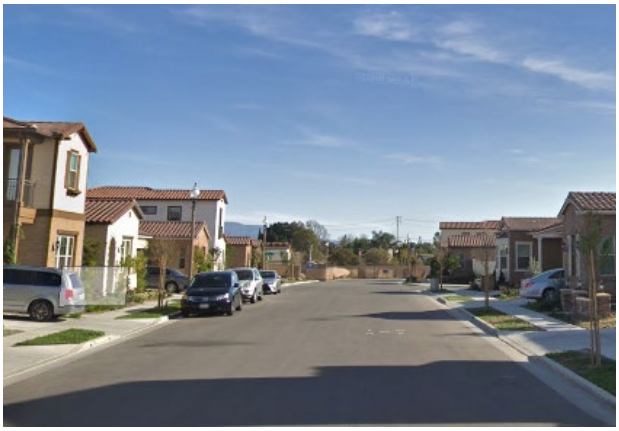
SOUTHEAST BREA

Southeast Brea includes the former oil-use related and agricultural properties that have since transitioned to residential uses. Many of these residences are part of La Floresta, a master-planned community. La Floresta has a well-developed pedestrian network with complete sidewalk connectivity, landscaping, crosswalks, and curb ramps.

La Floresta Street



Terrazo Drive



BREA CORE AREA

In the Brea Core Area specifically, sidewalks exist along the majority of roadways. Few gaps in the sidewalks currently exist, such as portions of Lambert Road, Berry Road, and State College Boulevard, as highlighted in Figure 4. These gaps are small and typically occur in industrial areas that tend to have lower pedestrian demand, and some gaps occur only along one side of the street, with sidewalk connectivity available on the other side. In addition, several streets that encircle the Brea Mall are missing sidewalks. Similarly, there are gaps in lighting and crossing infrastructure in the Plan Area, as many sidewalks do not provide pedestrian buffers, such as street trees and landscaping, which improve perceived safety.

Within the Brea Core Area, multiple intersections have high visibility crosswalks, including most intersections along Imperial Highway, indicating a unique place and high pedestrian volumes.

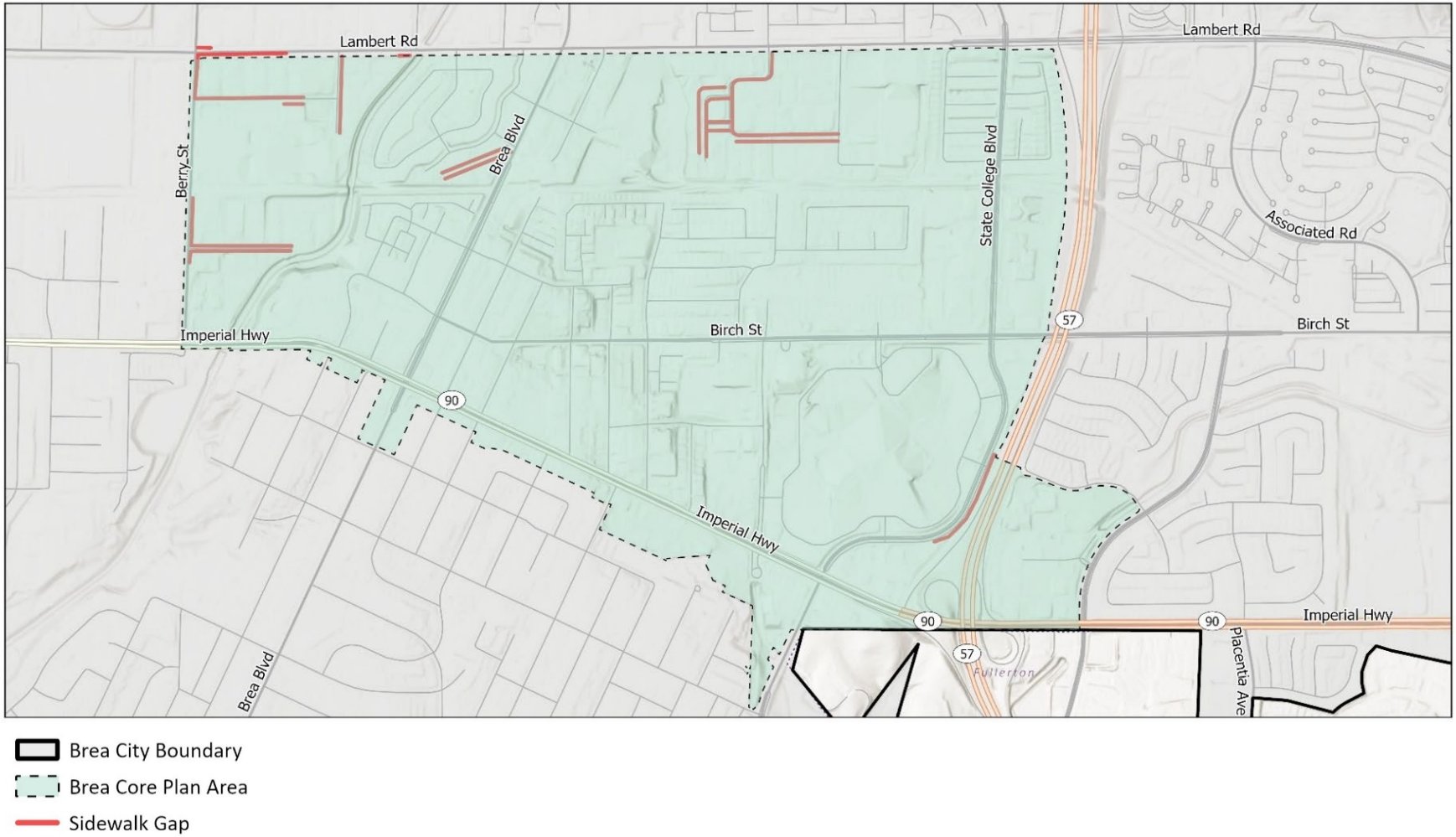
Poplar Avenue



Birch Street



Figure 4: Sidewalk Gaps in Brea Core Area



Source: Kittelson and Associates, 2024

FREIGHT/GOODS MOVEMENT

Freight and goods movement utilize several of the major routes in the City's network. As illustrated in Figure 5, trucks move along Central Avenue, State College Boulevard, Imperial Highway, Lambert Road, Birch Street, Puente Street, Berry Street, Brea Boulevard, and Valencia Avenue. Certain roads are classified as restricted truck routes, which prohibit trucks exceeding a maximum gross weight of 6,000 pounds from accessing from 8:00 PM to 6:00 AM. Carbon Canyon Road, east of Valenica Avenue, is restricted to trucks with four axles or fewer.

One of the largest generators of truck activity on streets within Brea is the Olinda Alpha Landfill, located in the northeast of the City. The 565-acre landfill processes nearly 7,000 tons per day, and is a significant generator of commercial and public disposal truck trips.[5] Access to the Olinda Alpha Landfill is provided via Valencia Avenue, north of Lambert Road. In addition, the western portion of the City south of Central Avenue and west of Tamarack Avenue, as well as the southeast corner of the City south of Birch Street and east of Kraemer Boulevard have goods movement activities generated by the warehousing, light industrial, and logistic uses.

The Surface Transportation Assistance Act (STAA) of 1982 defines a network of state facilities as truck routes which accommodate large trucks. SR 57, which runs through Brea, is a STAA-designated truck route. In addition, the City of Brea also designates multiple other roads as truck routes. These routes are described in Table 3.

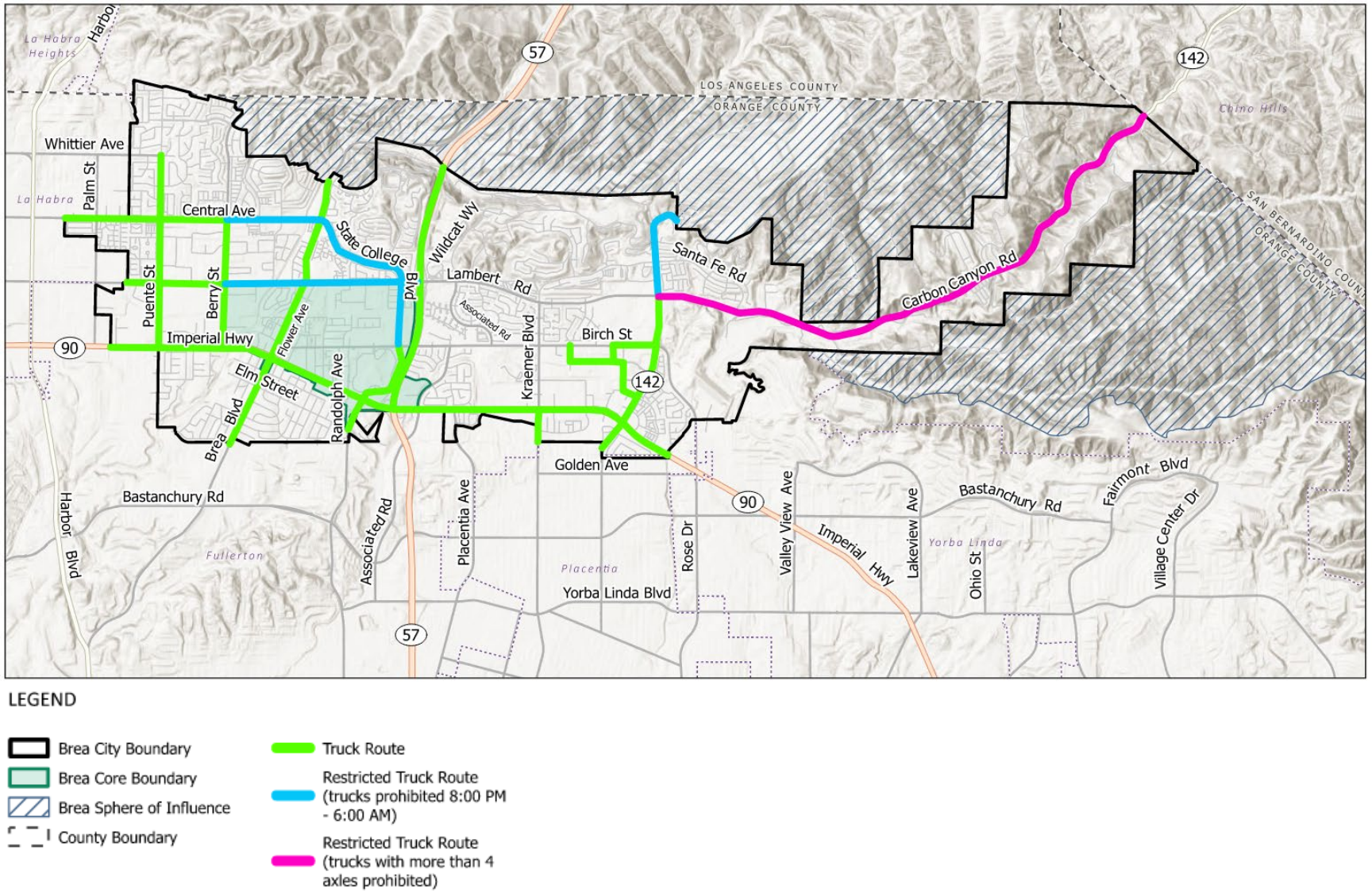
Table 3: Existing Truck Routes

On Road	From Road	To Road	Direction of Travel
SR 57 Freeway	Southern City Boundary	Northern City Boundary	N/S
Brea Boulevard	Southern City Boundary	Northern City Boundary	N/S
Puente Street	Southern City Boundary	Whitter Avenue	N/S
Berry Street	Imperial Highway	Central Avenue	N/S
Kraemer Boulevard	Southern City Boundary	Imperial Highway	N/S
Valencia Avenue	Southern City Boundary	Northern City Boundary	N/S
State College Boulevard	Brea Boulevard	Southern City Boundary	N/S
Nasa Street/Enterprise Street/Ranger Street/Voyager Avenue	Valencia Avenue	Birch Street	N/S/E/W
Imperial Highway	Western City Boundary	Eastern City Boundary	E/W
Lambert Road	Western City Boundary	State College Boulevard	E/W
Central Avenue	Western City Boundary	Brea Boulevard	E/W
Carbon Canyon Road	Valencia Avenue	Eastern City Boundary	E/W
Birch Street	Voyager Avenue	Valencia Avenue	E/W

Source: City of Brea, Truck Route Map

[5] OC Landfills, "Olinda Landfill", https://oclandfills.com/landfills/olinda-landfill

Figure 5: Existing Truck Routes



Section 4 — Regulatory Setting

REGULATORY SETTING

This section summarizes applicable federal, state, regional, and local plans pertinent to the City of Brea. This information provides a context for the transportation impact discussion related to the project's consistency with applicable policies, plans, laws, and regulations.

STATE REGULATIONS

CALIFORNIA DEPARTMENT OF TRANSPORTATION

The California Department of Transportation (Caltrans) manages the operation of state highways and is the primary state agency responsible for transportation issues. One of its duties is the construction and maintenance of the state highway system. Caltrans approves the planning, design, and construction of improvements for all state-controlled facilities within the City. Freeway segments, freeway ramps and intersections associated with freeway on- and off-ramps fall under Caltrans jurisdiction.

State highways in the City include State Route (SR) 57, the City's main north/south limited access thruway, Imperial Highway (SR 90), which runs east/west across the southern section of the City, and SR 142, which runs northwest to San Bernardino County along Valencia Avenue and Carbon Canyon Road.

Caltrans has developed procedures to determine if state-controlled facilities require improvements. For projects that may physically affect facilities under its administration, Caltrans requires encroachment permits before any construction work may be undertaken. For projects that would not physically affect facilities but may influence traffic flow and operational deficiencies at such facilities, Caltrans may recommend measures to address adverse effects from traffic caused by such projects. Caltrans also prepares comprehensive planning documents, including Corridor System Management Plans and Transportation Concept Reports, which are long-range planning documents that establish a planning concept for state facilities.

Caltrans updated its guidance in 2020 to include metrics to evaluate transportation impacts based on vehicle miles traveled (VMT) and no longer sets a minimum acceptable level of service (LOS) for its facilities. Based on the Caltrans Vehicle Miles Traveled-Focused Transportation Impact Study Guide, Caltrans has transitioned from LOS performance standards to VMT to identify significant impacts.

> *"For land use projects and plans, automobile delay is no longer considered a significant impact on the environment under CEQA (SB 743, 2013). Caltrans review of land use projects and plans is focused on a VMT metric, consistent with changes to the CEQA Guidelines (California Code of Regulations Section 15064.3(b)(1)). This VMT-focused TISG provides a foundation for review of how lead agencies apply the VMT metric to CEQA project analysis.*
>
> *Beyond or in addition to the use of the VMT metric, determining how the State Highway System may otherwise be affected by a land use project may still be necessary at times, particularly as it relates to the safety of the traveling public. Additional future guidance will include the basis for requesting transportation impact analysis that is not based on VMT. This guidance will include a simplified safety analysis approach that reduces risks to all road users and focuses on multi-modal conflict analysis as well as access management issues. With this guidance the Department will transition away from requesting LOS or other vehicle operations analyses of land use projects."*

Note that LOS analyses may be required by Caltrans for local operational assessments (e.g., to support a queueing analysis at ramp terminus intersections).

ASSEMBLY BILL 32, SENATE BILL 32, AND SENATE BILL 375

Assembly Bill (AB) 32, also known as the Global Warming Solutions Act of 2006, committed California to reducing greenhouse gas (GHG) emissions to 1990 levels by 2020. In 2016, SB 32 added a new target: reducing statewide emissions to 40 percent below 1990 levels by 2030.

SB 375 provides guidance for curbing emissions from cars and light trucks to help California comply with AB 32. There are five major components to SB 375:

- Air Resources Board (ARB) will guide the adoption of GHG emission targets to be met by each Metropolitan Planning Organization (MPO) in the state.
- MPOs are required to create a Sustainable Communities Strategy (SCS) that provides a plan for meeting these regional targets. The SCS must be consistent with the Regional Transportation Plan (RTP).
- Regional housing elements and transportation plans must be synchronized on eight-year schedules. Also, the SCS and Regional Housing Needs Assessment (RHNA) must be consistent with each other.
- CEQA is streamlined for preferred development types such as mixed-use projects and transit-oriented developments (TODs) if they meet specific requirements.
- MPOs must use transportation and air emission modeling methodologies consistent with California Transportation Commission (CTC) guidelines.

CALIFORNIA COMPLETE STREETS ACT OF 2008 (AB 1358)

Originally passed in 2008, California's Complete Streets Act took effect in 2011 and requires local jurisdictions to plan for land use transportation policies that reflect a "complete streets" approach to mobility. "Complete streets" comprises a suite of policies and street design guidelines which provide for the needs of all road users, including pedestrians, bicyclists, transit operators and riders, children, the elderly, and the disabled. From 2011 onward, any local jurisdiction—county or city—that undertakes a substantive update of the circulation element of its general plan must consider "complete streets" and incorporate corresponding policies and programs. In 2010, OPR released guidelines for compliance with this legislation which provide direction on how circulation elements can best plan for a variety of travel modes such as transit, walking, bicycling, and freight.

On December 7, 2021, Caltrans announced a new policy for all new transportation projects it funds or oversees to include "complete street" features that provide safe and accessible options for people walking, biking, and taking transit. This policy will expand the availability of sustainable transportation options to help meet the State's climate, health, and equity goals.

SENATE BILL 743

Senate Bill (SB) 743, which was signed into law on September 27, 2013 and became mandatory on July 2, 2020, fundamentally changed transportation impact analysis as part of California Environmental Quality Act (CEQA). In its *Technical Advisory on Evaluating Transportation Impacts in CEQA*, the California Governor's Office of Planning and Research (OPR) provided recommendations for jurisdictions to implement SB 743-compliant transportation analyses. OPR's recommendations are not binding and lead agencies ultimately have the discretion to set or apply their own significance thresholds, provided they are based on substantial evidence. CEQA Guidelines Section 15064.3 describes how transportation impacts are to be analyzed under SB 743. It states that in general, transportation impacts are best measured by evaluating the project's vehicle miles traveled. For land use projects, vehicle miles travelled (VMT) exceeding an applicable threshold of significance may indicate a significant impact.

In October 2020, Brea adopted a resolution that conforms with SB 743, transitioning to a VMT-based method of identifying transportation impacts for CEQA compliance and committing to meet requirements of all future revisions to CEQA, consistent with the guidance provided by the State. The City of Brea Transportation Impact Assessment (TIA) guidelines require a VMT analysis to be conducted for land use projects as deemed necessary by the City and applies to projects that have the potential to increase the baseline VMT for the City of Brea.[6]

SENATE BILL 99, ASSEMBLY BILL 101

The California Active Transportation Program (ATP), established by Senate Bill 99 and Assembly Bill 101 in 2013, aims to promote active modes of transportation like biking and walking. It combines various federal and state transportation programs such as the Transportation Alternatives Program, Bicycle Transportation Account, and State Safe Routes to School into one cohesive initiative. The goal is to elevate California as a frontrunner in active transportation efforts.

REGIONAL REGULATIONS

SOUTHERN CALIFORNIA ASSOCIATION OF GOVERNMENTS (SCAG)

Founded in 1965, the Southern California Association of Governments (SCAG) is a Joint Powers Authority comprising local governments and agencies addressing regional issues. Designated both as a Metropolitan Planning Organization (MPO) under federal law and as a Regional Transportation Planning Agency and a Council of Governments under state law, SCAG covers six counties and 191 cities over 38,000 square miles. SCAG develops long-range regional transportation plans, housing allocations, and contributes to air quality management plans.

On April 4, 2024, SCAG's Regional Council adopted Connect SoCal (2024 – 2050 Regional Transportation Plan/Sustainable Communities Strategy) for federal transportation conformity purposes only. Connect SoCal outlines more than $750 billion in transportation system investments through 2050.

SCAG created the SoCal Transportation Safety Resource Hub to assist local jurisdictions in advancing transportation safety and meeting annual safety targets. It serves as a centralized source for SCAG's safety programs, data, reports, and resources. The hub includes:

/ Regional transportation safety goals and targets summary
/ Overview of SCAG's existing transportation safety conditions
/ Interactive map of SCAG's Regional High Injury Network (HIN) with downloadable data
/ Resources for local jurisdictions to develop their own HIN
/ Opportunities to engage in SCAG's ongoing safety efforts
/ Access to data, tools, funding, and resources from SCAG and other organizations.

[6] City of Brea, "Traffic Impact Analysis Guidelines – for Vehicle Miles Travelled and Level of Service Assessment", 2020.

ORANGE COUNTY TRANSPORTATION AUTHORITY

The Orange County Transportation Authority (OCTA) coordinates transportation planning efforts throughout Orange County and programs funding for project implementation. OCTA leads the following ongoing planning efforts:

- OCTA oversees Measure M2, the countywide sales tax measure to fund transportation improvements. Also known as OC GO, this program includes freeway, streets and roads, transit, and environmental projects to help relieve congestion, improve street conditions, expand transit services, synchronize traffic signals, reduce transportation costs for seniors and people with disabilities, and reduce transportation-related air and water pollution.
- OCTA prepares the Congestion Management Program (CMP), which identifies strategies to address congestion on the County's CMP network; which includes State highways and principal arterials. CMP Guidelines require analysis of the CMP network in order to measure congestion and to determine how local governments meet CMP standards and requirements. There are four CMP intersections in the City:
    - State Route (SR) 57 northbound ramps / Imperial Highway (SR 90)
    - SR 57 southbound ramps / Imperial Highway
    - State College Boulevard / Imperial Highway
    - Valencia Avenue / Imperial Highway
- OCTA administers the Master Plan of Arterial Highways (MPAH), which was established in 1956 to ensure that the County's regional arterial highway network would be planned, developed, and preserved in order to supplement the freeway system. The MPAH defines the intended functions and carrying capacities of regional roads in the County. In order to be eligible for Measure M2 (also known as OC Go) funding, a city's General Plan Circulation Element must be consistent with the MPAH; specifically, local Circulation Elements must maintain an equivalent number of minimum through lanes on each arterial highway that is included as part of the MPAH.
- OCTA's Long Range Transportation Plan (LRTP) is a long-range policy document that assesses the County's long-term transportation system and identifies regional projects in the County, which address future population, housing, and employment needs. The LRTP also serves as the County's local input to SCAG's broader RTP/SCS for Southern California. OCTA also plans, manages, and operates local transit service within Orange County.

LOCAL REGULATIONS AND PLANS

All roadways within the City are under the jurisdiction of the City, with the exception of Imperial Highway (SR 90), SR 57, and Carbon Canyon Road / Valencia Avenue (SR 142) which are under Caltrans' jurisdiction.[7]

2003 BREA GENERAL PLAN

The Brea General Plan, adopted in 2003, articulates the collective vision of the community for its future and establishes a foundational framework for guiding decisions on development, resource management, public safety, public services, and community well-being. Crafted through collaboration among residents, businesses, educators, and officials, the plan reflects the values and aspirations of Brea. The General Plan Annual Progress Report offers a yearly update on the implementation of its elements, covering activities from January to December. It highlights ongoing projects and programs aimed at enhancing Brea's appeal as a desirable place to live, work, and enjoy leisure activities. The General Plan emphasizes preserving the City's unique natural and aesthetic attributes while adapting to regional growth and evolving community needs. It serves as a policy compass, aligning actions with Brea's overarching vision of making Brea a great place to live, work, learn, and play while respecting natural resources, fostering economic vitality, and enhancing quality of life.

The existing City of Brea General Plan identifies the following goals and visions related to mobility.[8]

- To improve access to transportation, including accessible public transportation to Northwest neighborhoods;
- To Improve transportation, pedestrian, and visual connections between Downtown and the rest of the community;
- To provide for an extensive, integrated, and safe bicycle, hiking, and pedestrian network throughout the community, and to make Brea a pedestrian-friendly community;
- To ensure convenient alternative transportation modes allow for an integrated approach to addressing traffic problems;
- To maintain an effective regional transportation network;
- To provide a safe and efficient circulation system that meets the needs of the community; and
- To promote the use of alternative transportation modes such as transit, bicycling, and walking.

The current Brea General Plan makes reference to a Growth Management Element, which requires traffic LOS standards. The general target standard is LOS D for intersections and recognizes that lower LOS standards for certain intersections in urbanized areas may be appropriate if such affected roadways carry a high proportion of regional traffic.

[7] City of Brea, "Traffic", accessed May 2024, https://www.ci.brea.ca.us/1139/Traffic
[8] City of Brea, "General Plan", 2003

CITY OF BREA CONNECTING THE CORE | ACTIVE TRANSPORTATION PLAN (2017)

The Brea Connecting the Core Active Transportation Plan (ATP) was developed as phase one of the Brea Core Specific Plan effort, to study cyclist and pedestrian safety along major corridors and to explore ways to improve the safety and experience for cyclists and pedestrians within Brea's Core Area. The plan identified mobility challenges and proposed solutions to encourage walking and biking, emphasizing access for all, safety enhancements, and creative design solutions. The plan was funded through a grant from Caltrans and was completed in 2020. The Brea Connecting the Core Active Transportation Plan will allow staff to pursue grant funding for pedestrian and bicycle improvements in the Brea Core Area. The plan will also serve as a component to help update the General Plan and the Brea Core Specific Plan with respect to circulation, urban design, and bikeways. Major components of the ATP include:

- Three core elements with goals and policies for each:
  - Provide access for all users
  - Focus on safety enhancements
  - Institute creative design solutions
- A toolbox of improvements outlining facility types to improve multimodal transportation infrastructure.
- A detailed set of improvement options for ten (10) corridors in the Brea Core Area included opportunities and recommendations for potential improvements.
- Steps to implement the ATP including pursuit of funding, regional coordination, environmental review, community outreach, and improvement designs.[9]

The preparation of the new Specific Plan for the Brea Core Area will help to implement the City's long-term vision for this unique area of the City by providing specific direction for development. The Brea Core Specific Plan will incorporate recommendations from the Connecting the Core ATP in order to improve the safety and experience of cyclist and pedestrians in the area, and will build upon findings in the ATP report to address improvements to streets, sidewalks, and public spaces. The plan will evaluate and establish land use designation, zoning regulations, and design guidelines for future change to existing uses and new development. The plan provides an opportunity to continue the Brea Envisions conversation and dig deeper into the community's values and vision for the heart of the City.

BREA CAPITAL IMPROVEMENT PROGRAM (CIP)

Brea's Public Works Department plans, designs, and implements capital projects to improve and preserve community assets. The goals of the CIP are to enhance the community's quality of life, ensure a safe environment, and improve transportation, utilities, and City facilities. The CIP budget plan is both a planning and implementation document. The current seven-year CIP includes the appropriation of funds for Fiscal Year (FY) 2025-26 and FY 2026-27 with a planning horizon through 2032. The remaining five years of the CIP are not a commitment of funds but used as a long-range planning tool for subsequent investments in the City's infrastructure. There are currently 72 projects in the current 7-year CIP budget plan estimated at nearly $112 million. The CIP categories include Street Improvements, Storm Drain Improvements, Traffic Safety Enhancements, Water Improvements, Sewer Improvements, Facility Improvements, and Golf Course Improvements. Programmed transportation-related improvements include roadway rehabilitation; interchange, street and intersection improvements; traffic signal equipment upgrades; traffic signal synchronization; traffic calming improvements; and sidewalk replacement and installation.

[9] City of Brea, "Brea Connecting the Core Active Transportation Plan", January 2020.

CITY OF BREA TRANSPORTATION IMPACT ANALYSIS GUIDELINES (2020)

State and federal laws require the correlation between General Plan Land Use Element building intensities and the Circulation Element transportation network capacities. The City of Brea established Transportation Impact Analysis (TIA) Guidelines to outline the specific steps for complying with the new CEQA expectations for VMT analysis and the applicable general plan consistency requirements. A TIA is required by the City of Brea so that the impact of proposed land use modifications and development on the existing and future circulation system can be adequately assessed, and to ensure that the CEQA and relevant CMP laws and guidelines are met.[10] The City's TIA Guidelines require LOS analysis outside of CEQA to determine if a new development project would result in congestion and be inconsistent with the LOS goals in the General Plan.

As part of the North Orange County Collaborative, Brea released the North Orange County Collaborative (NOCC+) Traffic Study Screening Tool in 2020.[11] The tool assessed a project's need for further VMT analysis based on three screenings for Transit Priority Areas (TPA), Low VMT Areas, and Project Types. The City has designated the Brea Mall Transit Center as a TPA. Low VMT Areas are defined as Traffic Analysis Zones [TAZs] lower than 15% of the citywide average. As of 2020, the City of Brea General Plan buildout VMT was calculated to be 29.9 VMT per service population.[12]

It should be noted that CEQA requirements change as the CEQA Guidelines are periodically updated and/or legal opinions are rendered that change how analysis is completed. As such, the City of Brea will continually review their guidelines for applicability, and consultants should contact the City to ensure that they are applying the most recent guidelines for project impact assessment.[13]

[10] California Governor's Office of Planning Research, "Technical Advisory on Evaluating Transportation Impacts in CEQA", December 2018.
[11] City of Brea, "Transportation Impact Analysis (TIA) Guidelines", September 2020; NOCC+ is based on data from 2020 and utilizes OCTAM version 5. As such, it may require updates to align with current best practices, the latest version of OCTAM, and subsequent legal rulings.
[12] Ibid.
[13] Ibid.

Section 5 — Transportation Impact Analysis

TRANSPORTATION IMPACT ANALYSIS

This transportation impact analysis assesses Brea's transportation system relative to the State's CEQA guidelines.

ANALYSIS SCENARIOS, METHODOLOGIES, AND MODELING APPROACH

This section summarizes the approach to the VMT analyses, based on discussions with City staff and consistent with the City of Brea Transportation Impact Analysis Guidelines.[14]

ANALYSIS SCENARIOS

As part of this study, the following scenarios were developed and analyzed:

- Baseline Conditions – This scenario represents existing conditions at the time of the Notice of Preparation.
- Baseline Plus Project Conditions – This scenario represents the updated General Plan's land uses being added to the City's TAZs.
- General Plan No Buildout (2050) – This scenario represents the land uses, densities, and circulation network in the City with the current General Plan.
- General Plan Buildout (2050) Conditions – This scenario represents the buildout land uses, densities, and circulation network changes in the City as defined by the proposed General Plan Update.

The General Plan Buildout (2050) condition incorporates citywide buildout estimates that represent a hypothetical scenario of development in the City required for CEQA. Based on historical development patterns in Brea, it is likelier that development would occur at levels lower than the buildout estimate, due to factors such as standards governing density and floor area ratio, and physical factors such as topography.

ANALYSIS METHODOLOGIES

The appropriate metrics, methodologies, and standards for the analysis were developed based on the City's guidelines and in consultation with City staff.

CEQA VMT Analysis

Senate Bill 743 (SB 743) was signed into law in September 2013. It required changes to the CEQA Guidelines regarding the analysis of transportation impacts. Historically, CEQA transportation analyses of individual projects determined impacts in the circulation system in terms of roadway delay and/or capacity at specific locations. SB 743 changes included the elimination of auto delay, level of service (LOS), and other similar measures of vehicular capacity or traffic congestion as a basis for determining significant impacts and identified vehicle miles traveled (VMT) as the most appropriate metric to evaluate a project's significant transportation impacts. Since the bill has gone into effect (July 1, 2020), automobile delay, as measured by "level of service" and other similar metrics, no longer constitute a significant environmental effect under CEQA.

In September 2020, the City of Brea prepared its *Transportation Impact Analysis (TIA) Guidelines*. These serve as the City's transportation analysis guidelines and include methodologies and criteria for evaluating VMT

[14] City of Brea, "Transportation Impact Analysis (TIA) Guidelines", 2020

impacts. The City requires the analysis of citywide VMT per service population (residents + employees) to determine VMT impacts.

The specific thresholds to determine potential VMT impacts are detailed below:

- A project would result in a significant project-generated VMT impact if either of the following conditions are satisfied:
  - The baseline or cumulative project-generated VMT per service population exceeds the City of Brea General Plan Buildout VMT per service population, or
- The project's effect on VMT would be considered significant if it resulted in either of the following conditions to be satisfied:
  - The baseline or cumulative link-level boundary Citywide VMT per service population increases under the plus project condition compared to the no project condition.

MODELING APPROACH

The Orange County Traffic Analysis Model (OCTAM) is used to forecast VMT metrics for cities in Orange County. OCTAM is a conventional travel demand forecasting model that is similar in structure to most other current models used for traffic forecasting. It uses land use, socioeconomic, and network data to estimate travel patterns, roadway traffic volumes, and performance measures.

The travel demand model land use inputs (socioeconomic data) are aggregated at the transportation analysis zone (TAZ) level. A TAZ is a geographic area used in the model which contains the trip-generating inputs for that area. Population-related inputs include numbers of households by type, which are further stratified by six combinations of unit types and vehicle ownership. Non-residential inputs include building area for 14 employment categories, numbers of students for three types of schools, and acres of recreation (these categories are simplified for the buffer areas outside the Brea City limits).

Travel demand to and from areas outside of the model area are not estimated based on specific land uses, but are instead represented by base year (2024) and projected (2050) traffic volumes on the gateway roads at the model area boundary.

To account for the change in permitted land uses between the current 2003 General Plan and this proposed Focused General Plan Update, the total population and employment were determined for each TAZ that is within the city limits and provided to OCTA for coding into OCTAM. From the model, OCTA provided VMT statistics for the city's TAZs.

EXISTING VEHICLE MILES TRAVELED

This section summarizes the existing VMT levels in the City and its Sphere of Influence. The existing VMT was estimated based on outputs generated by OCTAM for current Brea conditions. Consistent with the City's guidelines, two types of VMT were determined[15]:

- **Total VMT**: This calculation represents the total daily VMT that starts and/or ends within a boundary (such as the City of Brea) but does not include VMT that travels through an area without starting or stopping there. VMT starting or ending within the City is not truncated at City boundaries.
- **VMT per Service Population**: This calculation represents the VMT for all trips that originate or end within an area, divided by that area's service population (residents + employees). VMT starting or ending within the City is not truncated at City boundaries.

At the city level, existing total daily VMT is 1,168,996 and existing VMT per service population is 31.6.[16]

[15] City of Brea, "Transportation Impact Analysis (TIA) Guidelines", 2020
[16] Note the base year received and analyzed from OCTA was 2019.

SIGNIFICANT IMPACT THRESHOLDS

VMT IMPACTS

For the purposes of this transportation impact analysis, at least one of the following criteria must be met to determine that there is a significant VMT impact, per the City of Brea Transportation Impact Analysis Guidelines:

- The baseline OR cumulative project-generated VMT per service population exceeds the City of Brea General Plan Buildout VMT per service population.
- The baseline OR cumulative link-level boundary Citywide VMT per service population increases under the plus project condition compared to the no project condition.

This impact analysis is based on citywide total VMT per service population (residents + employees).

OTHER TRANSPORTATION IMPACTS

In addition to VMT, additional transportation-related impact criteria are as follows:

- The project conflicts with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities.
- The project substantially increases hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment).
- The project results in inadequate emergency access.

ITEM 1: VMT

For the purpose of this analysis, the horizon year is considered 2050, and the project is defined as the buildout of the proposed General Plan Update.

VMT per service population (SP) represents all trips that originate or end within the area, divided by the city's service population (residents + employees). The technical data received from OCTA determining the VMT per SP is included in the Appendix.

The City of Brea General Plan Buildout VMT per service population (i.e., with the current General Plan) is 31.1. Table 4 shows the VMT per SP in the baseline project-generated and cumulative project-generated scenario and compares to the current Buildout amounts. As shown, the VMT per service populations in both the Baseline plus Project and Cumulative plus Project scenarios do not exceed the City of Brea General Plan Buildout VMT per service population. Therefore, there would not be a significant VMT impact for this threshold.

Table 4: Citywide VMT per Service Population Analysis

Scenario	VMT per SP[1]	Exceeds Brea Buildout VMT per SP (31.1)?
Baseline Plus Project	29.8	No
Cumulative Plus Project	30.0	No

[1] VMT per SP is determined from dividing the OD VMT by the sum of the population and employment in the Baseline Project-Generated model run scenario and the Cumulative Project-Generated model run scenario.

Link-level boundary citywide VMT per SP represents the total daily VMT that starts and/or ends within the City but does not include VMT that travels through the area without starting or stopping there, divided by the area's service population (residents + employees). The technical data determining the link-level boundary citywide VMT per SP is included in the Appendix.

Table 5 shows the link-level boundary citywide VMT per service population in the baseline plus project and cumulative plus project scenarios. As shown, the VMT per service populations in both scenarios do not exceed the link-level VMT per service population in the respective no-project scenarios. Therefore, there would not be significant VMT impact for this threshold.

Table 5: Link-Level Boundary Citywide VMT per Service Population Threshold

Scenario	No Project (VMT per SP)	Plus Project (VMT per SP)	Plus-Project VMT/SP Exceeds Respective No-Project VMT/SP?
Baseline	12.7	11.0	No
Cumulative	12.3	11.2	No

Overall, the General Plan Update's VMT impacts would be considered **less than significant.**

BREA CORE SPECIFIC PLAN AREA

As the Brea Core Specific Plan Area is a subset of the overall General Plan, a separate Core Area VMT analysis is not required. However, for informational purposes, the Core Area's VMT per SP, based on the overall citywide VMT, was determined.

To estimate Core Area's VMT, the proportion of the VMT that was attributable to the Core Area was identified. Using OCTAM data, the model Traffic Analysis Zones (TAZs) that were partially or completely within the Core Area, and the proportion of land uses within each TAZ, were identified. From this data, the percentage of the citywide ADT that would be generated by trips to, from, and within in the Core Area for the Cumulative No Build (i.e., with the current General Plan) and Future 2050 Plus Project scenarios were estimated. For the VMT analysis, the total VMT for each TAZ was determined and the VMT per service population was calculated based on the net change in population and employment for the portion of the TAZ within the Core Area. This data was used to determine the total VMT and VMT per service population as shown in **Table 6**. The technical analysis is included in the Appendix. As shown in the table, the VMT per SP would decrease with the Project,

Table 6: VMT per Service Population Threshold for the Brea Core Specific Plan

Scenario	VMT	Service Population	VMT Per Service Population
Cumulative No Project	728,870	20,292	35.9
Cumulative Plus Project	900,121	28,654	31.4

ITEM 2: TRANSIT, ROADWAY, BICYCLE, AND PEDESTRIAN FACILITIES

A significant project impact would occur if the project conflicts with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities. Each of these modes and facilities is reviewed for impacts below.

ROADWAYS

As land use projects throughout the City are approved and developed, the City will continue to monitor conditions at vehicular facilities to determine the appropriate timing and/or level of improvement along those facilities. In addition, the City can request project-specific circulation analyses once specific land use development projects are undergoing their review and approval processes.

The updated Mobility Element of Brea's General Plan incorporates policies that guide roadway operations, safety, design, and goods movement. Key supporting policies include:

- **M-1.2 Inter-Agency Coordination.** Engage with Federal Highway Administration (FHWA), the Southern California Association of Governments (SCAG), Orange County Transportation Authority (OCTA) for balanced multi-modal planning.
- **M-1.4 Emerging Technology.** Plan with regional partners for new transportation modes.
- **M-2.1 Roadway Requirements.** Design roads for all modes/users and maintain according to best practices.
- **M-2.2 Level of Service.** Strive to maintain acceptable level of service along City facilities per the City of Brea Transportation Impact Analysis (TIA) Guidelines.
- **M-2.3 Non-Local Traffic.** Discourage regional traffic from passing through neighborhoods.
- **M-2.4. Traffic Management.** Apply creative strategies to minimize congestion at schools and drive-throughs neighborhoods.
- **M-2.8. Truck Route Network.** Maintain and update local routes to reduce community impacts.
- **M-3.1 Complete Streets Principles.** Implement best practices for all road users.
- **M-3.5 New Mobility Technologies.** Monitor and implement tech that aids all transportation modes.
- **M-3.7 Roadway Design Principles.** Support designs that create safe, comfortable pedestrian experiences .

The General Plan Update would not be inconsistent with or in conflict with any adopted program, plan, ordinance, or policy addressing roadway operations, design, or performance. The Mobility Element establishes a policy framework that is consistent with applicable federal, state, and local roadway design and safety standards, including the City of Brea Transportation Impact Analysis (TIA) Guidelines, and provides direction to maintain acceptable roadway operations while accommodating multiple transportation modes. The General Plan Update outlines policies to guide future improvements and requires that roadway conditions be evaluated through project-specific circulation analyses at the time of development. Through continued monitoring of roadway conditions, inter-agency coordination, and implementation of traffic management strategies, the City would ensure that future development occurs in a manner consistent with adopted roadway plans and standards and would not result in conflicts with the circulation system.

TRANSIT, BICYCLE, AND PEDESTRIAN

In addition to proposed roadway classifications, the updated Mobility Element references and incorporates the City's bicycle and pedestrian plans, which direct efforts to improve non-motorized accessibility and connectivity throughout the City.

The General Plan Update also proposes development within existing and future high-quality transit areas, which can encourage less driving and more transit, bike-to-transit, and walk-to-transit trips.

The Mobility Element developed as part of the General Plan Update contains policies that support access to and the performance of public transit, bicycle, and pedestrian facilities. These policies include:

- **M-3.1 Complete Streets Principles.** Implement best practices for all road users.
- **M-3.6 Curb Management.** Adjust curb zones to match land use needs and non-motorized choices.
- **M-3.7 Roadway Design Principles.** Support designs that create safe, comfortable pedestrian experiences.
- **M-3.8 Traffic Calming.** Use context-sensitive methods to balance auto, transit, and pedestrian needs.
- **M-3.9 New Development – Multi-Modal Facilities.** Require land dedication for sidewalks and bike lanes.
- **M-4.1 System of Bikeways.** Develop a comprehensive system for commuting and recreation.
- **M-4.3 Pedestrian Connections.** Provide safe routes to Downtown and major activity centers.
- **M-4.7 Bicycle, Pedestrian, and Connectivity Improvements.** Provide secure bike parking and lighting.
- **M-4.10 Bicycle and Pedestrian Connectivity.** Plan neighborhood routes as a fully connected system.

The General Plan Update would not be inconsistent with or in conflict with any adopted program, plan, ordinance, or policy addressing the circulation system. The Mobility Element is an updated policy framework that incorporates and builds upon the City's existing transit, bicycle, and pedestrian goals and objectives. Policies in the Mobility Element promote multimodal access, connectivity, safety, and transit-supportive land use patterns, and do not propose actions that would degrade or preclude implementation of planned roadway, transit, bicycle, or pedestrian facilities. Development in high-quality transit areas and the requirement for multimodal accommodations in new development are consistent with State and local complete streets and sustainable transportation policies, and would not conflict with adopted circulation standards or performance objectives.

Therefore, the General Plan Update's impacts related to roadways, transit, bicycle, and pedestrian facilities would be considered **less than significant**.

ITEM 3: GEOMETRIC DESIGN AND INCOMPATIBLE USE HAZARDS

A significant project impact would occur if the project substantially increases hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment). Note, the General Plan Update is a programmatic level document; increased hazards due to geometric design features are typically assessed at the project level. As individual sites are developed and undergo City review and approval, the City can require site plan, access, and circulation analysis to ensure that neither on-site designs nor the interaction with City streets will result in hazardous geometric design features.

The types of uses included within the City of Brea as part of the General Plan Update are generally similar to existing and surrounding uses and thereby are compatible with the existing uses in the Plan area and in the surrounding area.

In addition, the Mobility Element developed as part of the General Plan Update contains policies in support of roadway network safety and reducing design hazards, including:

- **M-1.4 Emerging Technology.** Plan with regional partners for new transportation modes.
- **M-2.1 Roadway Requirements.** Design roads for all modes/users and maintain according to best practices.
- **M-2.8 Truck Route Network.** Maintain and update local routes to reduce community impacts.
- **M-3.1 Complete Streets Principles.** Implement best practices for all road users.
- **M-3.5 New Mobility Technologies.** Monitor and implement tech that aids all transportation modes.

- **M-3.9 New Development – Multi-Modal Facilities.** Require land dedication for sidewalks and bike lanes.

Therefore, the General Plan Update's impacts related to geometric design and incompatible use hazards would be considered **less than significant**.

ITEM 4: EMERGENCY ACCESS

A significant project impact would occur if the results in inadequate emergency access. Note that the General Plan Update is a programmatic level document; emergency accessibility is typically assessed at the project level. As individual sites are developed and undergo City review and approval, the City can require site plan, access, and circulation analysis to ensure that neither on-site designs nor the interaction with City streets will result in inadequate emergency access.

In Brea, emergency access and public safety are addressed through the General Plan, including within the Mobility Element. The Mobility Element provides a framework to ensure that development and transportation planning support adequate emergency response capabilities.

The Mobility Element supports emergency access through roadway design, traffic management, and multimodal system planning that ensures access for emergency vehicles and clear evacuation paths. The Element emphasizes maintaining a connected and resilient street network that accommodates all users, including emergency responders, even in high-density or transit-oriented areas.

Relevant supporting policies include:

- **M-1.2 Inter-Agency Coordination.** Engage with FHWA, SCAG, and OCTA for balanced multi-modal planning..
- **M-2.8 Evacuation Routes.** Maintain and update local routes to reduce community impacts.
- **M-3.9 New Development – Multi-Modal Facilities.** Require land dedication for sidewalks and bike lanes.

In addition, the Mobility Element is supported by the General Plan's Public Safety Element, which outlines strategies to mitigate risks associated with natural hazards, including wildfires, floods, and earthquakes.

Key Safety Element policies and programs include:

- **PS-1.3 City Standards.** Require development in FHSZs to meet designated standards.
- **PS-1.5 Development in VHFHSZs.** Minimize new residential development in VHFHSZs.
- **PS-1.6 Fire Protection Plans.** Require adequate plans and emergency access for VHFHSZ projects.
- **PS-1.9 Fire Hazard Reduction Projects.** Maintain community fire breaks and road clearance.
- **PS-1.10 Standards for New Development.** Require brush management and visible signage/addressing.
- **PS-1.14 Access.** Require sufficient ingress/egress for firefighting activities.
- **PS-1.15 Education**. Educate community on fire safety, focusing on at-risk populations.
- **PS-1.17 Fire and Building Codes.** Require compliance with current California Codes.
- **PS-1.18 Critical Facilities.** Locate new essential facilities outside of VHFHSZs when feasible.
- **PS-1.19 Mutual Aid.** Maintain disaster response agreements with state and county partners.
- **PS-6.5 Automatic and Mutual Aid.** Participate in aid agreements with adjacent providers. s.
- **PS-6.6 Evacuation Routes.** Work with Fire/Police to define standards and assessment ranges..
- **PS-6.8 Collaboration.** Link emergency services with mitigation programs..
- **PS-6.10 Volunteer Service.** Support programs like CERT training..
- **PS-6.11 Warning Systems.** Maintain and upgrade mass communications systems..

The General Plan Update would not be inconsistent with or in conflict with any adopted program, plan, ordinance, or policy addressing emergency access and response. The Mobility Element and Public Safety Element collectively establish policies that ensure roadway design, circulation planning, and development

review processes maintain adequate access for emergency vehicles and evacuation needs. These policies are consistent with applicable local and regional requirements, including roadway standards, evacuation route planning, and fire safety regulations codified in the Brea Municipal Code. The General Plan Update does not propose physical changes that would obstruct emergency access, and emergency access adequacy is evaluated and enforced through subsequent project-level review. Implementation of the General Plan Update would not result in inadequate emergency access or conflict with adopted emergency response and circulation policies.

Therefore, the General Plan Update's impacts related to emergency access would be considered **less than significant**.

Section 6 — Conclusions

CONCLUSIONS

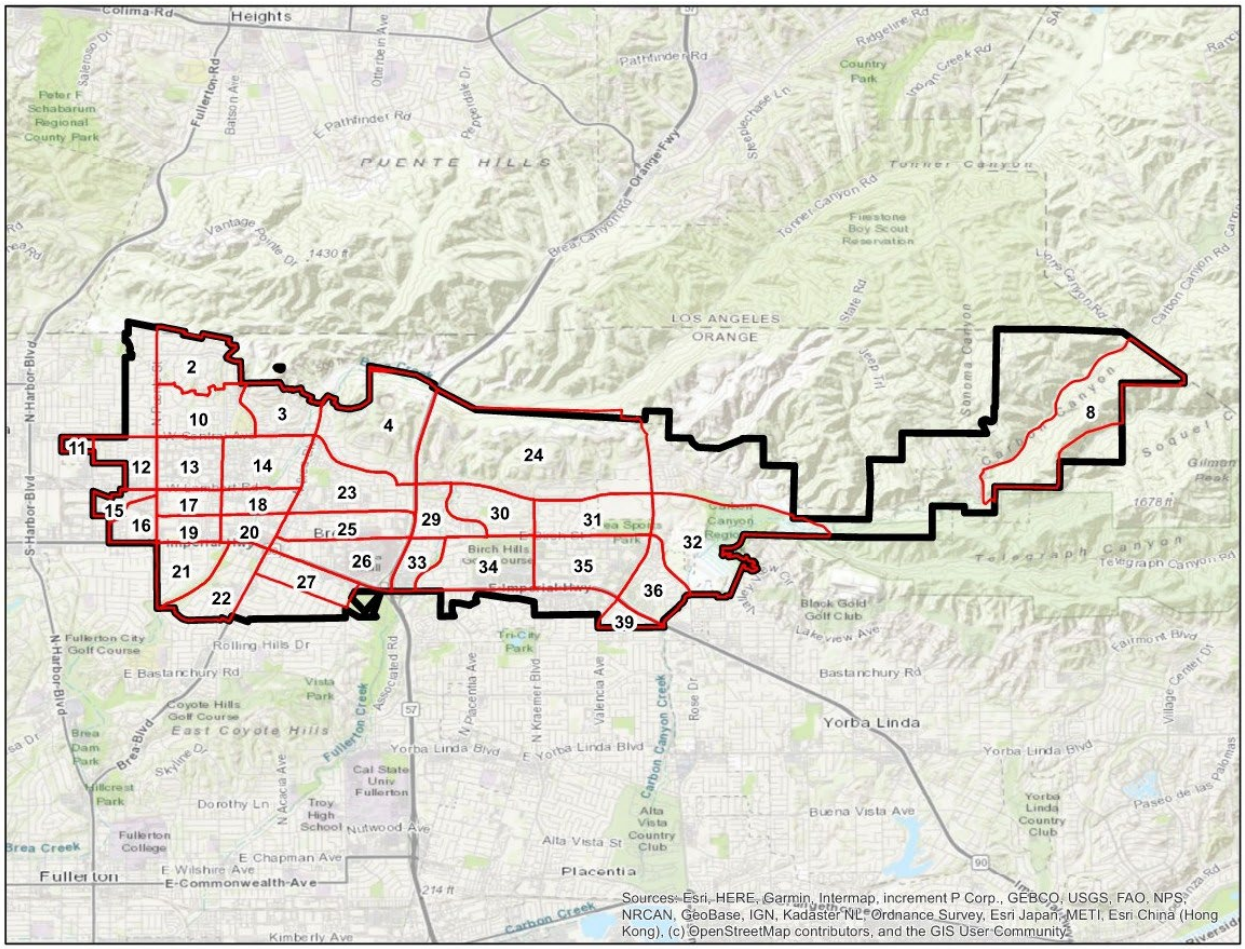
SIGNIFICANT TRANSPORTATION IMPACTS

The California Environmental Quality Act (CEQA) transportation impact analysis of the General Plan Update determined that impacts would be less than significant for the following topics:

- Vehicle miles traveled (VMT)
- Transit, roadway, bicycle, and pedestrian facilities
- Geometric design and incompatible use hazards
- Emergency access

Appendix 1 — VMT Technical Data

OCTA TAZs WITHIN CITY LIMITS



2050 Current Plan (City of Brea General Plan Buildout VMT)

TAZ	Time Period	OD VMT	POPULATION	EMPLOYMENT	SERVICE POP
2	Daily	53,747	1,798	113	1,911
3	Daily	87,032	2,113	695	2,808
4	Daily	68,792	2,241	222	2,463
8	Daily	1,254	28	7	35
10	Daily	57,391	2,513	233	2,746
11	Daily	42,066	1,433	527	1,960
12	Daily	52,393	1,841	620	2,461
13	Daily	92,024	16	3,690	3,706
14	Daily	203,152	3,733	3,488	7,221
15	Daily	84,762	516	2,878	3,394
16	Daily	36,445	0	1,158	1,158
17	Daily	26,785	5	1,199	1,204
18	Daily	41,393	532	1,035	1,567
19	Daily	43,228	17	1,291	1,308
20	Daily	216,425	432	4,320	4,752
21	Daily	31,282	1,096	196	1,292
22	Daily	92,835	3,340	623	3,963
23	Daily	150,641	1,797	3,228	5,025
24	Daily	284,833	3,560	4,480	8,040
25	Daily	144,934	2,958	2,628	5,586
26	Daily	428,343	1,281	7,635	8,916
27	Daily	66,647	1,541	1,040	2,581
29	Daily	60,607	2,013	432	2,445
30	Daily	55,437	2,089	287	2,376
31	Daily	54,213	2,509	314	2,823
32	Daily	51,250	1,724	55	1,779
33	Daily	69,072	523	1,030	1,553
34	Daily	119,757	1,438	1,096	2,534
35	Daily	259,658	0	7,115	7,115
36	Daily	106,321	3,121	817	3,938
39	Daily	34,082	1,417	164	1,581
	TOTALS	**3,116,801**	**47,625**	**52,616**	**100,241**

VMT	**3,116,801**
Service Population	**100,241**
VMT per SP	**31.1**

Baseline Project-Generated Scenario

TAZ	Time Period	OD VMT	POPULATION	EMPLOYMENT	SERVICE POP
2	Daily	56,299	2,233	0	2,233
3	Daily	85,287	2,666	262	2,928
4	Daily	82,845	2,910	184	3,094
8	Daily	27,123	790	0	790
10	Daily	56,113	2,754	13	2,767
11	Daily	9,328	203	0	203
12	Daily	50,063	2,196	743	2,939
13	Daily	127,118	0	6,994	6,994
14	Daily	190,672	3,210	5,523	8,733
15	Daily	46,280	0	2,273	2,273
16	Daily	66,289	0	3,724	3,724
17	Daily	72,280	0	3,843	3,843
18	Daily	56,620	546	2,243	2,789
19	Daily	33,832	0	1,684	1,684
20	Daily	169,706	1,786	1,849	3,635
21	Daily	41,960	1,230	315	1,545
22	Daily	79,230	2,349	595	2,944
23	Daily	177,395	1,739	4,795	6,534
24	Daily	177,477	3,787	1,357	5,144
25	Daily	141,519	3,989	1,716	5,705
26	Daily	260,936	4,840	3,331	8,171
27	Daily	89,131	2,107	887	2,994
29	Daily	69,006	2,488	434	2,922
30	Daily	42,228	1,825	109	1,934
31	Daily	28,935	1,824	168	1,992
32	Daily	141,634	2,030	1,309	3,339
33	Daily	90,404	1,172	746	1,918
34	Daily	46,786	2,287	3	2,290
35	Daily	768,632	2,174	14,300	16,474
36	Daily	273,169	2,911	3,973	6,884
39	Daily	12,058	465	51	516
	TOTALS	**3,570,351**	**56,511**	**63,424**	**119,935**

VMT	**3,570,351**
Service Population	**119,935**
VMT per SP	**29.8**

Cumulative Project-Generated Scenario

TAZ	Time Period	OD VMT	POPULATION	EMPLOYMENT	SERVICE POP
2	Daily	62,076	2,233	0	2,233
3	Daily	89,031	2,666	262	2,928
4	Daily	86,958	2,910	184	3,094
8	Daily	28,330	790	0	790
10	Daily	62,554	2,754	13	2,767
11	Daily	9,124	203	0	203
12	Daily	51,594	2,196	743	2,939
13	Daily	122,950	0	6,994	6,994
14	Daily	191,390	3,210	5,523	8,733
15	Daily	47,295	0	2,273	2,273
16	Daily	62,909	0	3,724	3,724
17	Daily	70,036	0	3,843	3,843
18	Daily	55,668	546	2,243	2,789
19	Daily	32,687	0	1,684	1,684
20	Daily	171,121	1,786	1,849	3,635
21	Daily	42,664	1,230	315	1,545
22	Daily	80,815	2,349	595	2,944
23	Daily	177,133	1,739	4,795	6,534
24	Daily	182,122	3,787	1,357	5,144
25	Daily	145,152	3,989	1,716	5,705
26	Daily	264,930	4,840	3,331	8,171
27	Daily	90,724	2,107	887	2,994
29	Daily	71,324	2,488	434	2,922
30	Daily	44,460	1,825	109	1,934
31	Daily	32,833	1,824	168	1,992
32	Daily	141,726	2,030	1,309	3,339
33	Daily	91,808	1,172	746	1,918
34	Daily	51,478	2,287	3	2,290
35	Daily	755,388	2,174	14,300	16,474
36	Daily	273,790	2,911	3,973	6,884
39	Daily	12,759	465	51	516
	TOTALS	**3,602,829**	**56,511**	**63,424**	**119,935**

VMT	**3,602,829**
Service Population	**119,935**
VMT per SP	**30.0**

Link-Level VMT

Scenario	Total VMT	Population	Employment	Link-Level VMT/SP
Baseline	1,168,966	43,195	48,776	12.7
Baseline Project-Generated	1,314,010	56,511	63,424	11.0
Cumulative	1,235,653	47,625	52,616	12.3
Cumulative Project-Generated	1,343,583	56,511	63,424	11.2

Brea Core Specific Plan Analysis

Baseline

SP Factor	TAZ	OD VMT	Updated OD VMT	Population	Updated Pop	Employment	Updated Employment
1.00	18	38,897	38,897	347	347	974	974
0.36	20	212,346	76,179	410	147	4,064	1,457
0.02	22	89,584	1,554	3,371	58	609	10
0.86	23	137,089	117,601	1,972	1,691	2,836	2,432
0.69	25	146,635	101,647	2,046	1,418	2,889	2,002
0.39	26	438,075	172,199	1,251	491	7,434	2,922
0.25	27	63,934	15,918	1,467	365	1,015	252
0.44	33	61,031	26,902	574	253	901	397
		Total	**550,902**		**4,772**		**10,450**
		VMT / SP	**36.2**				

2050 No-Project

SP Factor	TAZ	OD VMT	Updated OD VMT	Population	Updated Pop	Employment	Updated Employment
1.00	18	41,392	41,392	532	532	1,035	1,035
0.54	20	216,424	116,275	432	232	4,320	2,320
0.04	22	92,835	3,554	3,340	127	623	23
0.92	23	150,641	139,292	1,797	1,661	3,228	2,984
0.81	25	144,933	117,619	2,958	2,400	2,628	2,132
0.62	26	428,343	265,369	1,281	793	7,635	4,730
0.27	27	6,6647	18,251	1,541	422	1,040	284
0.39	33	69,072	27,113	523	205	1,030	404
		Total	**728,870**		**6,375**		**13,916**
		VMT / SP	**35.9**				

2050 Project-Generated

SP Factor	TAZ	OD VMT	Updated OD VMT	Population	Updated Pop	Employment	Updated Employment
0.99	18	55,668	55,665	546	545	2,243	2,242
0.99	20	171,121	171,098	1,786	1,785	1,849	1,848
0.06	22	80,815	4,567	2,349	132	595	33
0.76	23	177,132	134,596	1,739	1,321	4,795	3,643
0.99	25	145,151	145,146	3,989	3,988	1,716	1,715
0.99	26	264,930	264,903	4,840	4,839	3,331	3,330
0.57	27	90,724	52,112	2,107	1,210	887	509
0.78	33	91,808	72,031	1,172	919	746	585
		Total	**900,121**		**14,744**		**13,910**
		VMT / SP	**31.4**				

Appendix I. Native American Heritage Commission Sacred Lands File Result

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NATIVE AMERICAN HERITAGE COMMISSION

CHAIRPERSON
Reginald Pagaling
Chumash

VICE-CHAIRPERSON
Buffy McQuillen
Yokayo Pomo, Yuki, Nomlaki

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Pauma-Yuima Band of Luiseño Indians

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Vacant

ACTING EXECUTIVE SECRETARY
Michelle Carr

NAHC HEADQUARTERS
1550 Harbor Boulevard
Suite 100
West Sacramento,
California 95691
(916) 373-3710
nahc@nahc.ca.gov

August 7, 2025

Elizabeth Kim
Harris & Associates

Via Email to: Elizabeth.Kim@weareharris.com

Re: Tribal Consultation Under SB18, Brea Focused General Plan Update and Brea Core Specific Plan Project, Orange County

To Whom It May Concern:

Pursuant to your request, attached is a consultation list of tribes with traditional lands or cultural places located within the boundaries of the above referenced jurisdiction. Additionally, a search of the Native American Heritage Commission (NAHC) Sacred Lands File (SLF) was completed. The results were negative. Be aware that tribes do not always record their sacred sites in the SLF, nor are they required to do so. As such, an SLF search is not a substitute for consultation with all tribes that are traditionally and culturally affiliated with a geographic area. Please contact all of the listed tribes as they may have information about sacred sites within the jurisdiction that is not listed with the NAHC.

Additionally, the NAHC recommends that agencies include with their notification letters, information regarding any cultural resources assessment that has been completed for the jurisdiction such as:

1. The results of any record search that may have been conducted at an Information Center of the California Historical Resources Information System (CHRIS), including, but not limited to:

    - A listing of any and all known cultural resources that have already been recorded or are adjacent to the APE, such as known archaeological sites;
    - Copies of any and all cultural resource records and study reports that may have been provided by the Information Center as part of the records search response;
    - Whether the records search indicates a low, moderate or high probability that unrecorded cultural resources are located in the jurisdiction; and
    - If a survey is recommended by the Information Center to determine whether previously unrecorded cultural resources are present.

2. The results of any archaeological inventory survey that was conducted, including:

    - Any report that may contain site forms, site significance, and suggested mitigation measures.

All information regarding site locations, Native American human remains, and associated funerary objects should be in a separate confidential addendum, and not be made available for public disclosure in accordance with Government Code §6254.10.

3. The result of the Sacred Lands File (SLF) check conducted through the Native American Heritage Commission.

4. Any ethnographic studies conducted for any area within the jurisdiction; and

5. Any geotechnical reports regarding all or part of the jurisdiction.

Lead agencies should be aware that records maintained by the NAHC and CHRIS are not exhaustive. A tribe may be the only source of information regarding the existence of a tribal cultural resource, which is why consultation is so vital.

This information will aid tribes in determining whether to request formal consultation. If consultation is requested, having the information beforehand will help to facilitate the process.

If you receive notification of a change of address or phone number from a tribe, please inform the NAHC. With your assistance, we can assure that our consultation list remains current.

If you have any questions or need additional information, please contact me at Andrew.Green@nahc.ca.gov.

Sincerely,

Andrew Green

Andrew Green
Cultural Resources Analyst

Attachment

Appendix J. Water System Utility Impact Study

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Harris & Associates

TECHNICAL MEMORANDUM

To: De Novo Planning Group
From: Harris & Associates
RE: Water System Utility Impact Study for the Brea Core Specific Plan
Date: February 6, 2026

1. Introduction

The City of Brea (City) is developing the Brea Core Specific Plan (BCSP) as part of their Focused General Plan Update. The BCSP is generally bounded by Lambert Road to the north, Imperial Highway (SR-90) to the south, Berry Street to the west, and SR-57 to the east. The BCSP will increase the number of residential units and allowable non-residential square footage as summarized in **Table 1**.

Table 1. Proposed BCSP Land Use Change Summary

Land Use Designation	Existing Land Use	Proposed Land Use
Residential Units	1,417	4,752
Non-Residential Square Footage	5,113,863	6,379,588

This Technical Memorandum documents Harris and Associates' (Harris) analysis of the impacts on the City's public water system from incremental water demand changes associated with allowable BCSP land uses at a programmatic level. The incremental impact is compared with existing land use assumptions and findings of the "existing system scenario" in the City's Water Master Plan (WMP, 2021). Hydraulic modeling of the water system was not included in the scope of this work.

2. Existing Water System Description

The BCSP area is served by the City's water system, which receives purchased water from the California Domestic Water Company (CDWC) and the Municipal Water District of Orange County (MWDOC). The BCSP area lies within the City's Pressure Zone 515, which is supplied by the Berry Street Pump Station, which pumps from the Berry Street Reservoir, and by PRVs connected to higher zones. **Figure 1** illustrates the water system within the BCSP area.

3. Water System Performance Criteria

The water system is evaluated under several criteria to confirm that the incremental BCSP water demand changes can be adequately served. The assessment considers impacts on hydraulic performance (e.g., pressure and velocity), water supply capacity, required storage, booster pump station capacities, and available fire flow.

The analysis applies the following WMP criteria:

- Minimum static pressure of 40 psi during average day demand (ADD), maximum day demand (MDD), and peak hour demand (PHD)
- Maximum pressure of 125 psi at all service connections
- Minimum residual pressure of 20 psi during fire flow (FF)
- Maximum pipe velocity of 7 feet per second (fps) during PHD

- Maximum pipe velocity of 15 fps during FF plus MDD
- Booster pump stations sized to meet MDD with the largest pump out of service
- Non-emergency water supply capacity sufficient to meet system MDD with the largest single sources unavailable
- MDD peaking factor: 1.59 x ADD
- PHD peaking factor: 3.00 x ADD

4. Existing Water System Deficiencies Within the BCSP Area

According to the WMP, the existing system within the BCSP area meets most design criteria. No system deficiencies were identified related to pressure, velocity, water supply, fire flow, or water storage. However, the WMP provided recommendations for the Berry Street Booster Pump Station to aid in meeting the dependent MDD in both the 790 and 515 pressure zones. The WMP identified that in order to meet dependent MDD in the 790-pressure zone, all the pumps must be active at the Berry Street Booster Pump Station. An additional high-pressure pump was recommended to be added to the station with a minimum capacity of 1,191 gpm to address this. To meet the dependent MDD in the 515-pressure zone, an additional low-pressure pump was also recommended to be added to this station with a minimum capacity of 1,424 gpm.

5. Water Demand Changes

The incremental change in water demand between existing conditions and BCSP land uses is estimated by applying water duty factors to each land use type. All duty factors were taken from the WMP, except where otherwise noted in **Table 2.** These factors were used for the existing and proposed land uses. The WMP describes the development of these duty factors based on customer meter usage data. **Figure 2** presents the existing land use adopted from the WMP, **Figure 3** shows the BCSP land uses, and **Figure 4** identifies the parcels with land use changes.

Table 2. Water Duty Factors

Land Use Type	Land Use	Water Duty Factor (gpm/AC)	Source
Single-Family Residential	R-1, Single-Family Residential	1.28	WMP
	R-1-5000, Single-Family Residential 5000	1.28	WMP
High Density Residential	R-3, Multiple Family	2.14	WMP
Business/Commercial	C-G, General Commercial	0.59	WMP
	C-C, Major Shopping Center	0.59	WMP
	C-P, Administrative and Professional Office	0.59	WMP
Industrial	C-M, Industrial Commercial	0.81	WMP
	M-1, Light Industrial	0.81	WMP
	M-2, General Industrial	0.81	WMP
Parks	P/R/OS-PR, Parks, Recreation/Open Space-Parks	0	Estimated[1]
Flood Plain	FP, Flood Plain	0	Estimated[1]
Public Facilities	PF, Public Facilities	0.83	Estimated[2]
Mixed Use	MU-1, Mixed Use I	0.92	WMP
	MU-2, Mixed Use II	0.92	WMP
	MU-3, Mixed Use III	0.92	WMP
	Mixed Use 18	0.92	Estimated[3]
	Mixed Use 50	0.92	Estimated[3]

[1] Assumed to have negligible water demand based on the land use and location
[2] Assumed to have the same water duty factor as schools tabulated in the WMP based off the land use and location
[3] MU-1 and MU-3 factors were used for Mixed Use 50 and Mixed Use 18, respectively, aligning with their allowable housing

The incremental change in water demand between existing and BCSP land uses is provided in the attached **Table A1**. Overall, the BCSP is estimated to increase ADD, MDD, and PHD by 4.2% compared to existing land use. A summary of these estimates is presented in **Table 3.**

Table 3. BCSP Incremental Water Demand Change

City Imported Capacity (gpm)	Existing (gpm)	BCSP (gpm)	BCSP – Existing (gpm)	% Increase
ADD	596.27	621.13	24.86	4.2%
MDD	948.07	987.60	39.52	4.2%
PHD	1788.81	1,863.39	74.57	4.2%

6. Water Supply Impacts

The anticipated increase in water demand from the BCSP is compared with the City's existing supply capacity to confirm that the total MDD can be met with the largest single source out of service. **Table 4** summarizes the existing MDD and incremental MDD increase associated with BCSP land uses. This analysis indicates that sufficient supply is available to meet the projected higher demand, as the City's available capacity is larger than the demand.

Table 4. Water Supply Analysis

City Imported Capacity (gpm)	Capacity with largest single source out of service (gpm)	Existing MDD (gpm)	With BCSP MDD (gpm)
23,697	15,708	8,615	8,655

7. Water Storage Impacts

The City's water storage requirements are determined by pressure zone and account for operational needs (supply and demand equalization), fire flow, and emergency storage. These requirements were evaluated with the incremental BCSP water demand increase and are summarized in **Table 5**. Storage needs for Pressure Zone 515, where the BSCP is located, are included within the requirements for Pressure Zone 790 because Pressure Zone 515 is supplied by PRVS from Zone 750 and does not have dedicated storage facilities.

Existing storage requirements total 16.48 million gallons (MG) and increases slightly to 16.58 MG with the BCSP demand. With 25.00 MG of available storage, the system has sufficient storage capacity to accommodate the BCSP land uses.

Table 5. Water Storage Analysis (Zone 750)

Land Use Scenario	Storage Volume Available (Million Gallons)	ADD (MGD)[2]	MDD (MGD)[2]	Fire Storage[1]	Operational (30% of MDD) (MG)	Emergency (2 x ADD) (MG)	Required Storage Total (MG)	Surplus Capacity (MG)
Existing	25.00	6.27	9.96	0.96	2.99	12.53	16.48	8.52
With BCSP		6.31	10.02	0.96	3.00	12.62	16.58	8.42

[1] Fire storage requirement was calculated as 4,000 gpm for 4 hours based on the highest fire flow requirement
[2] The incremental BCSP in units of million gallons per day (MGD) for ADD is 0.036 MGD and 0.057 MGD for MDD

8. Booster Pump Capacity Impact

The WMP provided recommendations for the Berry Street Booster Pump Station to aid in meeting the dependent MDD in both the 790 and 515 Pressure Zones, including the addition of a high-pressure pump with a minimum capacity of 1,191 gpm for the 790 Pressure Zone and the addition of a low-pressure pump with a minimum capacity of 1,424 gpm. **Table 6** summarizes the incremental MDD increase associated with the BCSP relative to these pumping capacity recommendations.

Table 6. Berry Street Booster Pump Capacity (to Pressure Zone 515)

Water Demand Scenario	Initial Capacity (gpm)	MDD (gpm)	Surplus Capacity (gpm)
Existing Land Use	2,000	3,424	(-1,424)
With BCSP Land Use		3,520[1]	(-1,463)

[1] Estimated as existing plus the BCSP incremental MDD of 39.52 gpm

9. Fire Flow Requirement Impacts

Fire flow requirements by land use were taken from the WMP and used to assess potential increases associated with the proposed BCSP land uses. **Table 7** summarizes the changes in land use from existing to BCSP and the corresponding required fire flow rates. An increase in fire flow requirements was identified for parcels with land use changes from business/commercial use to mixed use. Locations of these parcels are shown in **Figure 5**. As development plans become available for these areas, hydrant flow testing is recommended to confirm that the system can meet the potentially higher fire flow needs. While the mixed-use fire flow requirement in **Table 7** is used for planning purposes here, project-specific building features and uses may also affect the required fire flow and should be evaluated accordingly.

Table 7. Fire Flow Requirement Changes

Existing Land Use Description	Existing Minimum Fire Flow (gpm)	Existing Minimum Duration (hrs)	BCSP Land Use Description	BCSP Minimum Fire Flow (gpm)	BCSP Minimum Duration (hrs)
Business/Commercial	2500	2	Business/Commercial	2500	2
			Mixed Use	4000	4
High Density Residential	4000	4	High Density Residential	4000	4
			Mixed Use	4000	4
Industrial	4000	4	Industrial	4000	4
			Flood Plain	0	0
			Mixed Use	4000	4
Mixed Use	4000	4	Mixed Use	4000	4
Public Facilities	3500	4	Public Facilities	3500	4
Single-Family Residential	1500	2	Single-Family Residential	1500	2

10. Summary of Findings

Based on existing land use from the WMP, the BCSP is estimated to increase water demand by 4.2%. The City's current water supply and storage capacities are sufficient to meet this additional demand. However, the WMP provided recommendations for the Berry Street Booster Pump Station, which services Pressure Zone 515 (encompassing the BCSP area), including the addition of a high-pressure pump to the 790 Pressure Zone and a

low-pressure pump to the 515 Pressure Zone to meet dependent MDD in each zone. Any upgrades to this station should account for the potential additional BCSP demand. Fire flow requirements are also higher under the BCSP land use, and it is recommended that actual available fire flow be verified for new developments that may have increased requirements.

To assess the contribution of individual new developments to the upgrades needed at the pump station or potential fire flow inadequacies that are determined through fire flow testing, updated modeling should be conducted once detailed development plans are available. This modeling can identify the required upgrades and associated costs. With this information, potential developer impact fees could be determined for new development or redevelopment within the BCSP area.

11. References

City of Brea Water Master Plan, Prepared by Civiltec Engineering inc., May 2021

Table A1: Incremental Water Demand Changes Within the BCSP Area

Existing Land Use Designation	BCSP Land Use Designation	Area (Acres)	Existing Land Use Water Demand (gpm)	BCSP Land Use Water Demand (gpm)	Difference BCSP – Existing (gpm)	% Change
C-C, Major Shopping Center	C-C, Major Shopping Center	14.5	8.57	8.57	0.00	0.0%
	Mixed Use 50	14.3	8.43	13.15	4.72	55.9%
C-G, General Commercial	C-G, General Commercial	3.7	2.16	2.16	0.00	0.0%
	Mixed Use 18	7.4	4.37	6.81	2.44	55.9%
	Mixed Use 50	54.0	31.84	49.64	17.81	55.9%
C-M, Industrial Commercial	C-M, Industrial Commercial	11.8	9.58	9.58	0.00	0.0%
	M-1, Light Industrial	6.2	5.03	5.03	0.00	0.0%
	Mixed Use 50	7.7	6.23	7.08	0.85	13.6%
C-P, Administrative and Professional Office	C-P, Administrative and Professional Office	2.0	1.19	1.19	0.00	0.0%
	Mixed Use 18	2.0	1.16	1.80	0.65	55.9%
	Mixed Use 50	3.3	1.93	3.00	1.08	55.9%
FP, Flood Plain	FP, Flood Plain	10.4	0.00	0.00	0.00	0.0%
M-1, Light Industrial	M-1, Light Industrial	60.1	48.66	48.66	0.00	0.0%
M-2, General Industrial	M-2, General Industrial	52.7	42.69	42.69	0.00	0.0%
MU-1, Mixed Use I	Mixed Use 50	131.9	121.39	121.39	0.00	0.0%
MU-2, Mixed Use II	Mixed Use 50	22.9	21.08	21.08	0.00	0.0%
MU-3, Mixed Use III	Mixed Use 18	5.7	5.23	5.23	0.00	0.0%
P/R/OS-PR, Parks/Recreation/Open Space-Parks/Recreation	P/R/OS-PR, Parks/Recreation/Open Space-Parks/Recreation	19.9	0.00	0.00	0.00	0.0%
PF, Public Facilities	PF, Public Facilities	23.4	19.41	19.41	0.00	0.0%
R-1, Single-Family Residential	R-1, Single-Family Residential	84.7	108.38	108.38	0.00	0.0%
	P/R/OS-PR, Parks/Recreation/Open Space-Parks/Recreation	1.9	2.48	0.00	-2.48	-100.0%
R-3, Multiple Family	Mixed Use 18	0.2	0.34	0.15	-0.20	-57.0%
	R-3, Multiple Family	68.3	146.14	146.14	0.00	0.0%
		608.8				
	ADD Totals	-	**596.27**	**621.13**	**24.86**	**4.2%**
	MDD Totals	-	**948.07**	**987.60**	**39.52**	**4.2%**
	PHD Totals	-	**1788.81**	**1863.39**	**74.57**	**4.2%**

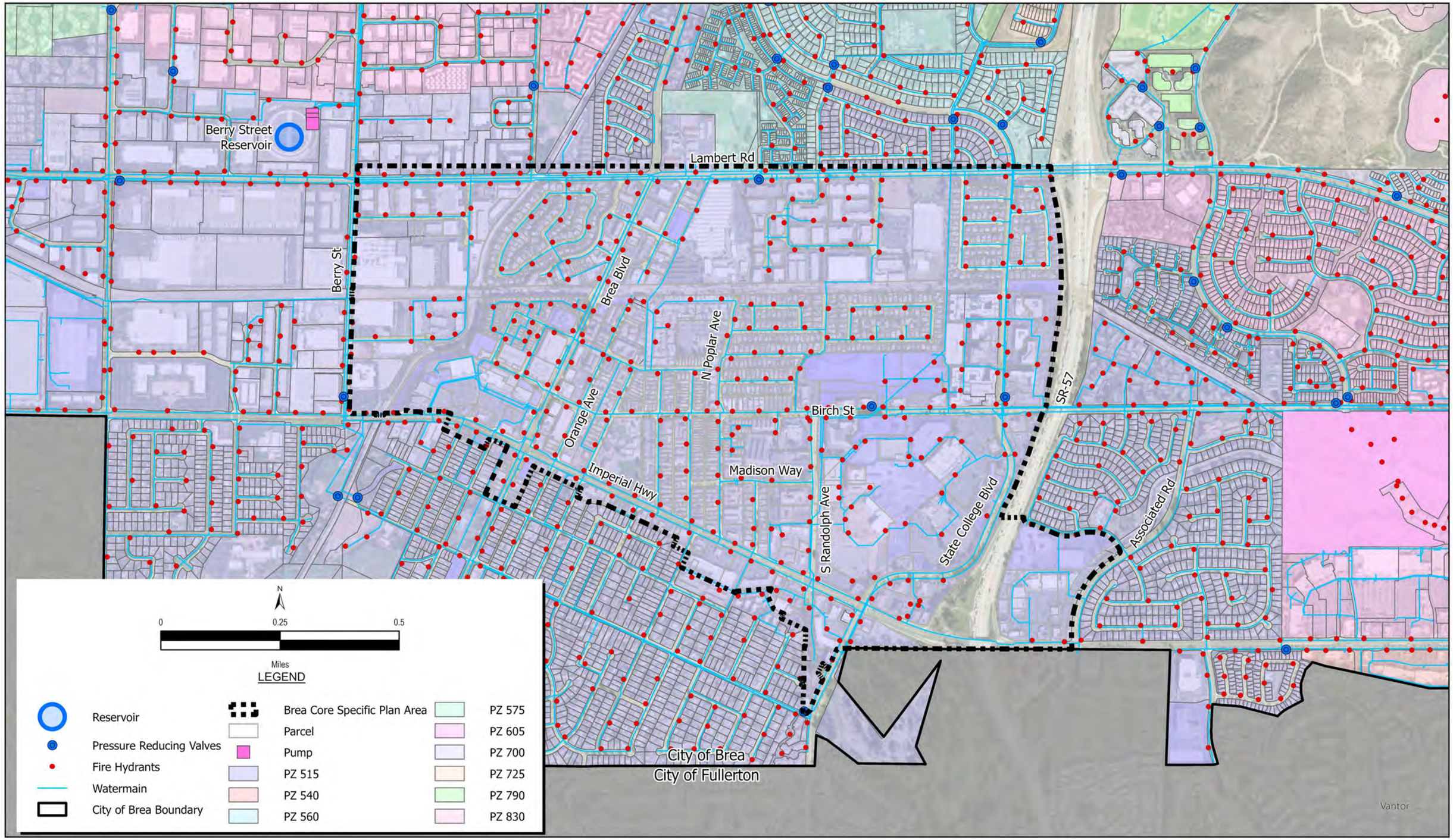


Figure 1

Existing Water Distribution System Within BCSP Area

Water Impact Study - Brea Core Specific Plan

Harris & Associates

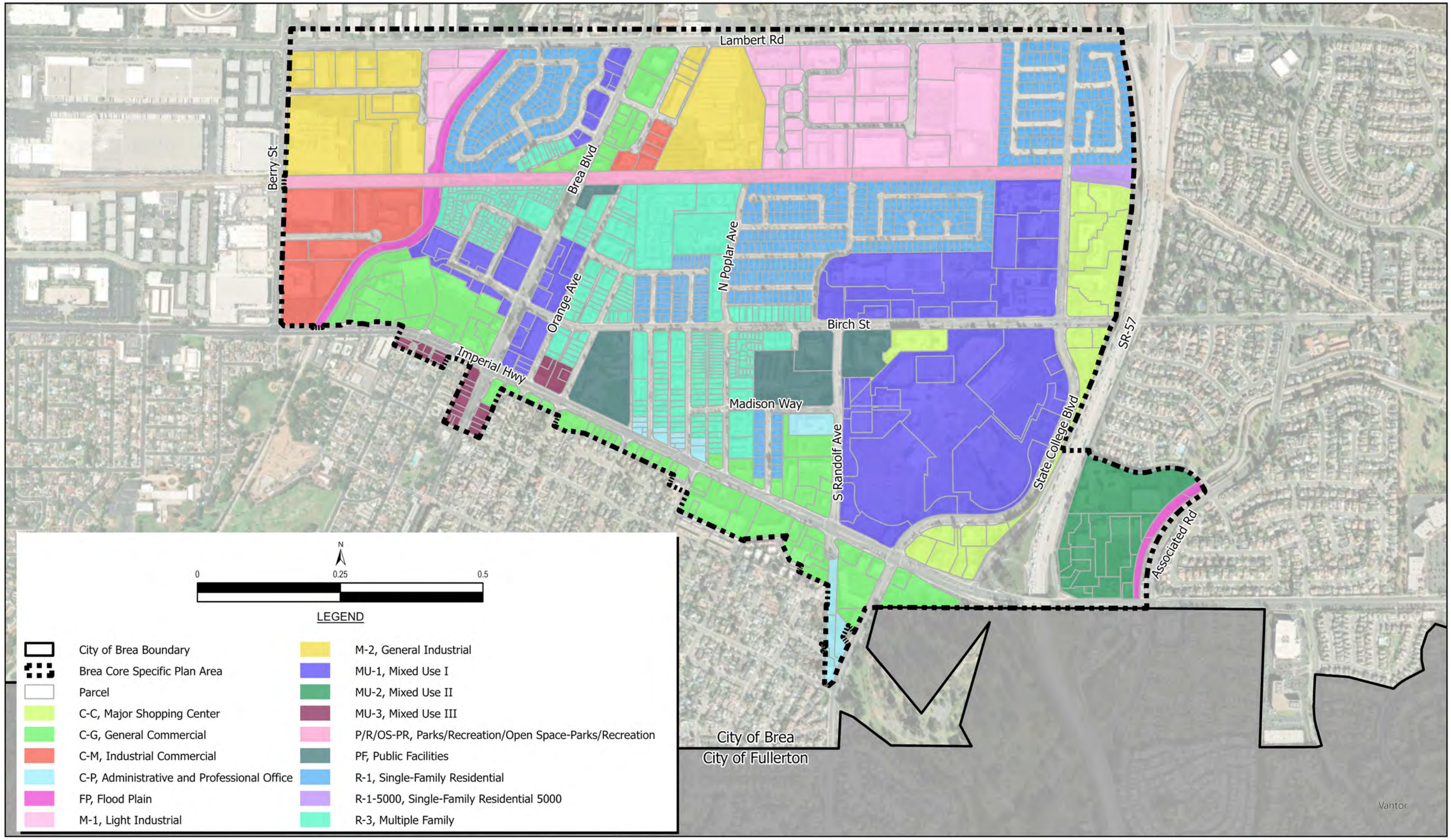


Figure 2

Existing Land Use

Water Impact Study - Brea Core Specific Plan

Harris & Associates

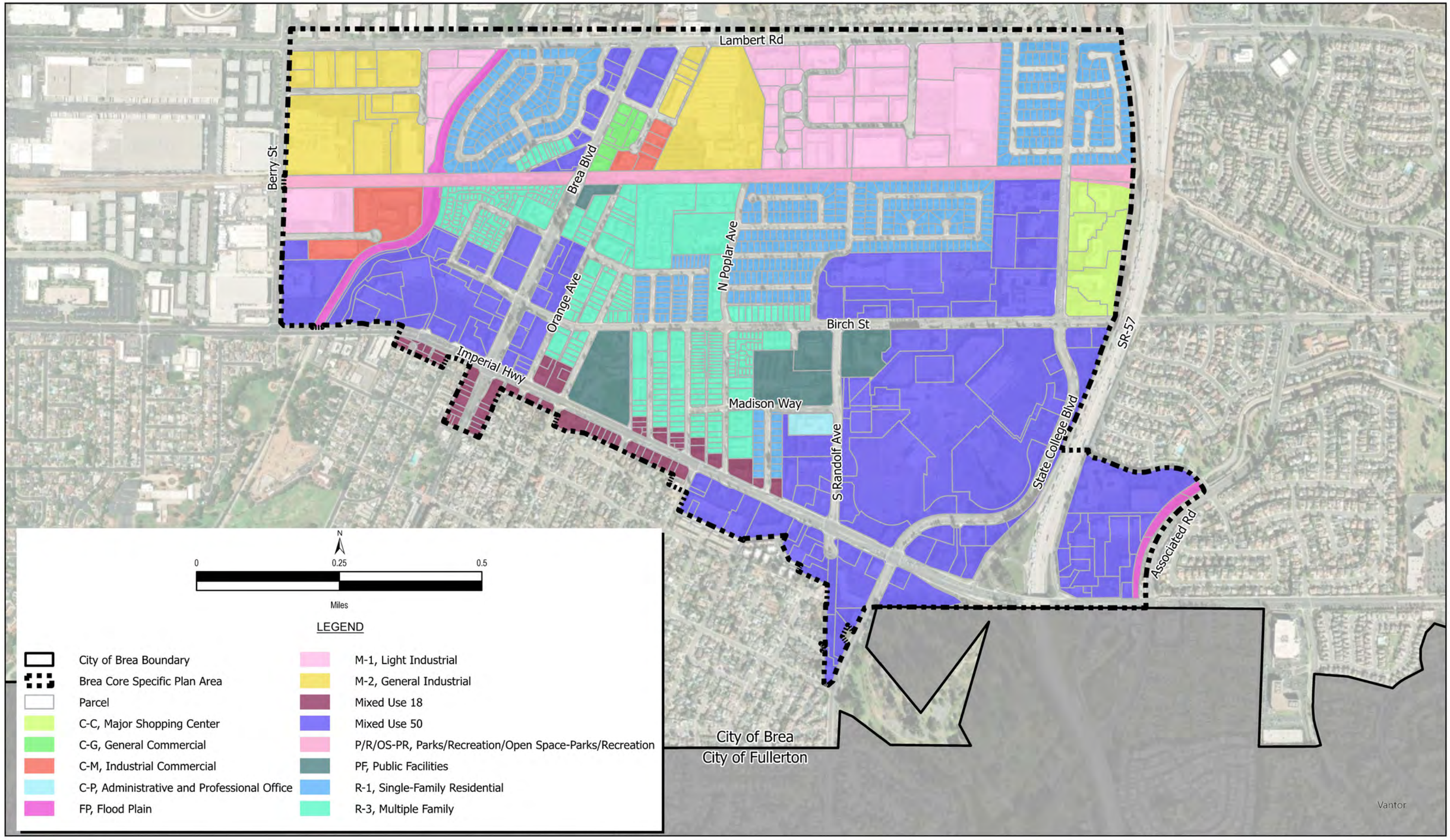


Figure 3

Brea Core Specific Land Use

Harris & Associates

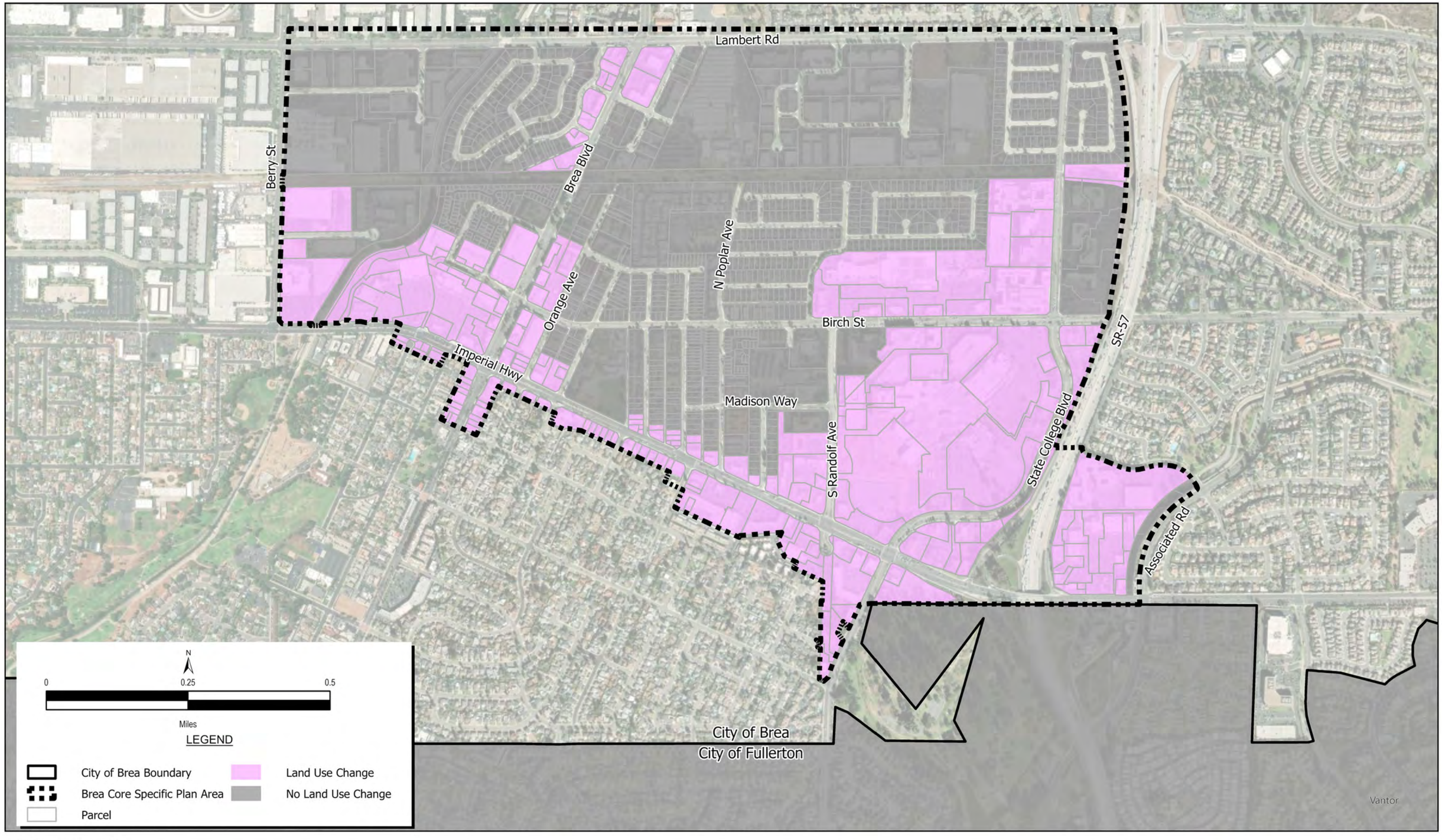


Figure 4

BCSP Land Use Change

Harris & Associates

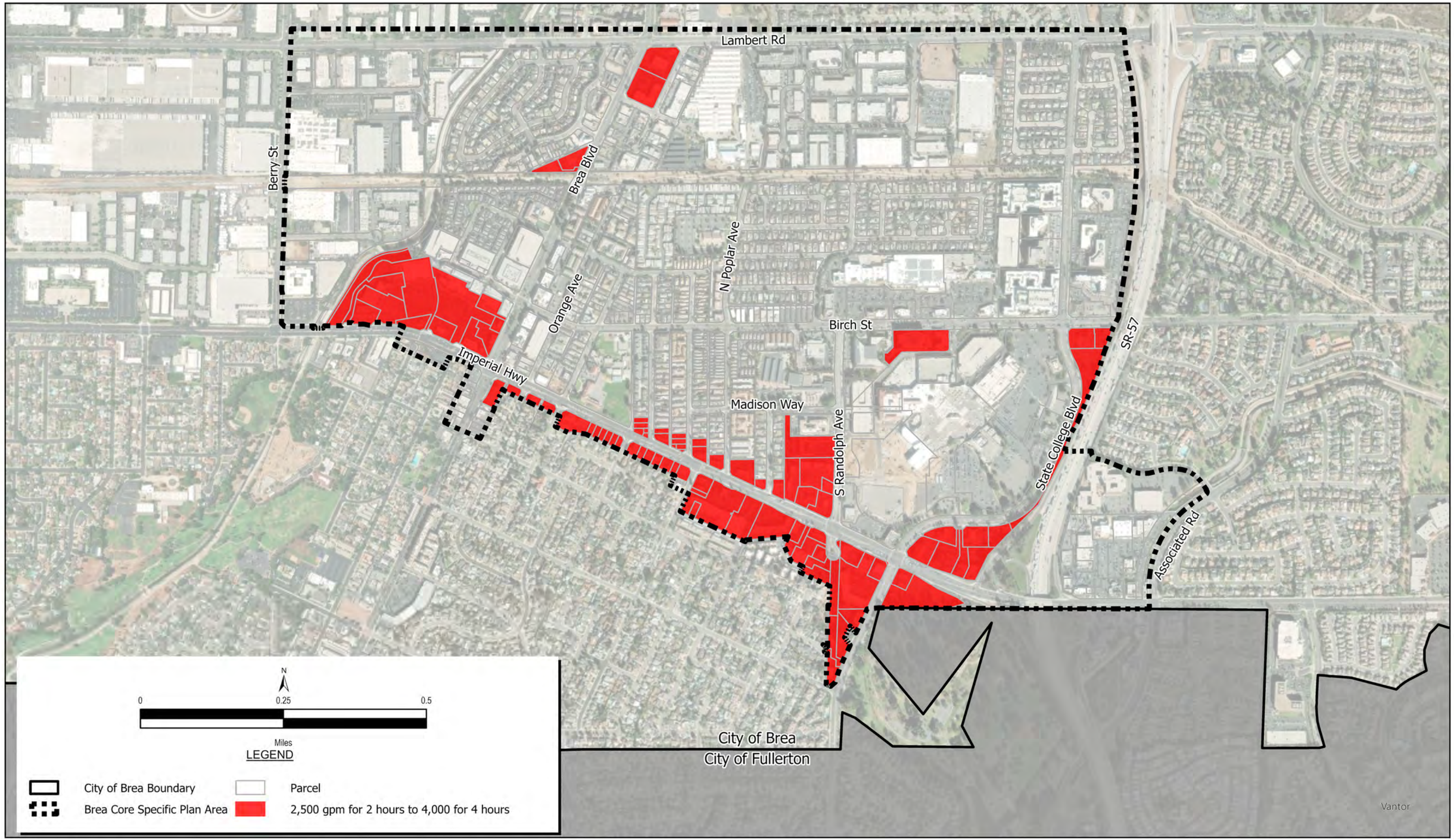


Figure 5

Increases in Fire Flow

Water Impact Study - Brea Core Specific Plan

Harris & Associates

Appendix K. Sanitary System Utility Impact Study

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Harris & Associates

TECHNICAL MEMORANDUM

To: De Novo Planning Group
From: Harris & Associates
RE: Sanitary System Utility Impact Study for the Brea Core Specific Plan
Date: February 6, 2026

1. Introduction

The City of Brea (City) is developing the Brea Core Specific Plan (BCSP) as part of their Focused General Plan Update. The BCSP is generally bounded by Lambert Road to the north, Imperial Highway (SR-90) to the south, Berry Street to the west, and SR-57 to the east. The BCSP will increase the number of residential units and allowable non-residential square footage as summarized in **Table 1.**

Table 1. Proposed BCSP Land Use Change Summary

Land Use Designation	Existing Land Use	Proposed Land Use
Residential Units	1,417 Units	4,752 Units
Non-Residential Square Footage	5,113,863 Square Feet	6,379,588 Square Feet

This Technical Memorandum documents the analysis conducted by Harris and Associates (Harris) to estimate the rate of sewage generated by the allowable land uses within the BCSP that enters the City's sewer system. This assessment evaluates the incremental impact of the BCSP land uses compared with existing land uses at the programmatic level. Hydraulic modeling of the sewer system was not included in the scope of this work.

For the existing condition, this analysis adopts the land use and analysis findings in the City's *Sewer Master Plan* (SMP, 2021). Specifically, the SMP's "existing condition" is used as the baseline for this analysis.

2. Existing System Description

The sewer system within the BCSP area is serviced by the City and consists of gravity sewers and one inverted siphon and generally flows into the southerly direction into Orange County Sanitation District (OCSD) trunk sewers. Most of the pipes in the area are 8-inches in diameter and made of vitrified clay pipe (VCP). The siphon within the BCSP area is a single 10-inch diameter VCP that crosses under Brea Creek Channel for 110 feet and flows east to west.

The BCSP area lies within four of the City's eleven major sewersheds, including Fullerton, Brea, Rolling Hills, and Associated sewershed. The Fullerton and Brea sewersheds discharge to the OCSD Fullerton Brea Trunk Sewer/Fullerton Brea Interceptor, and the Rolling Hills and Associated sewersheds discharge to the OCSD Rolling Hills Sub-Trunk/Santa Ana River Interceptor. **Figure 1** shows the existing sewer system within the BCSP area and illustrates the sewershed boundaries.

Table 2 provides the total area of the sewersheds and the area that falls within the BCSP, as well as the Average Dry Weather Flow (ADWF) and Peak Dry Weather Flow (PDWF) for the entire sewershed. A peaking factor was used to estimate the PDWF with the following equation: $PDWF = 1.777 \times ADWF^{0.92}$.

Table 2. Major Sewershed Areas

Sewershed Name	Area (acres)	Area within BCSP Area (acres)	% Within BCSP Area (acres)	Average Dry Weather Flow (MGD)[1]	Peak Dry Weather Flow (MGD)[1]
Fullerton	1,213	164	13.5	1.0542	1.8654
Brea	146	59	40.4	0.1805	0.3679
Rolling Hills	1,110	493	44.4	0.8595	1.5460
Associated	723	29	4.0	0.4747	0.8953

[1]*These estimated flows are from the "existing condition" in the SMP.*

3. Existing System Deficiencies Within the BCSP Area

The SMP evaluated the existing sewer system capacity based on estimated PDWF. A pipe was considered hydraulically deficient when the ratio of depth of flow to pipe diameter (d/D) during PDWF exceeded 0.64. Within the BCSP area, the SMP identified one hydraulically deficit pipe within the BCSP area under existing land use, summarized in **Table 3**. A site visit of the siphon within the BCSP was conducted in 2021 as part of the SMP and was observed to not have any capacity, operation or maintenance concerns.

Table 3. Summary of Existing Deficiencies within BCSP Area

ID (Shown on Figure 1)	Location	Diameter (in)	Length (feet)	PDWF (MGD)	PDWF d/D
EX-1	Randolph Ave and Imperial Highway	10	383	0.8518	0.70

The SMP identified a second hydraulically deficient pipe in the BCSP area at State College Blvd and Imperial Highway under a modeled "near-term future developments" scenario. This scenario included projects at various planning stages. Where detailed development plans were available, the SMP estimated sewer flows using sewer generation factors based on dwelling units and square footage, in comparison to the factors used for their existing condition (and applied in this BCSP analysis) based on parcel land use acreage. This created a scenario with mixed generation factors.

To ensure consistent comparison of incremental changes between exiting and BCSP land uses across the entire BCSP area, this study uses the SMP's "existing condition" scenario rather than the "near-term" scenario. However, because this pipe is within the BCSP and was identified as deficient under future demand scenarios, it is recommended that this pipe be re-modeled once detailed development plans in the Brea Mall area and other contributing areas become available. The location of this deficiency is shown in **Figure 5**.

4. BCSP Sewerage Flow Changes

The incremental change in sewage flow rates between the existing condition and the BCSP land uses is estimated by land use type, acreage, and sewer generation factors. **Figure 2** presents the existing land use as adopted from the SMP. **Figure 3** shows the BCSP land uses and **Figure 4** highlights the parcels with a changed land use. **Table 4** presents the sewer generation factors used to estimate ADWF and their sources. These factors were used for the existing and proposed land use.

Table 4. ADWF Sewer Generation Factors

Land Use Type	Land Use	Sewerage Generation Factor (gpd/AC)	Source
Single-Family Residential	R-1, Single-Family Residential	1620	SMP[1]
Multi-Family Residential	R-2, Multi-Family Residential	2950	SMP[1]
High Density Residential	R-3, Multiple Family	5230	SMP[1]
Business/Commercial	C-G, General Commercial	1605	SMP
	C-C, Major Shopping Center	2085	SMP
	C-P, Administrative and Professional Office	4805	SMP
Industrial	C-M, Industrial Commercial	4805	SMP
	M-1, Light Industrial	2405	SMP
	M-2, General Industrial	2405	SMP
Parks	P/R/OS-PR, Parks, Recreation/Open Space-Parks	10.5	SMP[2]
Vacant	Vacant	0	Estimated[3]
Flood Plain	FP, Flood Plain	0	Estimated[3]
Public Facilities	PF, Public Facilities	200	Estimated[2]
Mixed Use	MU-1, Mixed Use I	3290	Estimated[5]
	MU-2, Mixed Use II	3290	Estimated[5]
	MU-3, Mixed Use III	2510	Estimated[6]
	Mixed Use 50	3290	Estimated[7]
	Mixed Use 18	2510	Estimated[7]

[1] Largest value in the range provided in the SMP to be conservative in the absence of detailed development plans
[2] Assumed based on similar projects in the area
[3] Assumed to contribute negligible flow to the sewer system based off the land use and location
[4] MU, Mixed Use factor was estimated as the average of Multi-Family Residential and Business/Commercial
[5] MU-1 and MU-2 factors were estimated as 50% of residential (15% single family and 85% high density), 40% business/commercial and 10% open space
[6] MU-3 factors were estimated as 50% of residential (55% single family and 45% high density), 40% business/commercial and 10% open space
7 MU-1 and MU-3 factors were used for Mixed Use 50 and Mixed Use 18, respectively, aligning with their allowable housing densities

Sewer flow generated for existing land use and BCSP land uses is summarized in **Table 5**. The incremental changes resulting from the allowable BCSP land uses compared to existing land use is 0.0753 MGD under ADWF and 0.1363 under PDWF. This results in a 4.6% ADWF increase and a 4.1% PDWF increase within the BCSP area.

Since the sewer flow in the BCSP area ultimately discharges to two different trunk interceptors, the incremental sewer flow increase from the BCSP to each sewershed and trunk interceptor is presented in **Table 6**.

Table 5. Sewer Flow Incremental Changes Within the BCSP Area

Existing Land Use Designation	Future Land Use Designation	Area (acres)	Existing Condition, ADWF (MGD)	Existing Condition, PDWF (MGD)	BCSP ADWF (MGD)	BCSP PDWF (MGD)	Difference, BCSP - Existing ADWF (MGD)	Difference, BCSP - Existing PDWF (MGD)	% Change ADWF	% Change PDWF
C-C, Major Shopping Center	C-C, Major Shopping Center	14.5	0.0303	0.0712	0.0303	0.0711	0.0000	0.0000	0.0%	0.0%
	Mixed Use 50	14.3	0.0298	0.0701	0.0470	0.1067	0.0172	0.0366	57.8%	52.1%
C-G, General Commercial	C-G, General Commercial	3.7	0.0059	0.0157	0.0059	0.0157	0.0000	0.0000	0.0%	0.0%
	Mixed Use 18	7.4	0.0119	0.0301	0.0186	0.0454	0.0067	0.0153	56.4%	50.9%
	Mixed Use 50	54.0	0.0866	0.1872	0.1775	0.3623	0.0909	0.1751	105.0%	93.5%
C-M, Industrial Commercial	C-M, Industrial Commercial	11.8	0.0568	0.1270	0.0568	0.1270	0.0000	0.0000	0.0%	0.0%
	M-1, Light Industrial	6.2	0.0298	0.0702	0.0149	0.0371	-0.0149	-0.0331	-49.9%	-47.1%
	Mixed Use 50	7.7	0.0370	0.0855	0.0253	0.0604	-0.0117	-0.0252	-31.5%	-29.4%
C-P, Administrative and Professional Office	C-P, Administrative and Professional Office	2.0	0.0097	0.0249	0.0097	0.0249	0.0000	0.0000	0.0%	0.0%
	Mixed Use 18	2.0	0.0094	0.0243	0.0049	0.0134	-0.0045	-0.0109	-47.8%	-45.0%
	Mixed Use 50	3.3	0.0157	0.0389	0.0107	0.0274	-0.0049	-0.0114	-31.5%	-29.4%
FP, Flood Plain	FP, Flood Plain	10.4	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0%	0.0%
M-1, Light Industrial	M-1, Light Industrial	60.1	0.1445	0.2997	0.1445	0.2997	0.0000	0.0000	0.0%	0.0%
M-2, General Industrial	M-2, General Industrial	52.7	0.1268	0.2657	0.1268	0.2657	0.0000	0.0000	0.0%	0.0%
MU-1, Mixed Use I	Mixed Use 50	131.9	0.4341	0.8246	0.4341	0.8246	0.0000	0.0000	0.0%	0.0%
MU-2, Mixed Use II	Mixed Use 50	22.9	0.0754	0.1647	0.0754	0.1647	0.0000	0.0000	0.0%	0.0%
MU-3, Mixed Use III	Mixed Use 18	5.7	0.0143	0.0356	0.0143	0.0356	0.0000	0.0000	0.0%	0.0%
PF, Public Facilities	PF, Public Facilities	23.4	0.0047	0.0128	0.0047	0.0128	0.0000	0.0000	0.0%	0.0%
P/R/OS-PR, Parks/Recreation/Open Space-Parks/Recreation	P/R/OS-PR, Parks/Recreation/Open Space-Parks/Recreation	19.9	0.0002	0.0007	0.0002	0.0007	0.0000	0.0000	0.0%	0.0%
R-1, Single-Family Residential	R-1, Single-Family Residential	84.7	0.1372	0.2857	0.1372	0.2857	0.0000	0.0000	0.0%	0.0%
	P/R/OS-PR, Parks/Recreation/Open Space-Parks/Recreation	1.9	0.0031	0.0089	0.0000	0.0001	-0.0031	-0.0088	-99.4%	-99.0%
R-3, Multiple Family	R-3, Multiple Family	0.2	0.0008	0.0026	0.0004	0.0013	-0.0004	-0.0013	-52.0%	-49.1%
	Mixed Use 18	68.3	0.3571	0.6891	0.3571	0.6891	0.0000	0.0000	0.0%	0.0%
	Totals	**608.8**	**1.6211**	**3.3352**	**1.6963**	**3.4714**	**0.0753**	**0.1363**	**4.6%**	**4.1%**

Table 6. BCSP Sewer Flow Incremental Change By Sewershed

Sewershed	Entire Sewershed			Incremental Change within BCSP Area						% Change (BCSP - Existing)	
	Area (acres)	ADWF	PDWF	Area (acres)	Existing Condition, ADWF (MGD)	Existing Condition, PDWF (MGD)	BCSP Condition, ADWF (MGD)	BCSP Condition, PDWF (MGD)	Difference, BCSP - Existing ADWF (MGD)	Difference, BCSP - Existing PDWF (MGD)	ADWF	PDWF
Fullerton	1,213	1.1128	1.9606	140.73	0.3716	0.7148	0.3815	0.7322	0.0099	0.0174	2.7%	2.4%
Brea	146	0.2054	0.4143	40.76	0.1212	0.2551	0.1319	0.2757	0.0107	0.0206	8.8%	8.1%
Totals	**1,359**	**1.3182**	**2.3749**	**181.5**	**0.4929**	**0.9699**	**0.5134**	**1.0079**	**0.0205**	**0.0380**	**4.2%**	**3.8%**
Rolling Hills	1,110	1.2629	2.2026	400.96	1.0529	1.8633	1.1076	1.9552	0.0547	0.0889	5.2%	4.8%
Associated	723	0.5159	0.9667	26.36	0.0752	0.1645	0.0752	0.1645	0.0000	0.0000	0	0
Totals	**1,833**	**1.7788**	**3.1693**	**427.32**	**1.1281**	**2.0277**	**1.1828**	**2.1166**	**0.0547**	**0.0889**	**4.9%**	**4.2%**

5. Impacts and Recommendations

Overall, the BCSP land uses will increase ADWF to the City's public sewer system by 4.6%. **Table 7** provides the incremental increase in flow from the BCSP land use that will contribute to the SMP identified deficient pipe at Randolph Ave and Imperial Highway. **Figure 5** illustrates the BCSP area parcels that are assumed to contribute flow to the existing deficient pipe, and highlights which parcels have a proposed land use change. The incremental PDWF change is 0.0178 MGD, which is approximately a 5.5% increase from the total PDWF in the existing pipe as modeled in the SMP. Based on a normal depth calculation, the maximum capacity of this pipe is exceeded with the additional flow from the BCSP. As shown in **Table 7**, the existing d/D was estimated to be 0.70 and approximately 0.72 with the proposed BSCP land use changes.

To assess the contribution of individual new developments to the deficient pipe, updated modeling should be conducted once detailed development plans are available. This modeling can identify the required pipe upgrades and associated costs. With this information, potential developer impact fees could be determined for new development or redevelopment within the BCSP area.

Table 7. BCSP Sewer Flow Contributing to Deficiencies

Deficiency ID (see Figure 5)	PDWF (MGD)	PDWF for BCSP Parcels with Proposed Land Use Change			% Change	Existing PDWF d/D	Proposed PDWF d/D
		Existing (MGD)	BCSP (MGD)	Difference, BCSP – Existing (MGD)			
EX-1	0.8518	0.3214	0.3392	0.0178	5.5%	0.70	0.72

The sewer generation factors used in this analysis were taken from the SMP, which were based on 2019 billing records and 2020 flow monitoring. As noted in the SMP, COVID-19 Stay-at-Home Orders were in effect during flow monitoring and influenced the results. Although adjustments were made to account for these conditions, the existing scenario likely resulted in conservative sewage loads. For planning purposes at this level, this conservative approach is considered appropriate to evaluate system capacity.

However, it is further recommended that each development proposal within the BCSP undergo a site-specific sewer system impact analysis as detailed development plans are available. Proposed square footage and dwelling units should be compared with existing building and use composition to more accurately determine the incremental change in sewer flows and the resulting impacts on the public sewer system.

6. References

City of Brea Sewer Master Plan, Prepared by AKM Consulting Engineers, November 2021

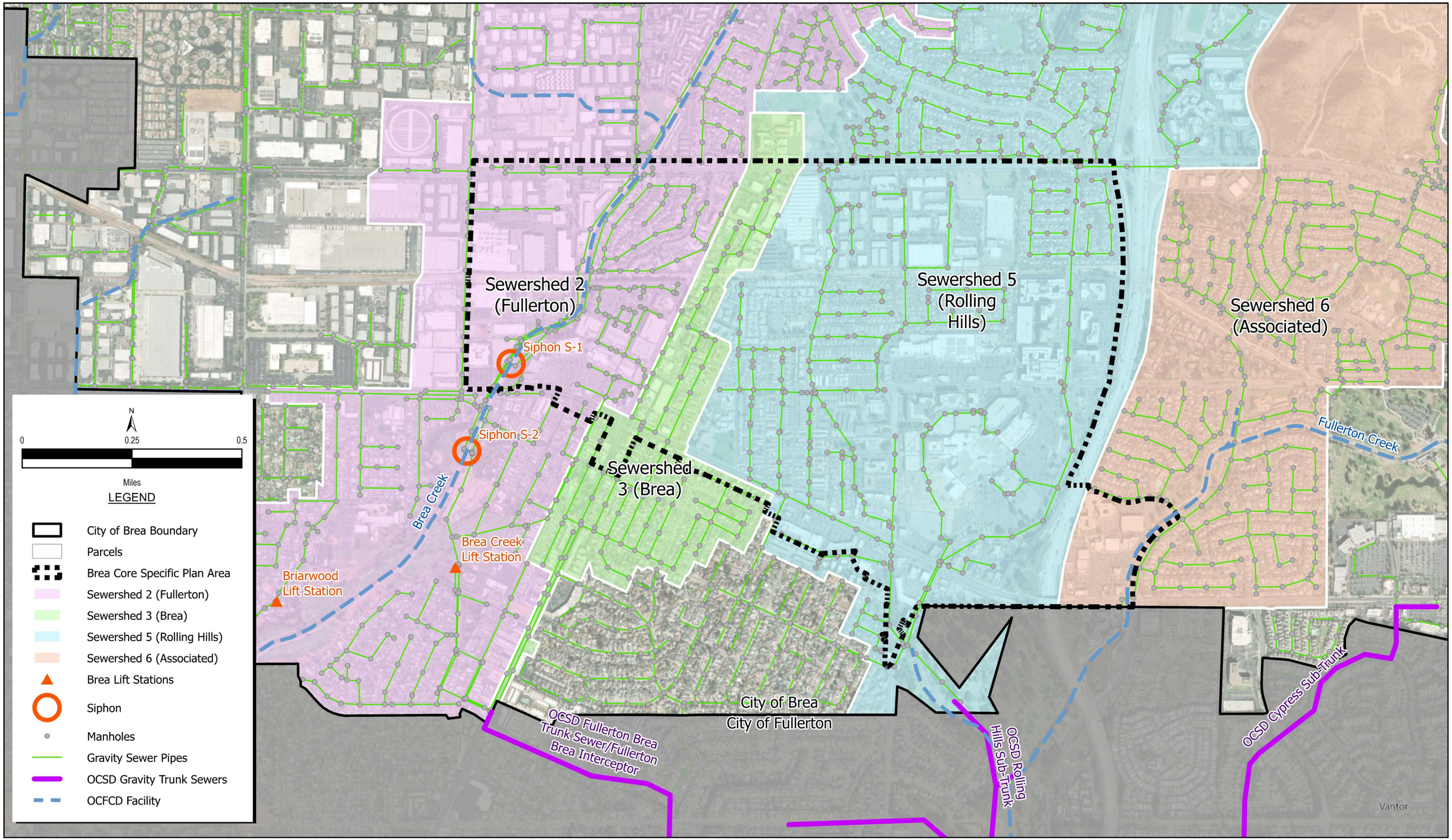


Figure 1

Sewer System Within BCSP Area

Wastewater Impact Study - Brea Core Specific Plan

Harris & Associates

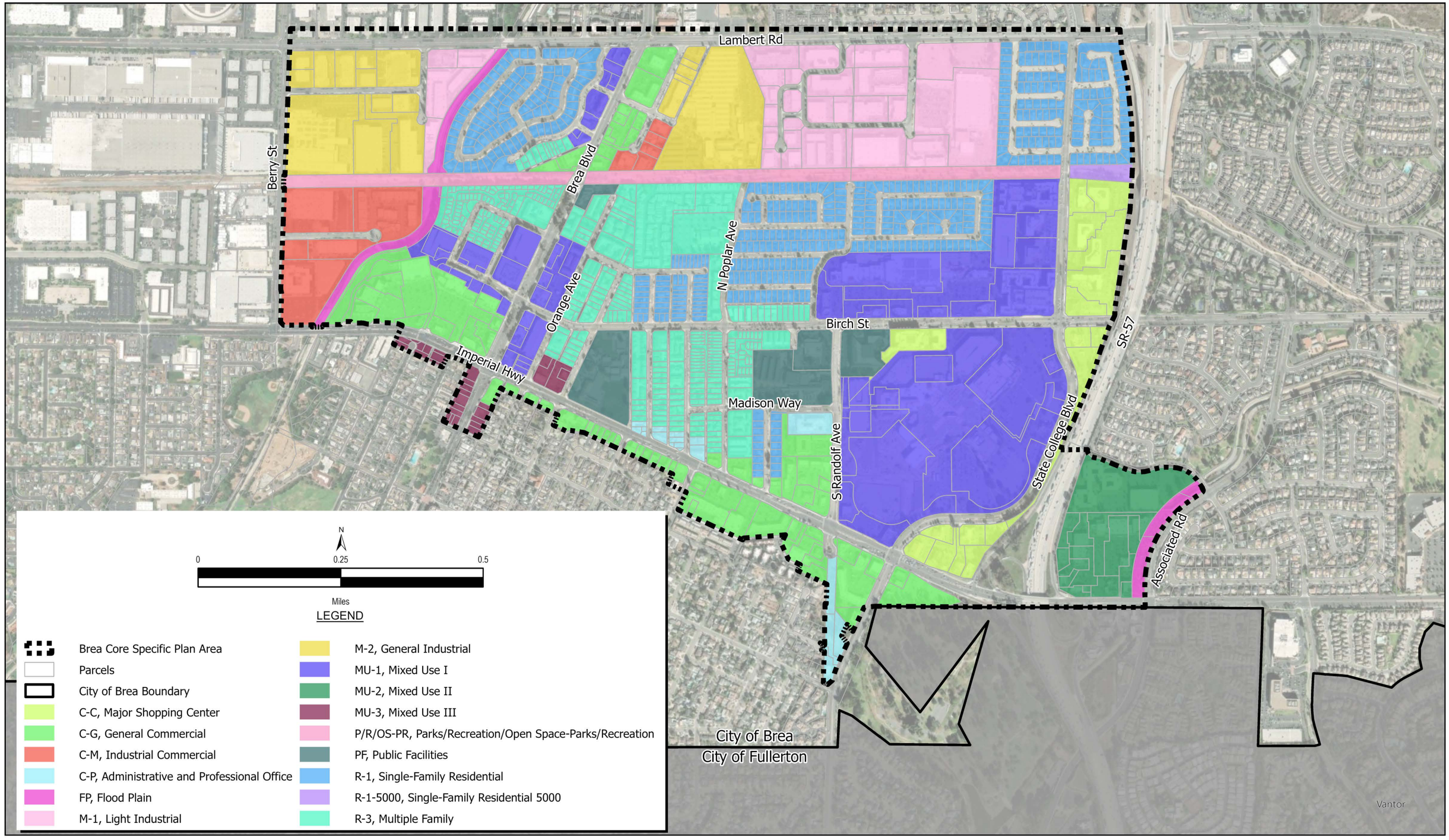


Figure 2

Existing Land Use

Wastewater Impact Study - Brea Core Specific Plan

Harris & Associates

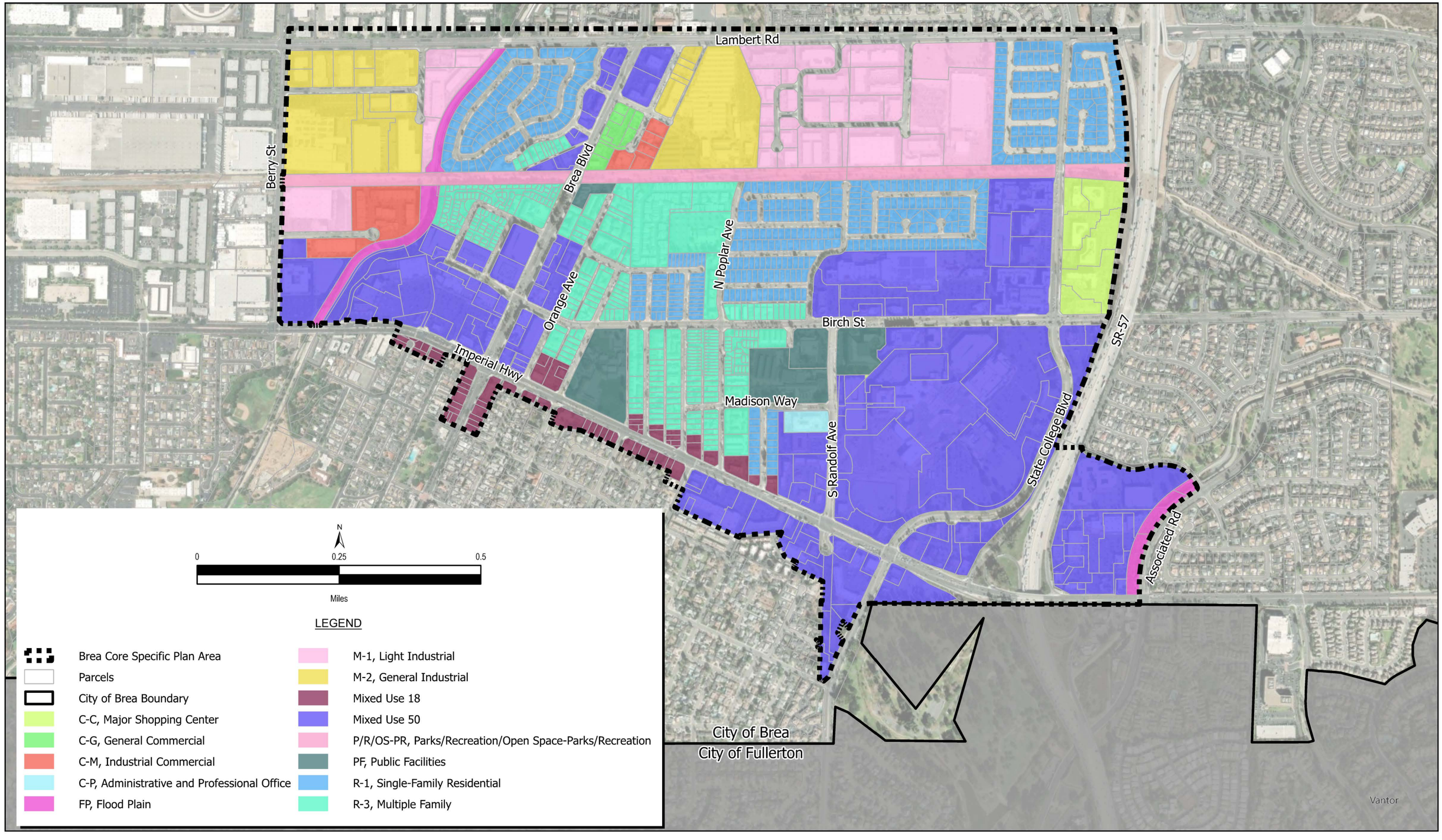


Figure 3

Brea Core Specific Land Use

Harris & Associates

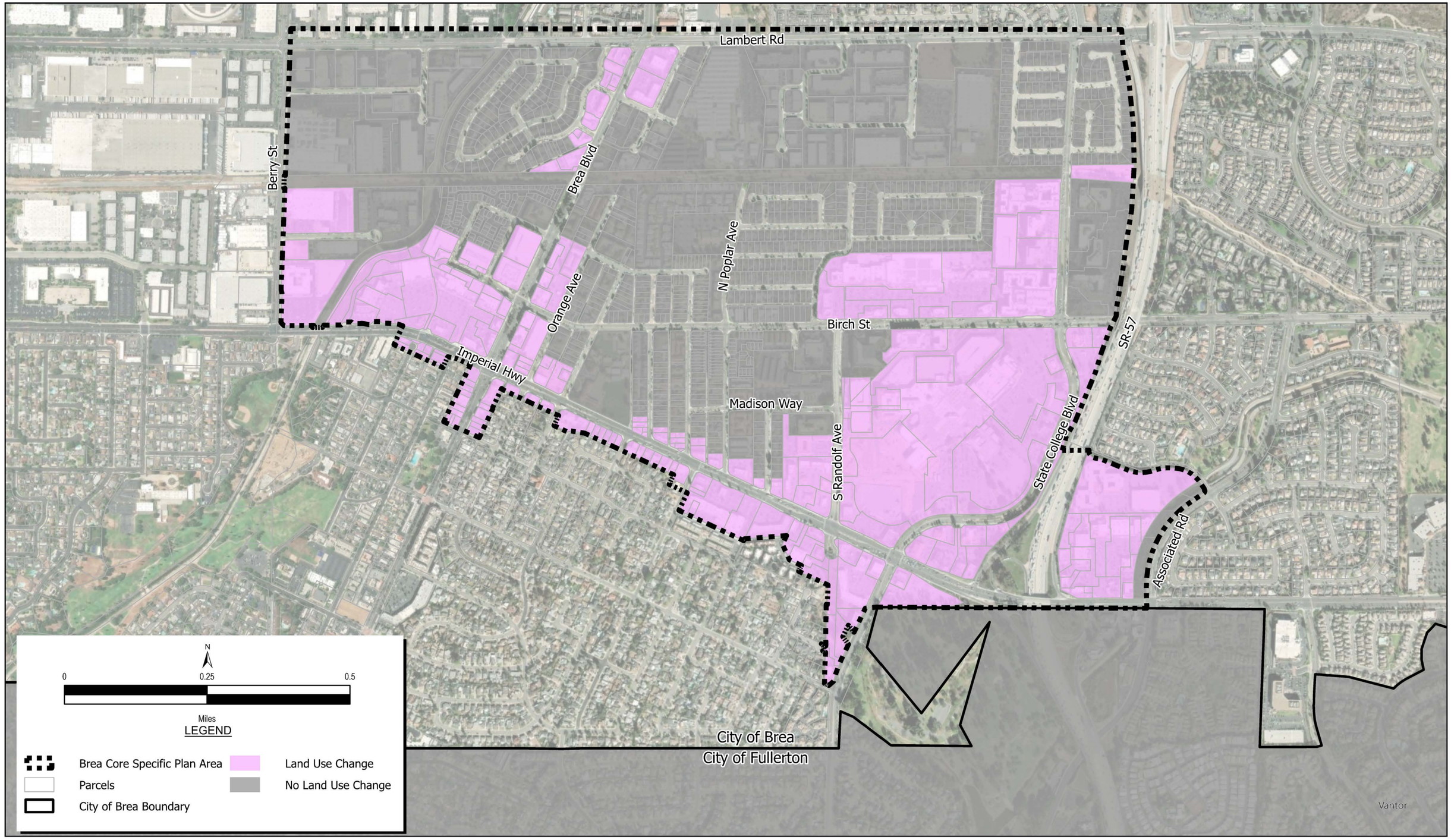


Figure 4

BCSP Land Use Change

Harris & Associates

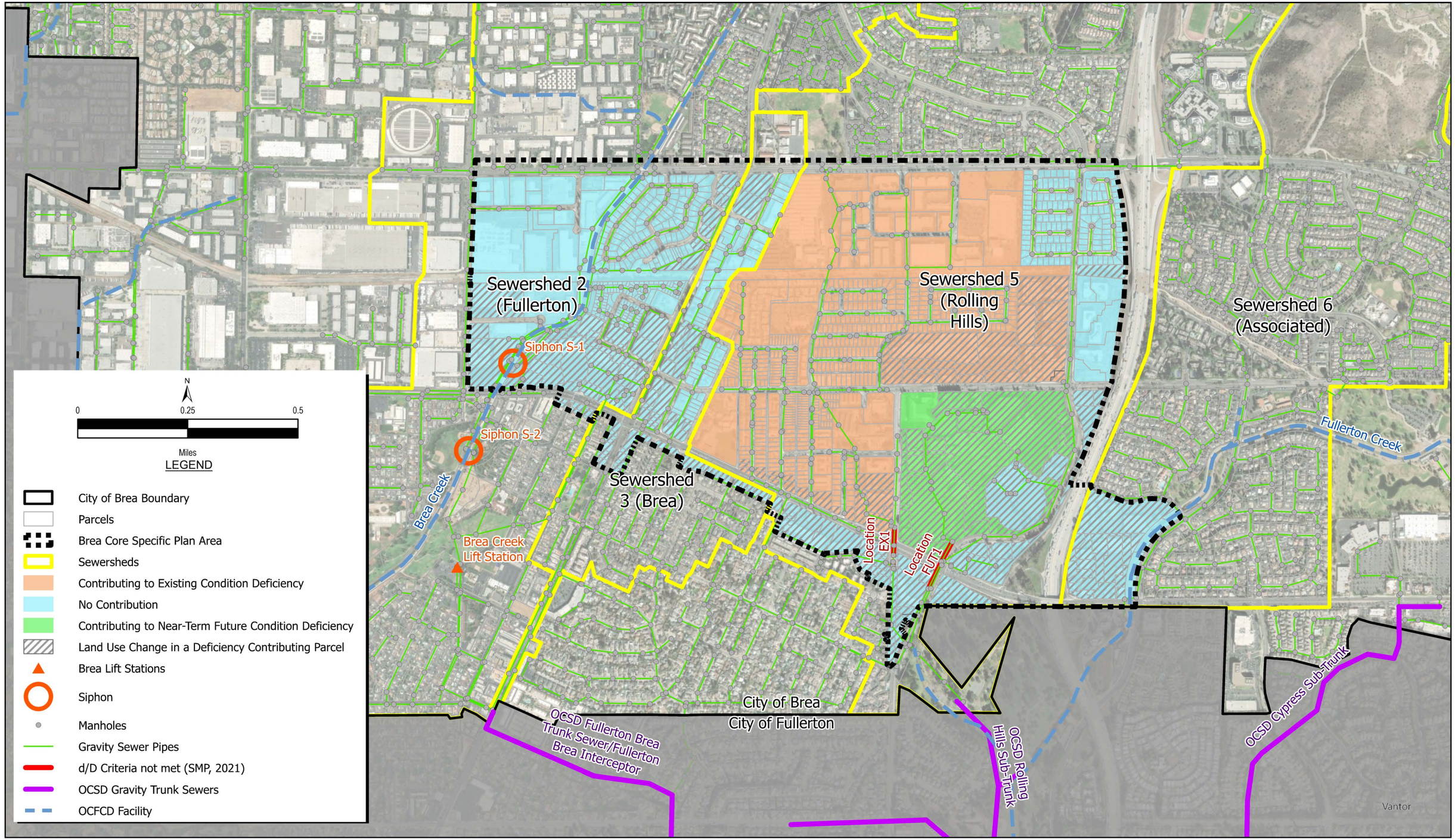


Figure 5

Capacity Deficiencies Within BCSP

Wastewater Impact Study - Brea Core Specific Plan

Harris & Associates

Appendix L. Drainage System Study

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Harris & Associates

TECHNICAL MEMORANDUM

To: De Novo Planning Group
From: Harris & Associates
RE: Drainage System Study for the Brea Core Specific Plan
Date: February 6, 2026

1. Introduction and Purpose

The City of Brea (City) is developing the Brea Core Specific Plan (BCSP) as part of its Focused General Plan Update. The BCSP is generally bounded by Lambert Road to the north, Imperial Highway (SR-90) to the south, Berry Street to the west, and SR-57 to the east. The BCSP proposes to increase both residential units and allowable non-residential square footage, as summarized in **Table 1.**

Table 1. Proposed BCSP Land Use Change Summary

Land Use Designation	Existing Land Use	Proposed Land Use
Residential Units	1,417	4,752
Non-Residential Square Footage	5,113,863	6,379,588

This Technical Memorandum documents the analysis performed by Harris and Associates (Harris) to evaluate peak runoff flow rates associated with the proposed BCSP land uses at a programmatic level. The assessment examines potential impacts on the City's drainage system based on incremental changes in peak runoff flow rates between the proposed BCSP land use and the existing land use. Hydraulic modeling of the storm drainage system was not included in the scope of this work.

2. Drainage Setting

The BCSP area is divided mostly between the regional watersheds of Brea Creek and Fullerton Creek. Both creeks are managed by OCFCD and flow in a southwesterly direction. The watershed boundaries generally follow North Brea Boulevard and are shown on **Figure 1.** The areas west of North Brea Boulevard drain to Orange County Flood Control District (OCFCD) facilities associated with Brea Creek, and the areas to the east of North Brea Boulevard drain to Fullerton Creek OCFCD facilities. A small portion along the City's southern boundary, including part of the BCSP area, lies outside the major regional watershed and drains southward into the City of Fullerton's drainage system. **Table 2** provides a summary of the watershed areas within the BCSP area.

Table 2. Watershed Areas

Watershed Name	Watershed Area (acres)	Area Within City (acres)	Area within BCSP (acres)	Percentage by acres within BCSP (%)
Brea Creek	13,776	1,412	185	1.3
Fullerton Creek	3,114	2,546	551	17.7
Southerly Subbasins	N/A	668	10	N/A

Most of the BCSP area does not lie within a Federal Emergency Management Agency (FEMA) Special Flood Hazard Area (SFHA) and is designated as Zone X (unshaded) on FEMA Flood Insurance Rate Map (FIRM) Map Number 06059C0042J. Zone X (unshaded) are areas identified areas with minimal flood risk. There are two areas along the Brea Canyon Channel and Fullerton Creek that are designated as SFHA Zone AE and are subject to flooding by the 1% annual chance flood (**Figure 2**).

3. Drainage System Overview

The drainage system within the BCSP area consists of a network of City-owned pipes, manholes, and catch basins that drain into the OCFCD facilities of Brea Creek and Fullerton Creek or connects to the City of Fullerton drainage system. **Figure 1** presents the existing storm drain system within the BCSP overlaid with the regional watersheds.

4. Methodology

Peak runoff rates to the City's storm drainage system under the proposed BCSP land uses (Proposed Condition) were analyzed and compared with those under existing land uses (Existing Condition). The following assumptions were used:

- The Existing Condition land use was based on the *City's Master Plan of Drainage* (MPD, 2013) analysis and is illustrated on **Figure 3**. **Figure 4** presents the BCSP land uses, and **Figure 5** highlights parcels with proposed land use changes.
- The same methodology used in the MPD was applied to the Proposed Condition analysis to ensure consistency and to evaluate incremental changes resulting from the BCSP land uses.
- The analysis of the 10-year and 25-year storm events was conducted in accordance with the *Orange County Hydrology Manual* (OCHM, 1986).
- The drainage basin areas delineated in the MPD were used to calculate peak runoff for the Proposed Condition. It was assumed that no significant changes to the drainage patterns would occur with the BCSP land use changes.

5. Peak Runoff Estimates

A modified rational method, consistent with the MPD and in compliance with the OCHM, was adopted to estimate peak runoff. The peak runoff is calculated as follows:

$$Q = 0.9(I-F_m)A$$

where:

- Q = peak runoff (cubic feet per second, cfs)
- I = rainfall intensity (inches per hour, in/hr)
- F_m = loss coefficient, product of pervious-to-total area ratio (a_p) and soil loss rate for pervious areas (F_p)
- A = subbasin drainage area (acres)

The parameters were estimated as follows:

Rainfall Intensity. Rainfall intensities for each subbasin drainage area were assumed to remain generally consistent between the Existing and Proposed Conditions. The MPD estimated rainfall intensities using OCHM's Precipitation-Intensity-Curves and the precipitation duration was assumed equal to the time of concentration for each subbasin drainage area. At this planning-level analysis, without detailed development plans, the time of concentration was also assumed to remain largely unchanged between the Existing and Proposed Conditions.

Soil Loss Rate (F_p). Soil infiltration rates by soil type are provided in the OCHM and are as follows:

- Type A: 0.40 in/hr
- Type B: 0.30 in/hr
- Type C: 0.25 in/hr
- Type D: 0.20 in/hr

The soil type within the BCSP subbasins were taken from the Natural Resources Conservation Services (NRCS) State Soil Geographic (STATSGO) database and is shown on **Figure 6**. The averaged soil infiltration rate for each subbasin based on the OCHM soil loss rates (F_p) is provided in **Table 4**.

Previous-to-total area ratio (a_p). Impervious cover for the different land use types were adopted from the OCHM and is provided in **Attachment A**. Mixed-use categories were not included in the OCHM and were instead estimated based on the proportional percentage of residential, commercial, and open space areas, using the corresponding pervious area percentages for each subcategory. These values were adopted for the Existing and Proposed Condition analysis for comparison purposes and are shown in **Table 3**.

Table 3. Impervious Area Percentage by Land Use Type

Land Use Designation	Ai, Area Impervious, %	Ap, Area Pervious, %
Major Shopping Center	90	10
General Commercial	90	10
Industrial Commercial	90	10
Administration and Professional Office	90	10
Floodplain	0	100
Light Industrial	90	10
General Industrial	90	10
Mixed Use I (50% residential, 40% commercial, 10% open-space)	68.5	31.5
Mixed Use II (50% residential, 40% commercial, 10% open-space)	68.5	31.5
Mixed Use III (50% residential, 40% commercial, 10% open-space)	68.5	31.5
Mixed Use 18	68.5	31.5
Mixed Use 50	68.5	31.5
Parks/Recreation/Open Space-Parks Recreation	0	100
Public Facilities	40	60
Single-Family Residential	30	70
Multiple Family	65	35

6. Results

Of the 62 subbasin drainage areas that fall entirely or partially within the BCSP boundary, 30 include parcels with proposed land use change. **Figure 1** illustrates these parcels within their respective subbasin drainage areas.

The incremental change in peak flow between the Existing and Proposed Conditions is summarized in the attached **Table 4**, which also provides the following information:

- 10-year and 25-year peak runoff rates per subbasin drainage area for Existing and Proposed Conditions
- Total drainage basin acreage
- Acreage by land use category under Existing and Proposed Conditions
- Percentage of each drainage area affected by proposed land use changes
- Soil loss factor, pervious ratio, and weighted area loss coefficient for each subbasin drainage area

Overall, the analysis indicates that the Proposed Condition BCSP land uses are expected to generate lower peak runoff rates compared to the Existing Condition land uses. The estimated reduction of peak runoff with the Proposed Condition BCSP land uses during both the 10-year and 25-year event is 8.90 cubic feet per second compared to the Existing Condition. This reduction is due to the conversion of commercial land use to mixed use land use. Mixed use has an anticipated higher pervious area due to residential and open-space uses, which results in more surface infiltration and interception, increasing storage and attenuating of the peak runoff that enters the storm drain system.

Within the BCSP drainage area, certain storm drain segments were identified as operating under pressured conditions during the 10-year storm event, however, these segments were not flooding. Given the anticipated reduction in peak runoff rates associated with the Proposed Condition BCSP land uses, these pressurized segments are not expected to experience increased flooding risk.

The MPD did find localized curb ponding along the north side of Lambert Road at the northern boundary of the BCSP area and recommended improvement projects within that vicinity. The projects consist of new catch basins and 18-inch and 24-inch diameter piping at the ponding locations to collect runoff and convey it to the existing storm drain system. Project location and total pipe length recommended is summarized in **Table 5** and is shown on **Figure 1.** Although the MPD recommended improvements at these locations, only a few parcels affected by the BCSP will drain to these areas. In addition, the anticipated land uses under the BCSP includes a greater percentage of pervious surfaces, which is expected to reduce runoff and further improve conditions at these locations.

Table 5. MPD Recommended Improvements on Lambert Road

Location	Length (feet)
Lambert Road, between N Berry Street and Tamarack Ave	625
Lambert Road, between Cliffwood Park Street and Cashew Ave	625
Lambert Road, between Cashew Ave and N State College Blvd	570

7. Recommendations

A comparison of the existing and proposed land uses within the BCSP area indicates minimal potential for increased imperviousness. Most proposed changes involve allowing industrial or commercial areas to be converted into mixed-use developments. Because the former uses typically have high impervious surface coverage, these land use transitions are expected to result in lower overall imperviousness, and consequently, lower peak runoff rates. Therefore, no significant adverse impacts on the existing drainage system are anticipated.

However, changes to on-site drainage systems on large parcels could alter localized drainage patterns within the BCSP area. The City should review each development project proposal and compare it to the existing impervious coverage and drainage patterns assumed in the MPD, as well as to actual field conditions.

8. References

Master Plan of Drainage 2013, prepared by Willdan Engineering for the City of Brea, December 2013.

Orange County Hydrology Manual, prepared by Orange County Environmental Management Agency, October 1986.

Orange County Hydrology Manual Addendum No. 1, prepared by Orange County Environmental Management Agency, 1996.

Table 4. Peak Runoff Summary

Basin (Figure 2)	Existing Land Use	BCSP Land Use	Area, Acres	% BSCP Land Use Change	Total Area, Acres	Fp, in/hr	EXISTING			BCSP			10-year Peak Runoff					25-year Peak Runoff				
							Ap	Ap x Area	Fm	Ap	Ap x Area	Fm	I, in/hr	Existing Conditions Peak Runoff, cfs	BCSP Peak Runoff, cfs	Difference (BSCP-Existing), cfs	% Difference	I, in/hr	Existing Conditions Peak Runoff, cfs	BCSP Peak Runoff, cfs	Difference (BSCP-Existing), cfs	% Difference
Basin 2				4.5%	1.01				0.070			0.075	1.27	1.09	1.08	0.00	-0.4%	1.9	1.66	1.65	0.00	-0.3%
2a	C-M	M-1	0.71			0.25	0.1	0.018		0.1	0.018											
2b	C-M	Mixed Use 50	0.10			0.25	0.1	0.002		0.315	0.007											
2c	P/R/OS-PR	P/R/OS-PR	0.20			0.25	1	0.050		1	0.050											
Basin 3				69.5%	18.85				0.058			0.086	0.75	11.74	11.26	-0.48	-4.1%	1.13	18.19	17.71	-0.48	-2.6%
3a	C-M	C-M	4.11			0.325	0.1	0.134		0.1	0.134											
3b	C-M	M-1	5.50			0.325	0.1	0.179		0.1	0.179											
3c	C-M	Mixed Use 50	7.60			0.325	0.1	0.247		0.315	0.778											
3d	FP	FP	0.99			0.325	1	0.323		1	0.323											
3e	P/R/OS-PR	P/R/OS-PR	0.65			0.325	1	0.210		1	0.210											
Basin 4				89.6%	6.10				0.063			0.125	1.19	6.19	5.85	-0.34	-5.6%	1.79	9.49	9.14	-0.34	-3.6%
4a	C-G	Mixed Use 50	5.47			0.325	0.1	0.178		0.315	0.560											
4b	FP	FP	0.63			0.325	1	0.206		1	0.206											
Basin 6				52.2%	6.76				0.093			0.120	1.43	8.14	7.98	-0.17	-2.0%	2.15	12.52	12.36	-0.17	-1.3%
6a	C-G	Mixed Use 50	1.33			0.283	0.1	0.038		0.315	0.118											
6b	FP	FP	0.96			0.283	1	0.272		1	0.272											
6c	MU-1	Mixed Use 50	2.20			0.283	0.15	0.094		0.315	0.197											
6d	R-3	R-3	2.27			0.283	0.35	0.225		0.35	0.225											
Basin 7				100.0%	4.09				0.026			0.079	1.21	4.36	4.16	-0.19	-4.5%	1.82	6.60	6.40	-0.19	-3.0%
7a	C-G	Mixed Use 50	3.83			0.25	0.1	0.096		0.315	0.301											
7b	MU-1	Mixed Use 50	0.26			0.25	0.15	0.010		0.315	0.020											
Basin 8				100.0%	10.77				0.026			0.079	1.08	10.21	9.70	-0.51	-5.0%	1.62	15.44	14.94	-0.51	-3.3%
8a	C-G	Mixed Use 50	9.63			0.25	0.1	0.241		0.315	0.758											
8b	MU-1	Mixed Use 50	1.14			0.25	0.15	0.043		0.315	0.090											
Basin 13				28.6%	5.24				0.148			0.164	1.03	4.16	4.08	-0.08	-1.9%	1.55	6.61	6.53	-0.08	-1.2%
13a	C-G	Mixed Use 50	1.17			0.283	0.1	0.033		0.315	0.105											
13b	FP	FP	0.11			0.283	1	0.030		1	0.030											
13c	MU-1	Mixed Use 50	0.33			0.283	0.15	0.014		0.315	0.029											
13d	P/R/OS-PR	P/R/OS-PR	1.76			0.283	1	0.497		1	0.497											
13e	R-1	R-1	0.13			0.283	0.7	0.026		0.7	0.026											
13f	R-3	R-3	1.75			0.283	0.35	0.173		0.35	0.173											
Basin 17				98.8%	3.54				0.042			0.086	1.07	3.27	3.13	-0.14	-4.3%	1.94	6.03	5.89	-0.14	-2.3%
17a	C-G	Mixed Use 50	0.18			0.225	0.1	0.004		0.315	0.013											
17b	MU-1	Mixed Use 50	3.31			0.225	0.15	0.112		0.315	0.235											
17c	P/R/OS-PR	P/R/OS-PR	0.05			0.225	1	0.010		1	0.010											
Basin 19				48.4%	3.53				0.126			0.139	1.18	6.91	6.83	-0.08	-1.2%	1.77	10.78	10.69	-0.08	-0.8%
19a	C-G	Mixed Use 18	0.92			0.25	0.1	0.023		0.315	0.072											
19b	MU-3	Mixed Use 18	2.61			0.25	0.352	0.230		0.315	0.206											
Basin 20				27.80%	11.87				0.089			0.134	1.87	19.04	18.55	-0.48	-2.5%	2.82	29.19	28.71	-0.48	-1.7%
20a	C-G	Mixed Use 50	3.73			0.225	0.1	0.084		0.315	0.264											
20b	C-M	C-M	0.03			0.225	0.1	0.001		0.1	0.001											
20c	M-2	M-2	7.69			0.225	0.1	0.173		0.1	0.173											
20d	P/R/OS-PR	P/R/OS-PR	0.43			0.225	1	0.097		1	0.097											
Basin 24				35.70%	11.08				0.176			0.211	1.79	16.10	15.75	-0.35	-2.2%	2.7	25.18	24.83	-0.35	-1.4%
24a	MU-1	Mixed Use 50	3.82			0.225	0.15	0.129		0.315	0.271											
24b	MU-3	Mixed Use 18	0.14			0.225	0.352	0.011		0.315	0.010											
24c	PF	PF	0.08			0.225	0.6	0.010		0.6	0.010											
24d	R-3	R-3	7.05			0.225	0.35	0.555		0.35	0.555											
Basin 25				91.80%	5.71				0.108			0.151	1.36	6.43	6.21	-0.22	-3.4%	2.05	9.98	9.76	-0.22	-2.2%
25a	MU-1	Mixed Use 50	3.50			0.25	0.15	0.131		0.315	0.276											
25b	MU-3	Mixed Use 18	1.74			0.25	0.352	0.153		0.315	0.137											
25c	R-3	R-3	0.47			0.25	0.35	0.041		0.35	0.041											
Basin 27				6.80%	1.28				0.002			0.005	1.71	28.94	28.87	-0.06	-0.2%	2.06	34.87	34.80	-0.06	-0.2%
27a	C-G	Mixed Use 18	1.28			0.25	0.1	0.032		0.315	0.101											
Basin 29				19.60%	1.77				0.005			0.015	2.74	22.26	22.17	-0.09	-0.4%	3.28	26.65	26.56	-0.09	-0.3%
29a	C-G	Mixed Use 18	1.77			0.25	0.1	0.044		0.315	0.139											
Basin 42				41.50%	7.84				0.061			0.084	1.72	11.71	11.55	-0.16	-1.4%	2.59	17.85	17.69	-0.16	-0.9%
42a	C-G	Mixed Use 18	1.24			0.25	0.1	0.031		0.315	0.098											
42b	C-P	Mixed Use 18	2.06			0.25	0.1	0.052		0.315	0.162											
42c	R-3	R-3	4.54			0.25	0.35	0.397		0.35	0.397											
Basin 43				23.00%	7.43				0.081			0.092	1.62	10.29	10.21	-0.07	-0.7%	2.45	15.83	15.76	-0.07	-0.5%
43a	C-G	Mixed Use 18	1.65			0.225	0.1	0.037		0.315	0.117											

Basin (Figure 2)	Existing Land Use	BCSP Land Use	Area, Acres	% BSCP Land Use Change	Total Area, Acres	Fp, in/hr	EXISTING			BCSP			10-year Peak Runoff					25-year Peak Runoff				
							Ap	Ap x Area	Fm	Ap	Ap x Area	Fm	I, in/hr	Existing Conditions Peak Runoff, cfs	BCSP Peak Runoff, cfs	Difference (BSCP-Existing), cfs	% Difference	I, in/hr	Existing Conditions Peak Runoff, cfs	BCSP Peak Runoff, cfs	Difference (BSCP-Existing), cfs	% Difference
43b	C-P	Mixed Use 18	0.06			0.225	0.1	0.001		0.315	0.004											
43c	R-1	R-1	1.42			0.225	0.7	0.224		0.7	0.224											
43d	R-3	R-3	4.29			0.225	0.35	0.338		0.35	0.338											
Basin 45				67.60%	11.56				0.042			0.075	1.58	16.01	15.67	-0.34	-2.1%	2.38	24.33	23.99	-0.34	-1.4%
45a	C-G	Mixed Use 18	0.42			0.225	0.1	0.009		0.315	0.030											
45b	C-G	Mixed Use 50	7.39			0.225	0.1	0.166		0.315	0.524											
45c	C-P	C-P	2.01			0.225	0.1	0.045		0.1	0.045											
45d	PF	PF	0.00			0.225	0.6	0.000		0.6	0.000											
45e	R-1	R-1	1.62			0.225	0.7	0.255		0.7	0.255											
45f	R-3	R-3	0.12			0.225	0.35	0.010		0.35	0.010											
Basin 46				45.30%	5.54				0.010			0.032	2.42	26.52	26.27	-0.24	-0.9%	3.65	40.05	39.81	-0.24	-0.6%
46a	C-G	Mixed Use 50	5.54			0.225	0.1	0.125		0.315	0.393											
Basin 47				73.60%	8.98				0.017			0.052	2.13	23.21	22.82	-0.39	-1.7%	3.2	34.97	34.57	-0.39	-1.1%
47a	C-G	Mixed Use 50	8.88			0.225	0.1	0.200		0.315	0.629											
47b	C-P	Mixed Use 50	0.10			0.225	0.1	0.002		0.315	0.007											
Basin 48				89.60%	4.65				0.023			0.071	1.32	5.43	5.23	-0.20	-3.7%	1.99	8.23	8.03	-0.20	-2.5%
48a	C-G	Mixed Use 50	3.04			0.225	0.1	0.068		0.315	0.215											
48b	C-P	Mixed Use 50	1.61			0.225	0.1	0.036		0.315	0.114											
Basin 49				11.40%	1.54				0.003			0.008	1.38	16.73	16.66	-0.07	-0.4%	2.07	25.11	25.04	-0.07	-0.3%
49a	C-G	Mixed Use 50	0.00			0.2333	0.1	0.000		0.315	0.000											
49b	C-P	Mixed Use 50	1.54			0.2333	0.1	0.036		0.315	0.113											
Basin 51				100.00%	16.78				0.038			0.079	1.33	19.52	18.90	-0.62	-3.2%	2	29.64	29.01	-0.62	-2.1%
51a	MU-1	Mixed Use 50	16.78			0.25	0.15	0.629		0.315	1.321											
Basin 55				100.00%	27.33				0.032			0.071	0.97	23.07	22.12	-0.95	-4.1%	1.46	35.12	34.17	-0.95	-2.7%
55a	C-C	Mixed Use 50	3.92			0.225	0.1	0.088		0.315	0.278											
55b	MU-1	Mixed Use 50	23.41			0.225	0.15	0.790		0.315	1.659											
Basin 56				100.00%	16.00				0.033			0.071	1.23	17.24	16.69	-0.55	-3.2%	1.86	26.31	25.76	-0.55	-2.1%
56a	C-C	Mixed Use 50	1.37			0.225	0.1	0.031		0.315	0.097											
56b	MU-1	Mixed Use 50	14.63			0.225	0.15	0.494		0.315	1.037											
Basin 57				100.00%	2.31				0.052			0.164	1.21	2.41	2.17	-0.23	-9.6%	1.82	3.67	3.44	-0.23	-6.3%
57a	C-C	Mixed Use 50	2.31			0.225	0.1	0.052		0.315	0.164											
Basin 58				100.00%	3.95				0.023			0.071	2.25	7.93	7.76	-0.17	-2.2%	3.39	11.98	11.81	-0.17	-1.4%
58a	C-C	Mixed Use 50	3.95			0.225	0.1	0.089		0.315	0.280											
58b	C-G	Mixed Use 50	0.01			0.225	0.1	0.000		0.315	0.001											
Basin 59				100.00%	3.78				0.085			0.268	1.22	3.86	3.24	-0.62	-16.1%	1.83	5.93	5.31	-0.62	-10.5%
59	C-G	Mixed Use 50	3.78			0.225	0.1	0.085		0.315	0.268											
Basin 60				100.00%	44.42				0.051			0.082	1.58	61.12	59.87	-1.25	-2.0%	2.38	93.09	91.85	-1.25	-1.3%
60a	C-C	C-C	0.02			0.225	0.1	0.000		0.1	0.000											
60b	C-C	Mixed Use 50	2.75			0.225	0.1	0.062		0.315	0.195											
60c	MU-1	Mixed Use 50	33.72			0.225	0.15	1.138		0.315	2.390											
60d	PF	PF	7.93			0.225	0.6	1.070		0.6	1.070											
Basin 61				100.00%	22.01				0.094			0.087	1.26	23.09	23.24	0.15	0.6%	1.9	35.77	35.92	0.15	0.4%
61a	FP	FP	2.26			0.225	1	0.509		1	0.509											
62b	MU-2	Mixed Use 50	19.75			0.225	0.352	1.564		0.315	1.400											
Basin 62				100.00%	3.18				0.080			0.071	1.33	3.58	3.60	0.02	0.7%	2	5.50	5.52	0.02	0.4%
62a	FP	FP	0.01			0.225	1	0.002		1	0.002											
62b	MU-2	Mixed Use 50	3.17			0.225	0.352	0.251		0.315	0.225											
TOTAL														**420.52**	**411.62**	**-8.90**	**-2.1%**		**626.57**	**617.68**	**-8.90**	**-1.4%**

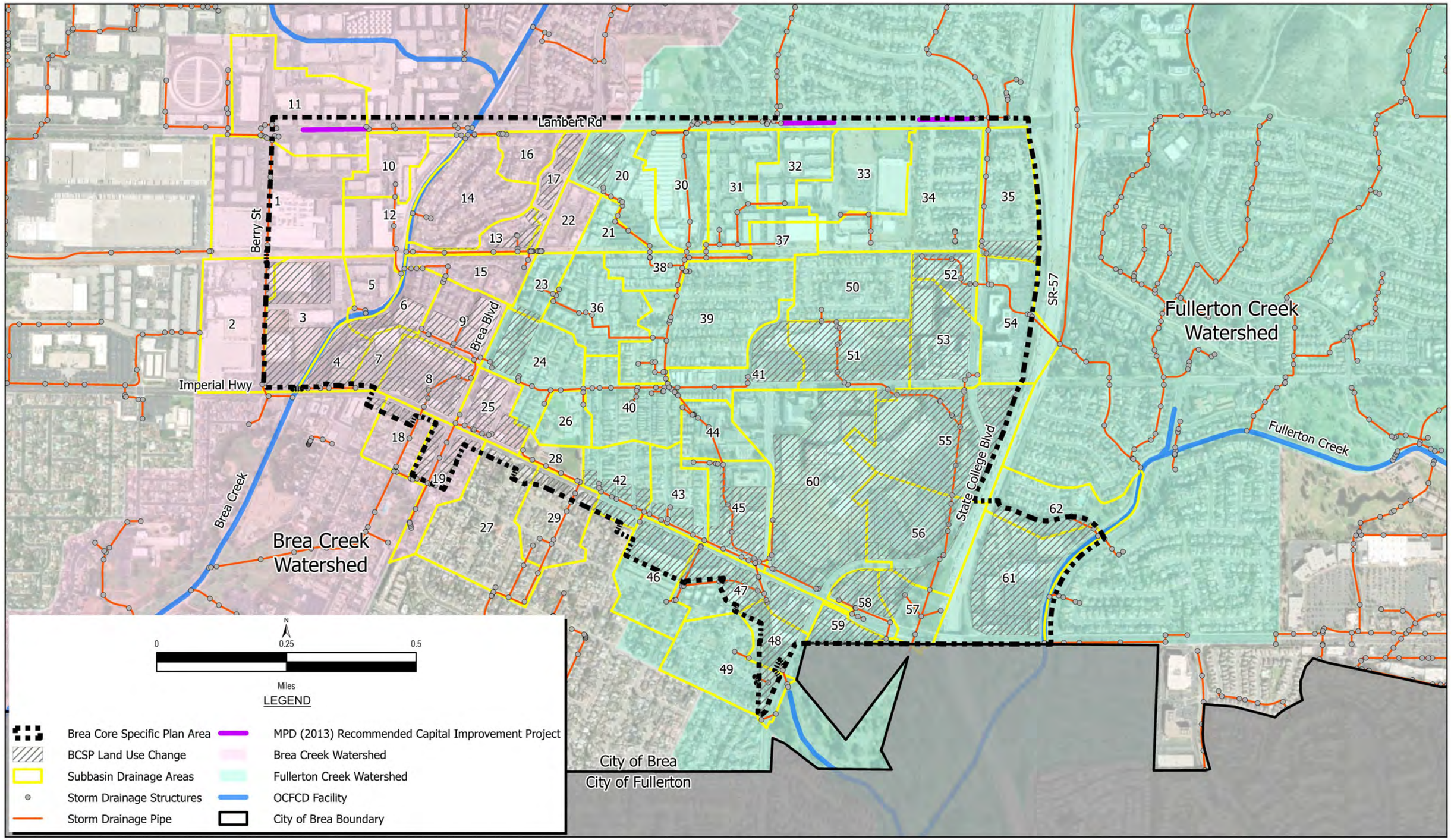


Figure 1

Storm Drain System Within BCSP Area

Harris & Associates

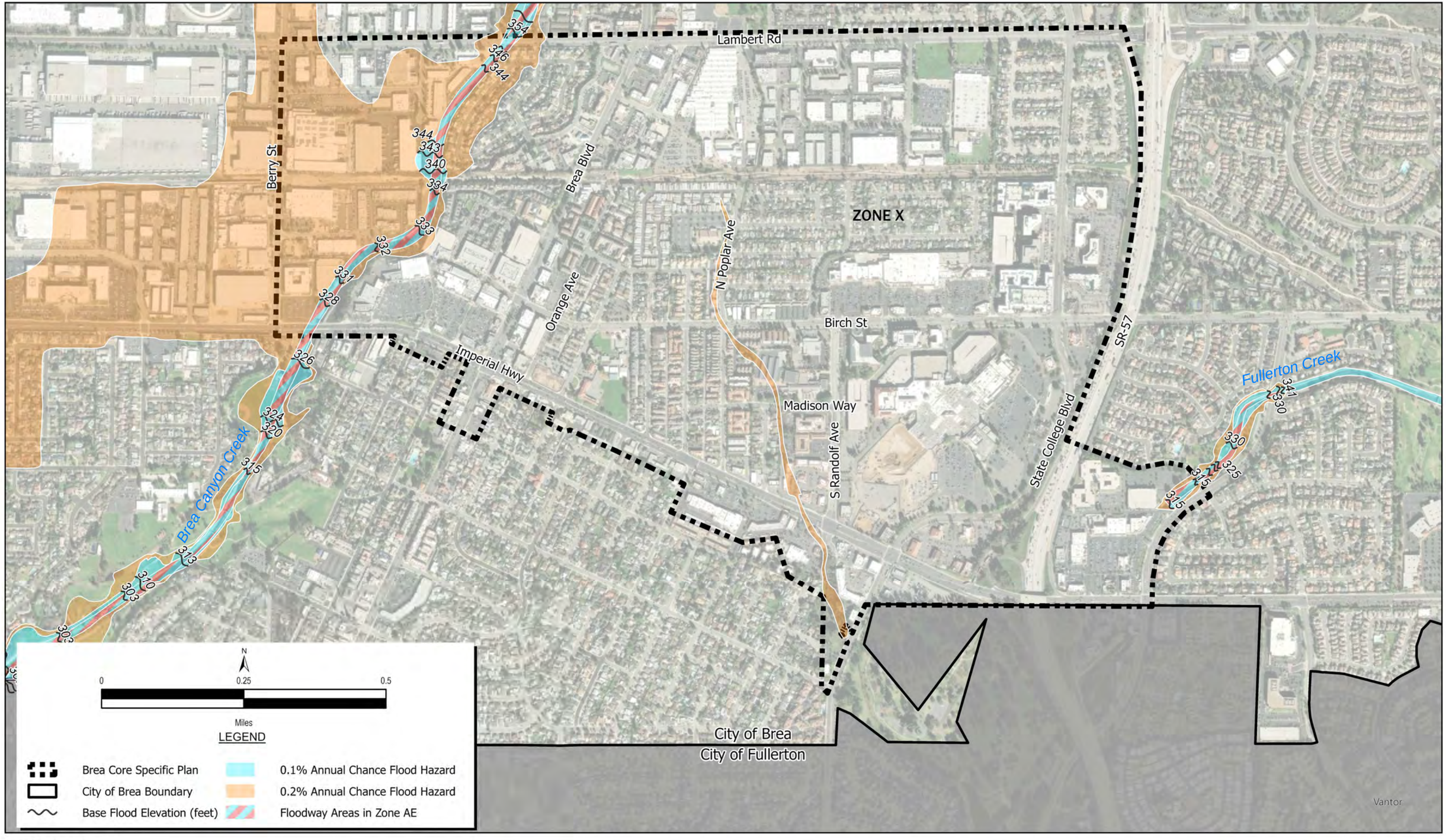


Figure 2

FEMA National Flood Hazard Layer

Drainage Impact Study - Brea Core Specific Plan

Harris & Associates

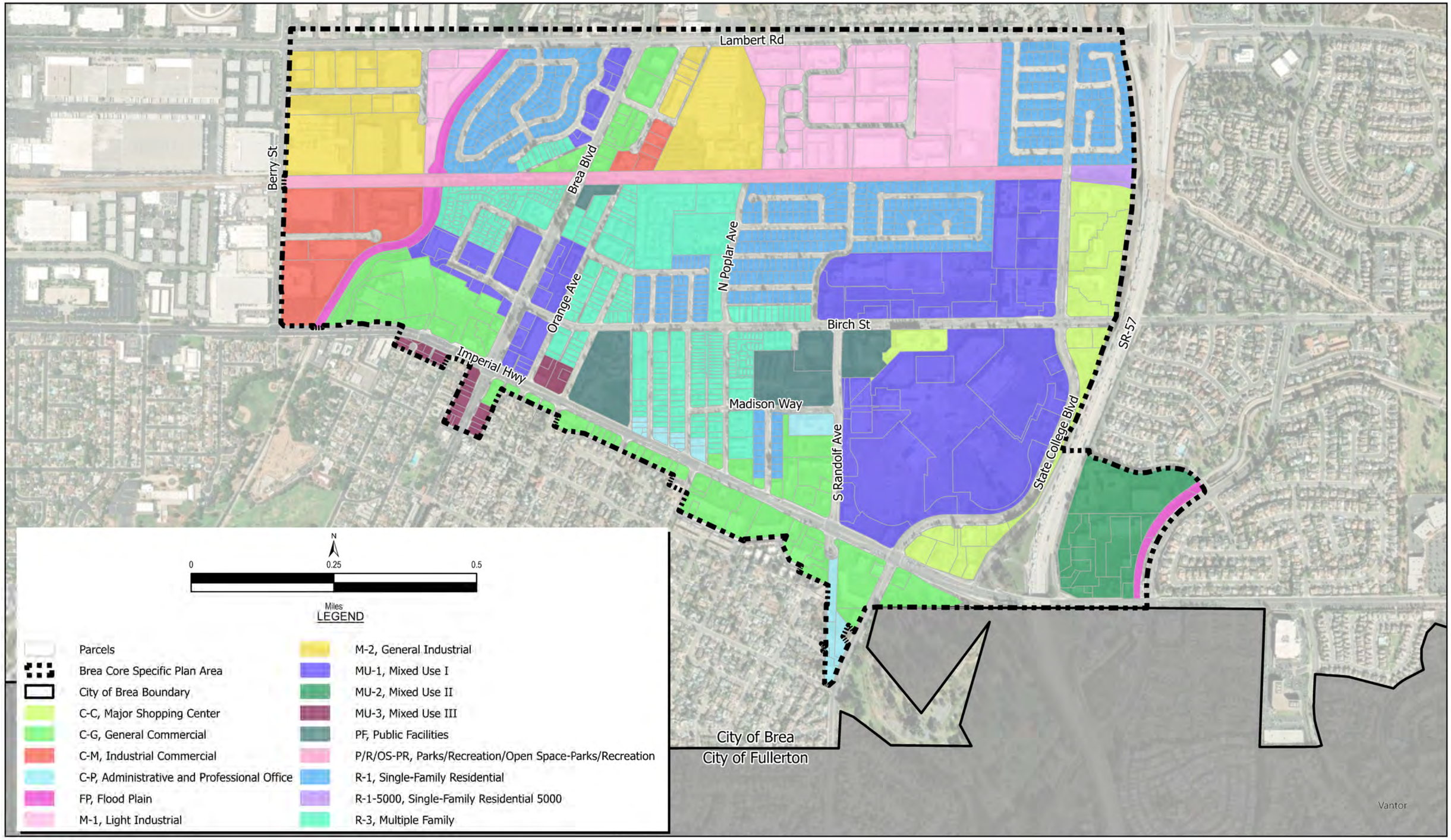


Figure 3

Existing Land Use

Harris & Associates

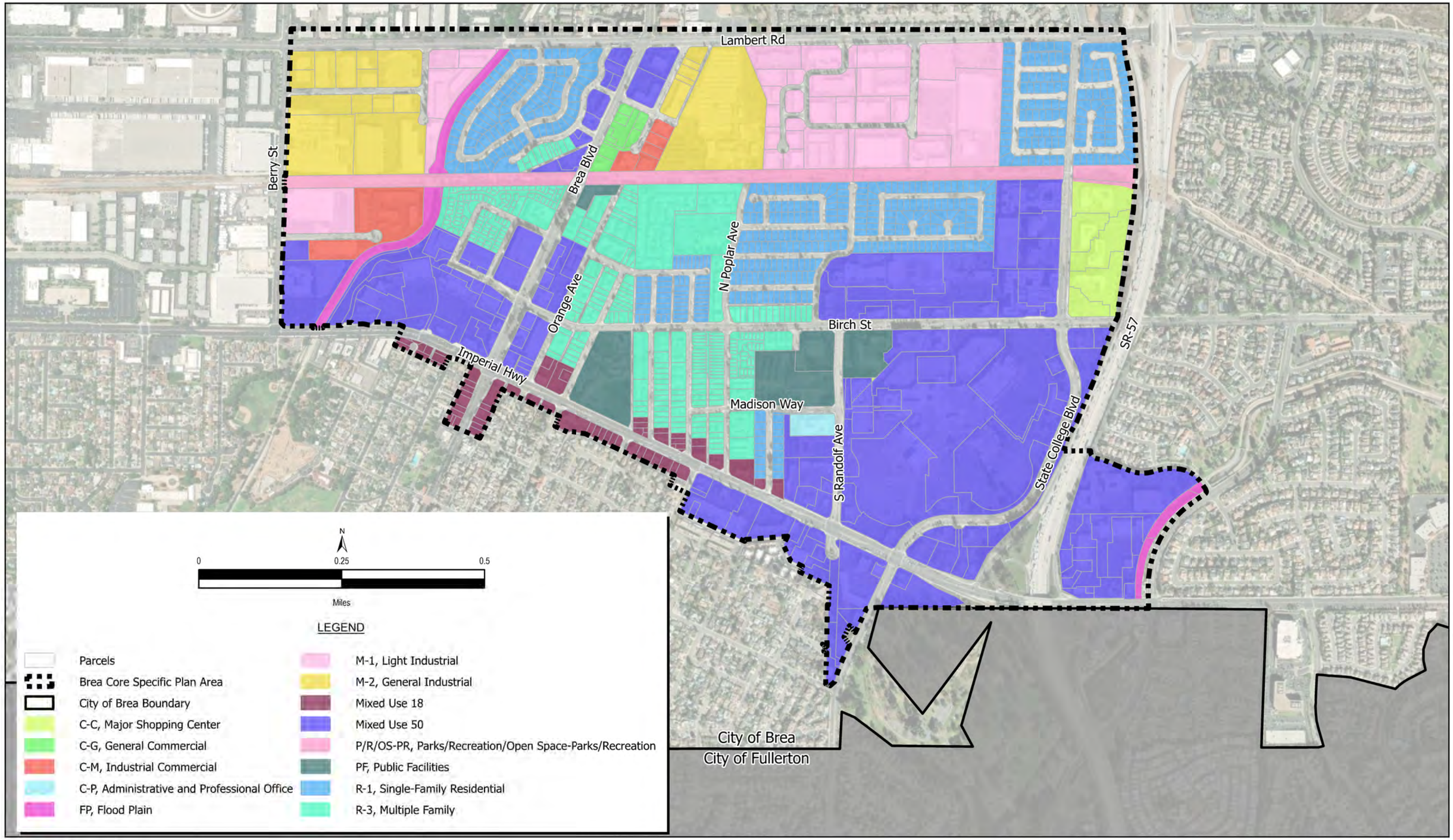


Figure 4

Brea Core Specific Land Use

Harris & Associates

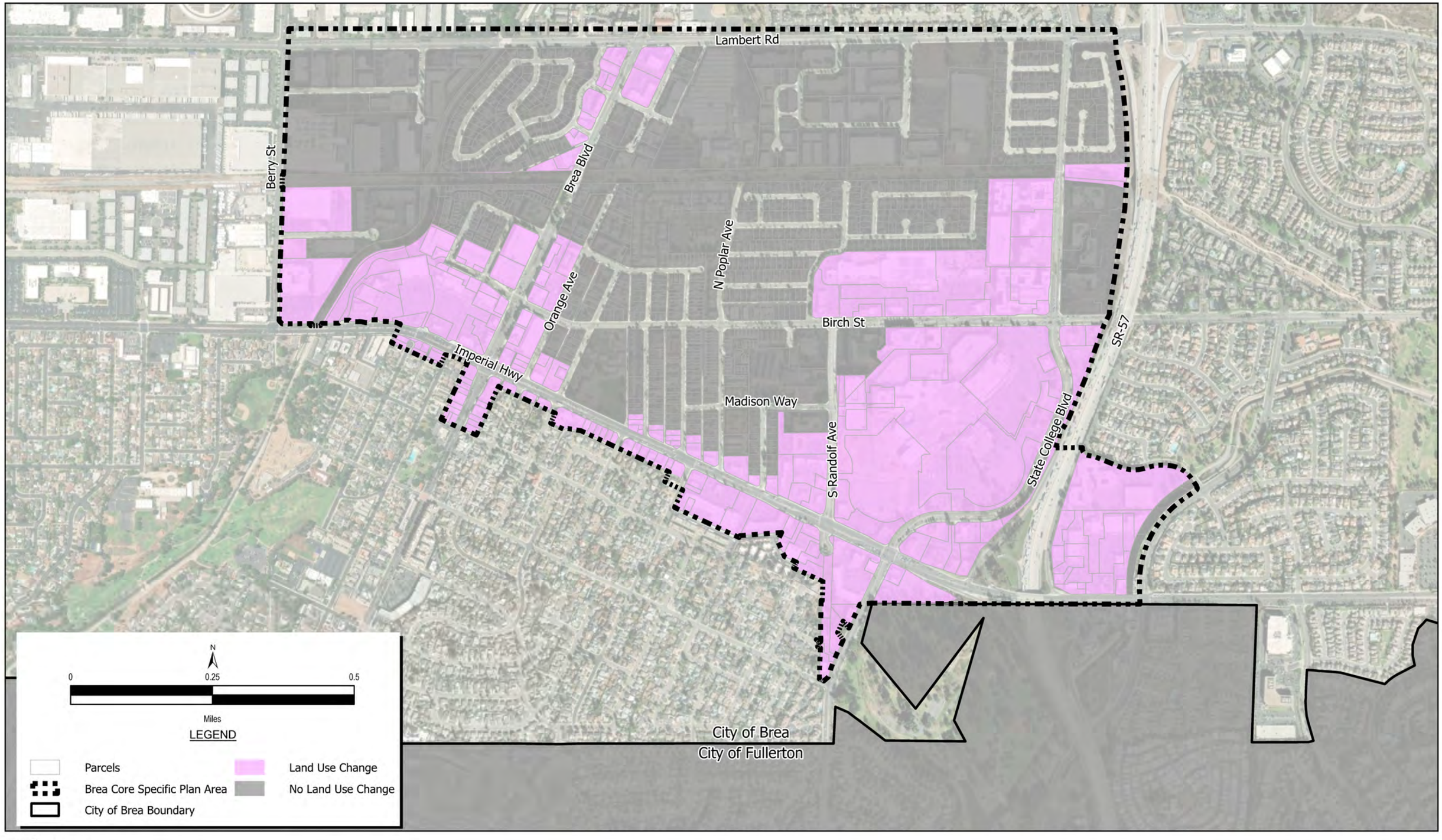


Figure 5

BCSP Land Use Change

Harris & Associates

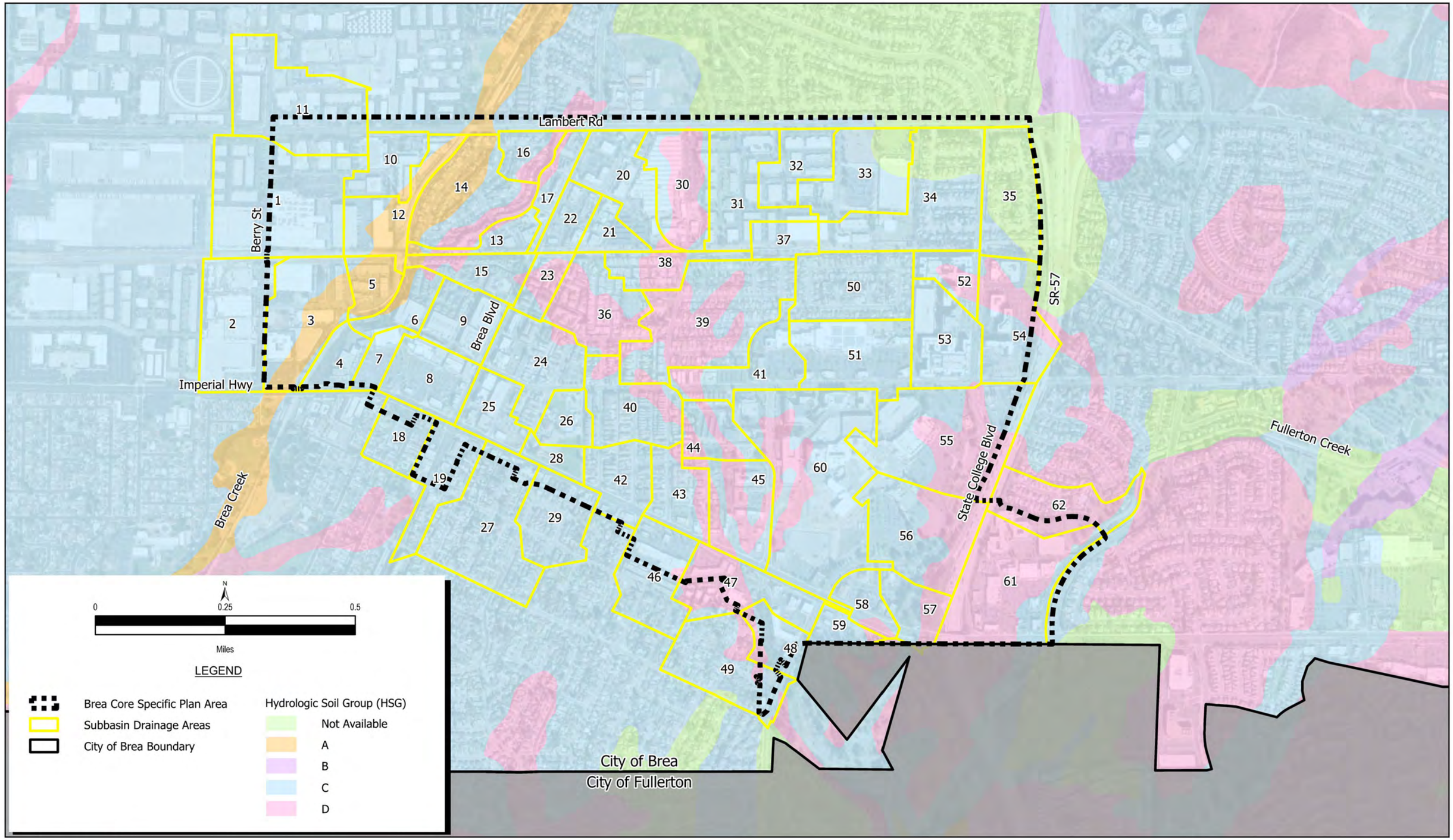


Figure 6

NRCS Hydrologic Soil Group (HSG) Within BCSP Area

Harris & Associates

Attachment A

ACTUAL IMPERVIOUS COVER

Land Use (1)	Range-Percent	Recommended Value For Average Conditions-Percent (2)
Natural or Agriculture	0 - 0	0
Public Park	10 - 25	15
School	30 - 50	40
most of the public facilities in the study area are schools		
Single Family Residential: (3)		
2.5 acre lots	5 - 15	10
1 acre lots	10 - 25	20
2 dwellings/acre	20 - 40	30
3-4 dwellings/acre	30 - 50	40
5-7 dwellings/acre	35 - 55	50
8-10 dwellings/acre	50 - 70	60
More than 10 dwellings/acre	65 - 90	80
Multiple Family Residential:		
Condominiums	45 - 70	65
Apartments	65 - 90	80
Mobile Home Park	60 - 85	75
Commercial, Downtown Business or Industrial	80 - 100	90

Notes:

1. Land use should be based on ultimate development of the watershed. Long range master plans for the County and incorporated cities should be reviewed to insure reasonable land use assumptions.

2. Recommended values are based on average conditions which may not apply to a particular study area. The percentage impervious may vary greatly even on comparable sized lots due to differences in dwelling size, improvements, etc. Landscape practices should also be considered as it is common in some areas to use ornamental gravels underlain by impervious plastic materials in place of lawns and shrubs. A field investigation of a study area shall always be made, and a review of aerial photos, where available, may assist in estimating the percentage of impervious cover in developed areas.

3. For typical equestrian subdivisions increase impervious area 5 percent over the values recommended in the table above.

ORANGE COUNTY
HYDROLOGY MANUAL

ACTUAL IMPERVIOUS COVER FOR DEVELOPED AREAS

Figure C-4

Appendix M. Water Supply Assessment

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Water Supply Assessment for the Brea Focused General Plan Update and Brea Core Specific Plan

February 2026

City of BREA

Harris & Associates

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Appendix 1: Main San Gabriel Basin, 2014 Amended Adjudication
Appendix 2: La Habra Notice to Become a GSA and Brea/La Habra MOU

ACRONYMS AND ABBREVIATIONS

AFY	Acre Feet per Year
BCSP	Brea Core Specific Plan
GPU	General Plan Update
CEQA	California Environmental Quality Act
CITY	City of Brea
CDWC	California Domestic Water Company
CWC	California Water Code
DU	Dwelling Unit
DWR	California Department of Water Resources
GPCD	Gallons per capita per day
GSA	Groundwater Sustainability Agency
GSP	Groundwater Sustainability Plan
IRP	Integrated Water Resources Plan
MAFY	Million Acre Feet per Year
MET/MWD	Metropolitan Water District of Southern California
MFR	Multi-Family Residential
MG	Million Gallons
MGD	Million Gallons per Day
MWDOC	Metropolitan Water District of Orange County
SFR	Single Family Residential
SGMA	Sustainable Groundwater Management Act
SB 221	Senate Bill 221 (Chapter 642, Statues of 2001)
SB 610	Senate Bill 610 (Chapter 643, Statues of 2001)
SOI	Sphere of Influence
SQ FT	Square Feet
SWP	State Water Project
UWMP	Urban Water Management Plan
WSA	Water Supply Assessment
WSCP	Water Shortage Contingency Plan

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1 INTRODUCTION

The City of Brea (City) is preparing the Brea 2050: Focused General Plan Update (Focused GPU) and the Brea Core Specific Plan (BCSP). The Focused GPU includes a focused update to, and implementation of, the 2003 Brea General Plan, specifically the Community Development (land use, circulation, economic development), Community Resources (open space), Community Services (recreation, education, cultural arts), and Public Safety chapters, with an emphasis on the land use and circulation components.

The project also includes a new specific plan, the BCSP, which would implement the values identified in the 2017 Brea Envisions, along with the goals, policies, and recommendations of the 2020 Core Active Transportation Plan. The BCSP would establish land uses, provide mobility recommendations and streetscape improvements, propose infrastructure upgrades to support proposed development, and outline implementation strategies for the BCSP area (identified as the Brea Core Study *Area* in Figure 2).

This Water Supply Assessment (WSA) addresses both the Focused GPU and the BCSP. The BCSP is a subset of the Focused GPU (i.e., it is included in the Focused GPU total figures). The Focused GPU is expected to be included in the 2025 Urban Water Management Plan. The Focused GPU includes 2,225 new residential units and 171 additional acres of commercial, industrial and public development, as shown in Table 1. The BCSP includes 160 new residential units and 27 acres of new commercial, industrial and public development. These totals differ from the total new units and square footage referenced elsewhere in the Program Environmental Impact Report (PEIR). In order to develop a reasonable estimate of water usage associated with development, this report used net new number of units for residential and net new acreage for commercial, industrial and public spaces. Please see Table 1 and Table 2 for a reconciliation to the PEIR. In these tables, the figures used as a basis for water demand estimates are highlighted in blue.

To meet its constituents' water demands, the City of Brea primarily uses groundwater and, to a much lesser extent, surface water. In 2024, City water demand was 8,995 acre feet per year (AFY). The Focused GPU projects an increase in water demand of 1,038 AFY at full build-out of the plan. The BCSP projects an increase of 84 AFY. The BCSP is a subset of the Focused GPU so these figures are not additive.

This WSA finds that there is sufficient water supply to support the Focused GPU, including the BCSP.

TABLE 1: BREA FOCUSED GENERAL PLAN UPDATE

	Residential		Nonresidential SF		Residential	Nonresidential	
	Existing	Proposed	Existing	Proposed	Net New Units	Net New SF	Net New Acreage
Single Family Residential	**9,026**	**11,193**	30,791	1,072,150	**2,167**	1,041,359	24
Multifamily Residential	**6,609**	**6,667**	0	583,044	**58**	583,044	13
Commercial	29	4,332	**5,484,018**	**7,946,844**	4,303	**2,462,826**	**57**
Industrial	0	412	**15,887,605**	**20,400,537**	412	**4,512,932**	**104**
Public	3	256	**0**	**420,428**	253	**420,428**	**10**
Open	678	876	78,000	164,190	198	86,190	2
TOTAL	16,345	23,736	21,480,414	30,587,193	7,391	9,106,779	173
Total Used for Water Demand Estimates	**15,635**	**17,860**	**21,371,623**	**28,767,809**	**2,225**	**7,396,186**	**171**

TABLE 2: BREA CORE SPECIFIC PLAN

	Units		Nonresidential SF		Residential	Nonresidential	
	Existing	Proposed Plan	Existing	Proposed Plan	Net New Units	Net New SF	Net New Acreage
Single Family Residential	**731**	**869**	0	7,521	**138**	7,521	0
Multifamily Residential	**659**	**681**	0	26,029	**22**	26,029	1
Commercial	27	2,824	**2,984,414**	**3,890,829**	2,797	**906,415**	**21**
Industrial	0	13	**2,051,448**	**2,220,784**	13	**169,336**	**4**
Public	0	167	**0**	**70,238**	167	**70,238**	**2**
Open	0	198	**78,001**	**164,187**	198	86,186	2
TOTAL	1,417	4,752	5,113,863	6,379,588	3,335	1,265,725	30
Total Used for Water Demand Estimates	**1,390**	**1,550**	**5,035,862**	**6,346,038**	**160**	**1,145,989**	**27**

1.1 REGULATORY FRAMEWORK

Several bills enacted in 2001 address the marriage of land use planning and water supply planning. Key among these were Senate Bill 610 (SB 610), which amended Water Code section 10910 *et seq*., and Senate Bill 221 (SB 221), which added Government Code section 66473.7. Both bills, which took effect January 1, 2002, require that specific information about water availability be presented and considered by cities in connection with certain large projects.

The public water system that serves the area described by the project is the City of Brea, Public Water System #CA3010002.

This report serves as the WSA for the BCSP to meet the California Water and Government Code requirements.

1.1.1 SB 610

SB 610 requires that any city or county that determines that a project is subject to the California Environmental Quality Act (CEQA) under section 21080 of the Public Resources Code shall prepare a Water Supply Assessment (WSA) to determine the sufficiency of water supply to meet water demand during normal, single dry, and multiple dry water years over a 20-year projection period. The Focused GPU/BCSP includes more than 500 dwelling units; as such, the City has determined that it is a project subject to CEQA.

1.1.2 SB 221

SB 221 requires that proposed subdivisions adding more than 500 dwelling units must also receive written verification of the available water supply from the project's water supplier. The Focused GPU and BCSP do not involve the creation of a subdivision or a subdivision tract map, so no written verification is required to be provided to a developer.

1.2 SOURCES OF DATA

The following sources of data were utilized in developing this report:

- Basin 8-1 Alternative: Orange County Water District, City of La Habra, and Irvine Ranch Water District. January 1, 2017
- Brea 2020 Urban Water Management Plan. June 2021.
- Brea 265 Water Supply Assessment, May 2022
- Focused GPU Brea Parcels Buildout Draft database, July 21, 2025.
- California Department of Public Health's Orange County Climate Change and Health Profile Report, February 2017.
- City of Brea 2021 Water Master Plan, May 2021.

- City of La Habra Notice to Become a Groundwater Sustainability Agency. January 20, 2016.
- Main San Gabriel Basin Watermaster Report on Final Determination of Operating Safe Yield for 2024-25 through 2028-29. May 1, 2024.
- Metropolitan Water District of Southern California Urban Water Management Plan. June 2021.
- Upper San Gabriel Valley Municipal Water District, Plaintiff, vs. City of Alhambra, et al, Defendants (Amended Judgment). June 21, 2012.

1.3 CITY OF BREA PUBLIC WATER SYSTEM

The City is located in northern Orange County between the City of La Habra on the west, City of Fullerton on the southwest, the City of Yorba Linda on the southeast and the County of Los Angeles on the north and encompasses an area of approximately 12.1 square miles (Figure 1).

The City's Water Division is responsible for the City's potable water system, including backflow prevention and water quality issues. As shown in Figure 1, the Water Division serves all the City's area, with the following exceptions:

- The City serves one residence on Vesuvius Drive and nine residences on Spurr Circle within the Vesuvius tract.

- The remainder of residences in the Vesuvius Tract are served by Yorba Linda Water District.

The City's water service area population was 45,629 in 2020 according to its 2020 UWMP.

The City's distribution system consists of 217 miles of pipeline and seven storage reservoirs with a combined storage capacity of 69.5 million gallons (MG). The system also includes five booster pump stations with a total pumping capacity of approximately 14,800 gallons per minute (gpm), 18 pressure zones, 97 pressure reducing stations to regulate 18 pressure zones, an irrigation well, a total of 4 connections with MWD and CDWC, and 5 emergency interconnections.

In 2024, the City served 12,946 municipal connections that supplied 8,995 acre feet (AF) of water. The City also manages an irrigation well located at the Brea Creek Golf Course that pumps up to 450 gpm to serve the golf course.

FIGURE 1: CITY OF BREA WATER SERVICE AREA, SOURCE: 2021 WATER MASTER PLAN

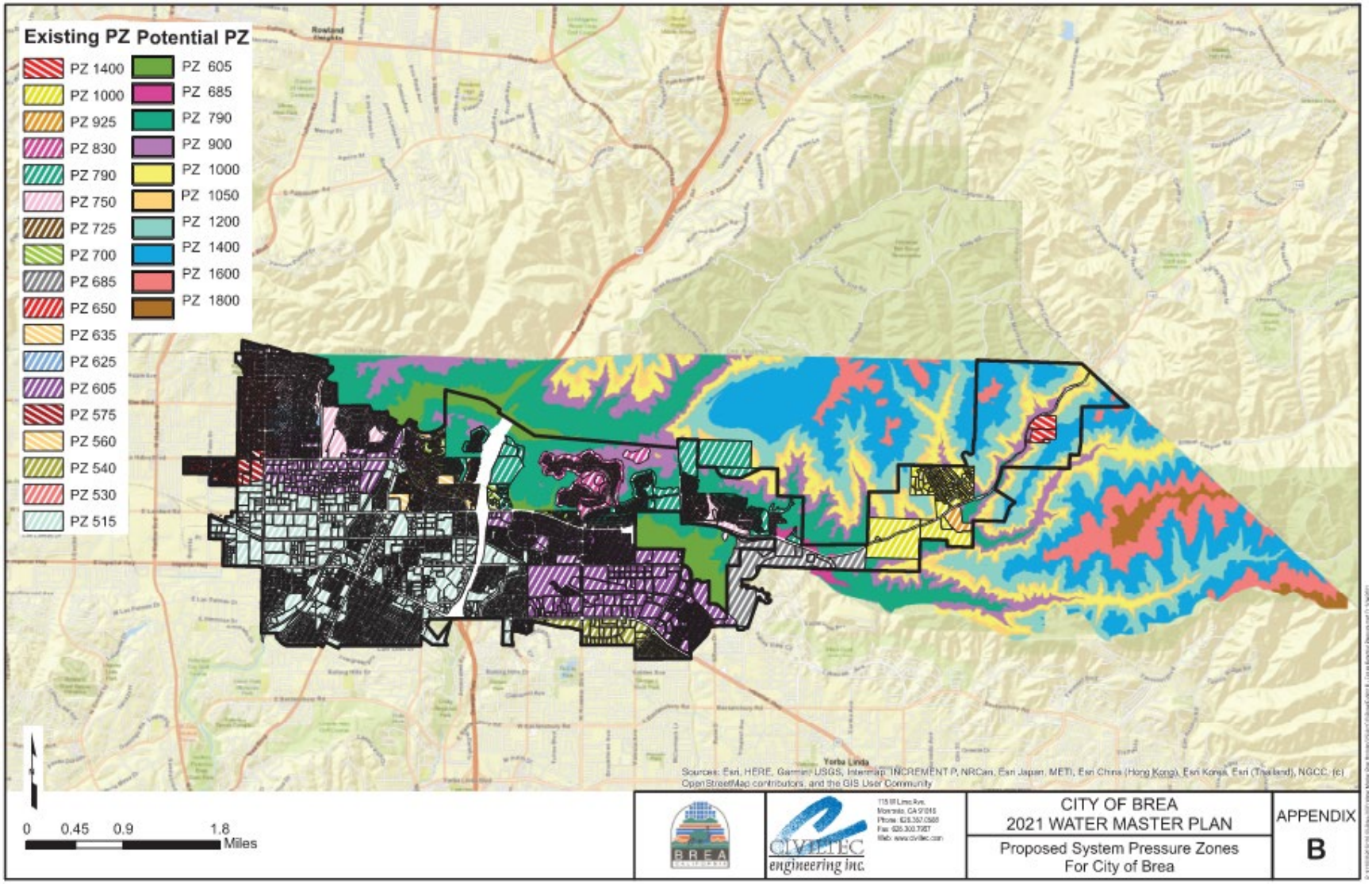
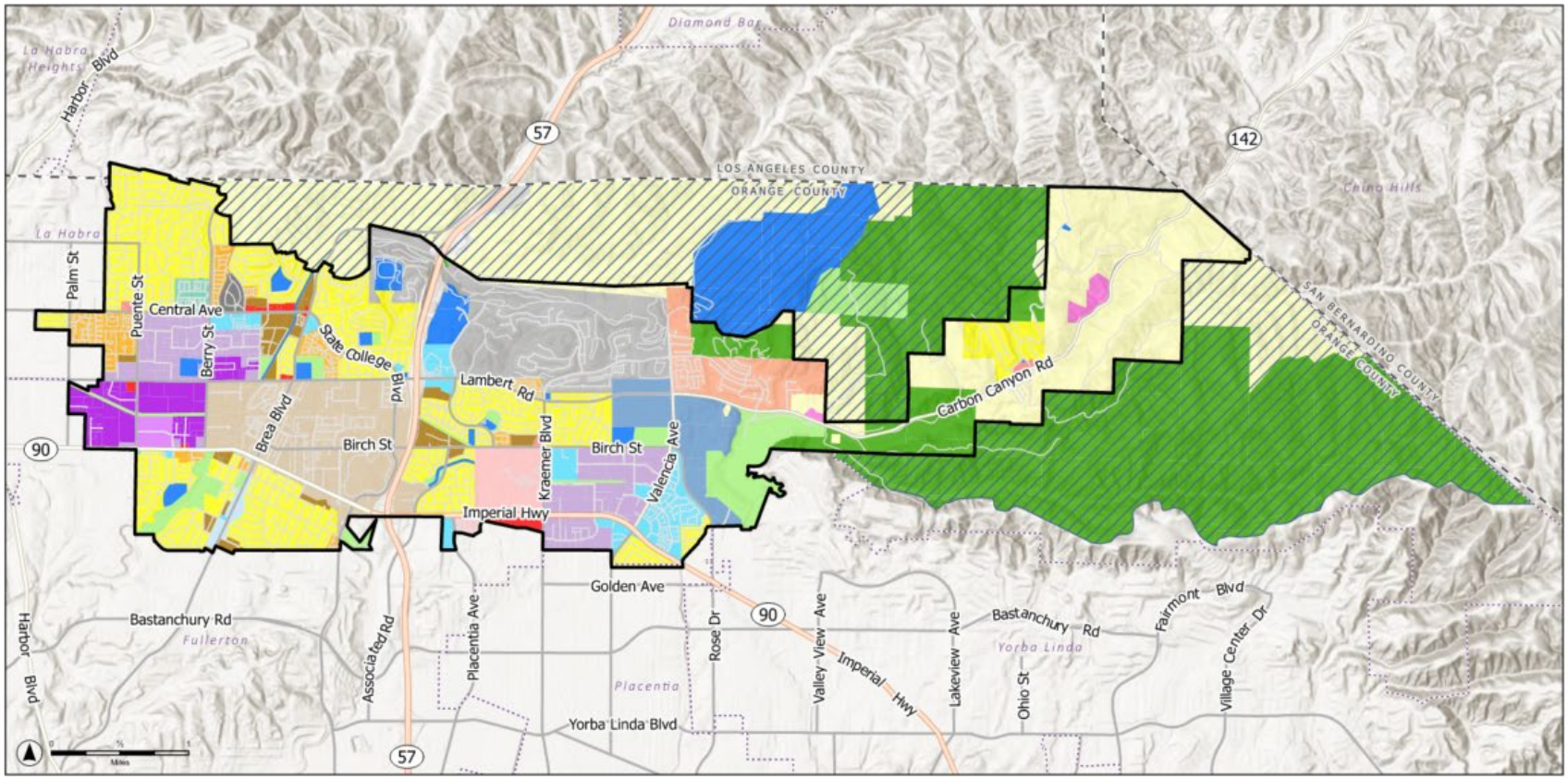


FIGURE 2: BREA CITY LIMITS AND BREA CORE STUDY PLAN



1.4 PROJECT OVERVIEW

The Focused GPU includes a focused update to, and implementation of, the 2003 Brea General Plan, specifically the Community Development (land use, circulation, economic development), Community Resources (open space), Community Services (recreation, education, cultural arts), and Public Safety chapters, with an emphasis on the land use and circulation components.

The project also includes a new specific plan, the BCSP, which would implement the values identified in the 2017 Brea Envisions, along with the goals, policies, and recommendations of the 2020 Core Active Transportation Plan. The BCSP would establish land uses, provide mobility recommendations and streetscape improvements, propose infrastructure upgrades to support proposed development, and outline implementation strategies for the BCSP area (identified as the Brea Core Study *Area* in Figure 2). For the purposes of this WSA, the BCSP includes a total of 1,550 residential units and 6,346,038 square feet of non-residential uses within the BCSP area.

This WSA addresses both the Focused GPU and the BCSP. The BCSP is a subset of the Focused GPU (i.e., it is included in the Focused GPU total figures). The Focused GPU is expected to be included in the 2025 UWMP.

1.5 CITY OF BREA 2020 URBAN WATER MANAGEMENT PLAN

The City updates its Urban Water Management Plan (UWMP) every 5 years. The latest plan is the 2020 City of Brea UWMP.

The UWMP provides information on present and future water demand and supplies and assesses the City's water resource reliability over the next 25 years. It also acts as a guide to maintain efficient use of urban water supplies, promote conservation programs and policies, and proactively plan and update the City's strategies to address potential water shortages and drought conditions.

The UWMP addresses water-planning fundamentals by:

- Preparing a detailed look at current and future water use, including assessing baseline data and examining other long-term planning documents for the region.
- Analyzing potable and non-potable water supplies, reviewing water rights and contracts, ascertaining restrictions on water availability under certain regulatory and hydrological conditions, and assessing seismic risk to various water system facilities.
- Reviewing the range of potential impacts of climate change on water demand and supply.
- Analyzing water supply reliability by integrating the water use analyses with the water supply analyses to provide a water service reliability picture under normal

conditions, single dry-year conditions, and 5 consecutive dry-years through the year 2045.
- Preparing a Drought Risk Assessment by including integrated water supplies and projected water use in a hypothetical 5-year drought condition.
- Developing a Water Shortage Contingency Plan (WSCP) that specifies opportunities to reduce demand and augment supplies under numerous water shortage conditions.

The UWMP includes general growth rates for commercial, industrial, and public water connections. However, these growth rates do not correspond to the GPU so a full water supply assessment is included herein.

2 WATER DEMAND

2.1 HISTORICAL WATER DEMAND

In 2024, water demand in the City totaled 8,995 acre feet. Historical demand for 2020-2024 is provided in Table 3 below. Note that beginning in 2022, the State of California allowed Urban Water Suppliers to combine reporting for Commercial, Industrial and Institutional/Governmental water into one category, CII. Therefore, no breakdown for those categories is available after 2021.

TABLE 3: WATER DEMAND, 2020-2024

Acre-Feet / Year (AFY)	2020	2021	2022	2023	2024
SFR	3,627	3,957	3,539	3,201	3,432
MFR	1,048	1,169	1,133	1,163	1,166
CII*	0	0	2,938	2,372	2,369
Commercial	1,041	2,168		0	0
Industrial	733	738		0	0
Institutional/Governmental	848	0		0	0
Landscape -- Potable	1,280	1,520	1,524	1,305	1,465
Losses	462	213	387	339	474
Landscape -- La Habra	92	0	107	98	89
Total	**9,131**	**9,765**	**9,628**	**8,478**	**8,995**

*Starting in 2022, the State allowed the cities to combine reporting for Commercial, Industrial and Institutional/Governmental water into one category, CII. No breakdown for those categories is available after 2021.

2.2 WATER DEMAND IN AVERAGE AND DRY YEARS

Based on the 2020 UWMP, fiscal year (FY) 2017-2018 and 2018-2019 represent average water use years. The UWMP does not provide usage for these fiscal years; however, it does provide Water Loss Reports for calendar years 2017-2019. These reports indicate authorized usage (excluding water losses) as shown in Table 4 below. Average water use was 8,902 AFY. This figure is very close to water demand in 2024. Therefore, 2024 water demand of 8,995 AFY was considered an Average Year Demand.

TABLE 4: ANNUAL DEMAND 2017-2019 (AFY)

2017	2018	2019	Average
8,587	9,379	8,740	8,902

The UWMP indicates that water demand increases 6% over the average year in a single dry year. This increase holds steady over five consecutive dry years; that is, in the second dry year, demand increases 6% over the average year and similarly for the third, fourth and fifth consecutive dry years. Therefore, average water use in dry years is 106% of the average year, or 9,436 AFY.

2.3 PROJECTED GROWTH

The Brea Parcels Buildout Draft spreadsheet included extensive data on each parcel in the City. This database was used to develop estimates of changes in water demand associated with full build out of both the Focused GPU and the BCSP. Data analyzed for each parcel included:

- Current General Plan zoning designation
- Planned General Plan Update zoning designation
- SCAG designation
- Number of units – existing and planned
- Square footage – existing and planned

Each parcel was assigned one of the user-types below:

- SFR
- MFR
- Commercial
- Industrial
- Public/Governmental: Includes government facilities, fire stations, public schools, religious facilities, and utilities
- Open Space

User types were summarized and assessed for new growth. The results of this analysis are presented in Table 5 and Table 6 below. Under the Focused GPU, at full build out there are 2,225 new residential units and 171 additional acres of commercial, industrial, and public space. For the BCSP, full build-out represents 160 new residential units and 27 acres of new commercial, industrial, and public space.

TABLE 5: GROWTH AT FULL BUILD OUT, BREA FOCUSED GENERAL PLAN UPDATE

	Net New Units	Net New Acreage
SFR	2,167	
MFR	58	
Comm		57
Industrial		104
Public		10
TOTAL	**2,225**	**171**

TABLE 6: GROWTH AT FULL BUILD-OUT, BREA CORE SPECIFIC AREA

	Net New Units	Net New Acreage
SFR	138	
MFR	22	
Comm		21
Industrial		4
Public		2
TOTAL	**160**	**27**

2.4 DUTY FACTORS

Each user-type was assigned an estimated water demand (duty factor) based on either units (for residential) or square footage.

Table 7 presents duty factors for each user-type. These results are for an "average" water year type. Duty factors are discussed in more detail in the following sections.

TABLE 7: WATER DUTY FACTORS

User-Type	Gallon / Day / Unit	AFY/ Unit	AFY / Acre	Source
SFR	339	0.38		Estimated (see section 2.4.1)
MFR	157	0.18		Estimated (see section 2.4.1)
Commercial			0.96	City of Brea 2021 Water Master Plan
Industrial			1.31	City of Brea 2021 Water Master Plan
Public			1.34	City of Brea 2021 Water Master Plan

2.4.1 RESIDENTIAL

In order to develop duty factors by residential unit, 2024 annual demand (water sold) for SFR and MFR was divided by the number of dwelling units for each. The number of units is per the General Plan. This resulted in 339 gallons/unit per day for SFR and 157 gallons/unit/day for MFR (Table 8).

TABLE 8: RESIDENTIAL DUTY FACTORS

Use Type	2024 Demand (AFY)	Dwelling Units	Annual Water Use/Unit (Gal/Day)
SFR	3,432	9,026	339
MFR	1,166	6,609	157

2.4.2 COMMERCIAL, INDUSTRIAL, AND PUBLIC

Duty factors for Commercial, Industrial, and Schools, as described in the City of Brea 2021 Water Master Plan's duty factors, were used for the WSA analysis (Table 9).

The Water Master Plan did not break out demand factors for any category of public/governmental except for schools. The Public user-type in this WSA primarily includes schools but also includes utilities and religious facilities; the latter were included in the Public category because duty factors are similar.

TABLE 9: COMMERCIAL, INDUSTRIAL, AND PUBLIC DUTY FACTORS

User-Type	Duty Factor (AFY/Acre)
Commercial	0.96
Industrial	1.31
Public (Schools)	1.34

2.5 INCREMENTAL WATER DEMAND

Based on the above analysis, the Brea Focused General Plan Update results in an estimated net new water demand of 1,038 AFY (Table 10). The Brea Core Specific Area results in net new water demand of 84 AFY (Table 11).

TABLE 10: NET NEW WATER USE, BREA FOCUSED GENERAL PLAN UPDATE

	Net New Units	Net New Acreage	Duty Factor (Gal / Unit / Day)	Duty Factor (AFY/Unit)	Duty Factor (AFY/ac)	Net New Water Use (AFY)
SFR	2,167		339	0.380		824
MFR	58		157	0.180		10
Commercial		57			0.96	55
Industrial		104			1.31	136
Public		10			1.34	13
TOTAL	**2,225**	**171**				**1,038**

TABLE 11: NET NEW WATER USE, BREA CORE SPECIFIC AREA

	Net New Units	Net New Acreage	Duty Factor (Gal / Unit / Day)	Duty Factor (AFY/Unit)	Duty Factor (AFY/ac)	Net New Water Use (AFY)
SFR	138		339	0.380		52
MFR	22		157	0.180		4
Commercial		21			0.96	20
Industrial		4			1.31	5
Public		2			1.34	3
TOTAL	**160**	**27**				**84**

2.6 TOTAL WATER DEMAND

Table 12 depicts projected water use in average water year types for 2025–2050. The table shows water use associated with the full buildout of the GPU by 2030 because there is no scheduled estimate for development. In reality, full buildout is unlikely to occur even after the 20-year horizon. Thus, this WSA gives a very conservative estimate of water usage associated with the GPU.

TABLE 12: BREA PROJECTED ANNUAL WATER DEMAND IN AVERAGE WATER YEAR WITH FULL BUILD-OUT OF BREA FOCUSED GENERAL PLAN UPDATE (AFY)

AFY	2025	2030	2035	2040	2045	2050
Existing Demand	8,995	8,995	8,995	8,995	8,995	8,995
Focused GPU Incremental Demand	n/a	1,038	1,038	1,038	1,038	1,038
Total Water Demand	**8,995**	**10,033**	**10,033**	**10,033**	**10,033**	**10,033**

2.7 CLIMATE CHANGE

California's water resources are increasingly influenced by climate variability, including more frequent droughts, shifting precipitation patterns, and higher temperatures. California experiences some of the highest precipitation variability in the United States, which has direct implications for long-term water reliability. According to Section 8.1 of the City of Brea's 2020 UWMP, water shortages may arise from "water supply quality changes, climate change, drought, and catastrophic events," and the City's water-supply planning framework is explicitly designed to respond to these climate-driven conditions. The UWMP emphasizes that proactive planning, rather than reactive management, is essential for ensuring reliable service during extended dry periods.

Regional statewide assessments also highlight climate-related vulnerabilities specific to Orange County, California. According to the California Department of Public Health's Orange County Climate Change and Health Profile Report (2017), the region is expected to experience higher average temperatures, projected to rise between 1°F and 2.3°F in the next few decades, along with increased frequency of extreme-heat days. The report also identifies heightened wildfire risk, particularly in the northern and foothill portions of Orange County, and notes that drought conditions are likely to intensify, stressing local water supplies, reducing water quality, and increasing demand. These shifts have implications for both water supply reliability and long-term water-use behavior within the City of Brea.

To address these climate-driven risks, the City maintains a robust Water Shortage Contingency Plan (WSCP), which outlines six standardized shortage levels and corresponding conservation actions. The WSCP also requires an Annual Water Supply and Demand Assessment that evaluates hydrologic conditions and supply availability each year to determine whether a shortage level should be activated. These tools,

combined with the City's broad conservation portfolio, position Brea to better manage the long-term impacts of climate change on its water supply.

2.8 DEMAND MANAGEMENT

The City of Brea demonstrates a strong, long-standing commitment to the efficient and sustainable use of its water supplies. This commitment is reflected in the City's comprehensive suite of demand management measures, coordinated closely with the Municipal Water District of Orange County (MWDOC). Together, the City and MWDOC implement a broad portfolio of programs aimed at reducing potable water use, improving system efficiency, educating customers, and promoting long-term conservation. These measures include permanent water-waste prevention ordinances, full metering of all customer classes, conservation-oriented rate structures, multilingual public education and outreach, distribution system loss control, dedicated staffing for conservation program administration, and a wide range of residential, commercial/industrial/institutional (CII), and landscape-focused rebate and efficiency programs. These efforts collectively support Brea's ethos of responsible water stewardship and the City's commitment to long-term resource reliability.

The City's water conservation framework is further supported by its Water Shortage Contingency Plan (WSCP), which provides staged response actions to address drought conditions, supply interruptions, or other water emergencies. Table 8-1 of the WSCP defines six incremental shortage levels, each with progressively higher conservation requirements and targeted demand-reduction actions. It also defines the City's procedures for monitoring supply conditions, evaluating reliability risks, enforcing conservation measures, and coordinating public communication. In accordance with State requirements, the City prepares an Annual Water Supply and Demand Assessment, which evaluates current-year demand trends, available supplies, and the necessity of activating any WSCP shortage levels. These planning and monitoring tools ensure that the City can respond rapidly and effectively to evolving supply conditions while maintaining reliable service to its customers.

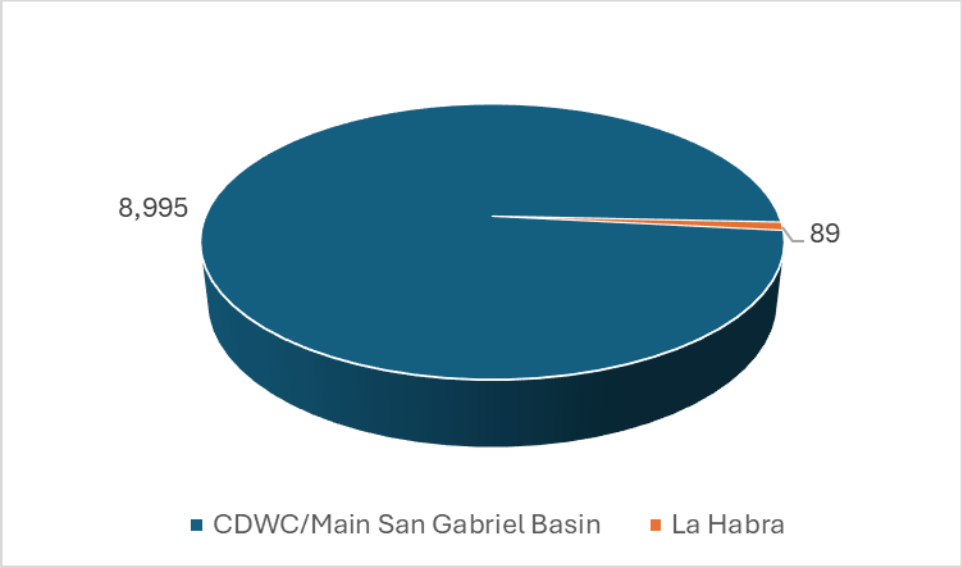
Brea's long-term demand reduction efforts have been successful and measurable. Historical water-use data from the City's Urban Water Management Plan (UWMP) demonstrates a steady downward trend in per-capita consumption. In 2007 (the baseline year used for State conservation targets) the City's potable water use averaged 221 gallons per capita per day (GPCD). By 2020, that figure had declined to 179 GPCD, reflecting the cumulative impact of the City's conservation ordinances, outreach efforts, incentive programs, pricing structure, and indoor/outdoor efficiency initiatives. The demand projections used throughout this Water Supply Assessment assume that the City and its customers will continue practicing these efficient water-use behaviors, supported by ongoing participation in MWDOC programs and adherence to the City's conservation policies.

3 WATER SUPPLY

The City's water supply includes imported groundwater and surface water, as well as its own groundwater supply. The City is physically located above the La Habra Groundwater Basin, but imports most of its water from the adjacent Main San Gabriel Basin, provided by California Domestic Water Company (CDWC). The City also extracts local groundwater from the La Habra Groundwater Basin (Basin). As needed, the City may import surface water from the Colorado River and State Water Project (SWP) provided by Metropolitan Water District of Southern California (MWD) via Metropolitan Water District of Orange County (MWDOC).

Ninety-nine percent of the City's water is from the CDWC, which provides water from the Main San Gabriel Basin. The City also pumps groundwater from the La Habra Groundwater Basin, which provides non-potable water from one well for agricultural purposes only. According to the 2020 UWMP, the reasonable available volume of CDWC water is 9,000 AFY. If the City requires additional potable water, it is sourced from MWD. Assumed water sources for 2024 are shown in Figure 3.

FIGURE 3: 2024 WATER SOURCES



3.1 MAIN SAN GABRIEL BASIN

The Main San Gabriel Basin lies in eastern Los Angeles County and occupies most of San Gabriel Valley. The hydrologic basin or watershed coincides with a portion of the upper San Gabriel River watershed, and the aquifer or groundwater basin underlies most of the San Gabriel Valley (Figure 4). It is bounded on the north by the San Gabriel Mountains, on the northwest by Raymond Basin, on the southeast by Puente Basin, and on the south by Central Basin. The Main San Gabriel Basin encompasses approximately

107,000 acres and has a storage of 8.9 million acre feet when the groundwater elevation at the Baldwin Park Key Well is 316 feet. Generally speaking, one foot of groundwater elevation is equivalent to approximately 8,000 AF of storage.

The basin was first adjudicated in 1972. The judgment was amended numerous times, with the most recent occurring in 2012 (see Appendix 1). Under the judgment, The CDWC has Producer rights.

CDWC, a mutual water company, provides groundwater from the Main San Gabriel Basin to each of its member agencies who own and/or lease stock in the company. There are two classes of entitlement with CDWC, which translate to different water allotments: “common stock entitlement” and “other entitlement.” As of 2020, the City owns approximately 2,208 and leases another 188 common stock entitlements, which translates to an entitlement allotment of approximately 3,475 AFY. As for other entitlements, the City owns approximately 2,189 shares, which translates to approximately 1,663 AFY (City of Brea, 2021). The City is able to lease additional shares of CDWC stock from member agencies that do not use their maximum allotted amount.

The City receives water from CDWC through three metered connections. Each connection is gravity fed and comes from one of two CDWC hydraulic lift systems.

Each CDWC member agency receives a prescribed entitlement to water based upon the number of shares owned and the safe yield of the Main San Gabriel Basin. The member agency entitlement criterion per share varies year by year, based on CDWC’s allotted percentage and the Basin Operating Safe Yield (OSY) of the Main San Gabriel Basin. As such, there is not a permanent limit or cap on the amount of water CDWC can produce from the Basin. CDWC owns approximately 12,363 AF of prescriptive pumping rights in the Main San Gabriel Basin. Prescriptive pumping rights are adjusted based on the determination of the OSY annually. Based on the Main San Gabriel Basin Watermaster Report on FY 2024-25 Operating Safe Yield (OSY) being set at 160,000 AF, CDWC’s prescriptive pumping rights total approximately 10,018 F. Currently, this is the amount of groundwater CDWC can produce from the Basin before incurring replacement water assessments. The OSY is determined annually by the Main San Gabriel Basin Watermaster, the agency created by the Main San Gabriel Judgment to manage the Main San Gabriel Basin. Agencies that use water beyond their share of entitlement must pay a surcharge levied by CDWC.

Main San Gabriel Basin replenishes supplies through surface water delivered by Metropolitan Water District of Southern California (MWD).

3.2 METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA

MWD was formed in the late 1920's. Collectively, charter members recognized the limited water supplies available within the region and realized that continued prosperity and economic development of Southern California depended upon the acquisition and

careful management of an adequate supplemental water supply. This foresight made the continued development of Southern California possible.

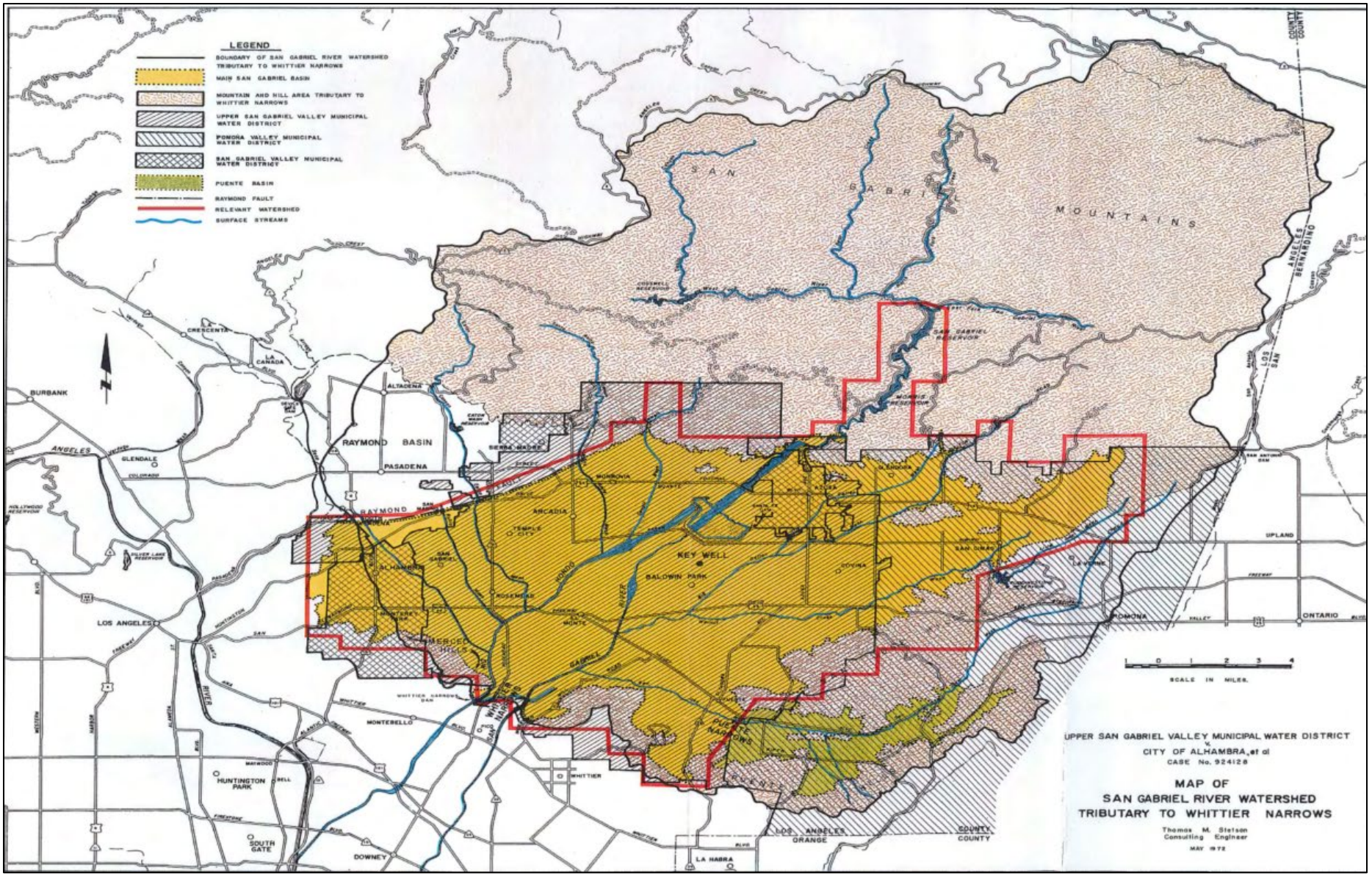
MWD acquires water from Northern California via the State Water Project (SWP) and from the Colorado River to supply water to most of Southern California. As a wholesaler, MWD has no retail customers and distributes treated and untreated water directly to its 26 member agencies.

MWD's 2020 UWMP finds that it can meet full-service demands of its member agencies from 2020 through 2045 during normal years, a single dry year, and multiple dry years (Table 13). Its UWMP was developed as part of the 2020 Integrated Water Resources Plan (IRP) planning process. The IRP represents MWD's comprehensive blueprint for long-term water reliability, including key supply development and water use efficiency goals. The foundation of MWD's resource strategy for achieving regional water supply reliability has been to develop and implement water resources programs and activities through its IRP preferred resource mix. This preferred resource mix includes conservation, local resources such as water recycling and groundwater recovery, Colorado River supplies and transfers, SWP supplies and transfers, in-region surface reservoir storage, in-region groundwater storage, out-of-region banking, and treatment, conveyance, and infrastructure improvements.

TABLE 13: MWD SUPPLY AND DEMAND (SOURCE: MWD 2020 UWMP)

(AFY)	2025	2030	2035	2040	2045
NORMAL (AVERAGE) WATER YEAR					
Supply under Current Programs					
In-Region Supplies and Programs	875,000	877,000	876,000	876,000	874,000
California Aqueduct	1,774,000	1,766,000	1,764,000	1,762,000	1,761,000
Colorado River Aqueduct	1,250,000	1,250,000	1,250,000	1,250,000	1,250,000
Total Supply	**3,899,000**	**3,893,000**	**3,890,000**	**3,888,000**	**3,885,000**
Demand					
Total Demands on MWD	1,149,000	1,110,000	1,084,000	1,100,000	1,125,000
Exchange with SDCWA	278,000	278,000	278,000	278,000	278,000
Total Demand	**1,427,000**	**1,388,000**	**1,362,000**	**1,378,000**	**1,403,000**
Surplus	**2,472,000**	**2,505,000**	**2,528,000**	**2,510,000**	**2,482,000**
SINGLE DRY YEAR					
Supply under Current Programs					
In-Region Supplies and Programs	875,000	877,000	876,000	876,000	874,000
California Aqueduct	647,000	634,000	634,000	634,000	633,000
Colorado River Aqueduct	1,250,000	1,250,000	1,250,000	1,250,000	1,250,000
Total Supply	**2,772,000**	**2,761,000**	**2,760,000**	**2,760,000**	**2,757,000**
Demand					
Total Demands on MWD	1,266,000	1,222,000	1,195,000	1,218,000	1,247,000
Exchange with SDCWA	278,000	278,000	278,000	278,000	278,000
Total Demand	**1,544,000**	**1,500,000**	**1,473,000**	**1,496,000**	**1,525,000**
Surplus	**1,228,000**	**1,261,000**	**1,287,000**	**1,264,000**	**1,232,000**
FIVE CONSECUTIVE DRY YEARS					
Supply under Current Programs					
In-Region Supplies and Programs	194,000	197,000	197,000	197,000	197,000
California Aqueduct	734,800	772,000	794,000	816,000	792,000
Colorado River Aqueduct	1,250,000	1,250,000	1,250,000	1,250,000	1,250,000
Total Supply	**2,178,800**	**2,219,000**	**2,241,000**	**2,263,000**	**2,239,000**
Demand					
Total Demands on MWD	1,314,000	1,292,000	1,259,000	1,261,000	1,286,000
Exchange with SDCWA	278,000	278,000	278,000	278,000	278,000
Total Demand	**1,592,000**	**1,570,000**	**1,537,000**	**1,539,000**	**1,564,000**
Surplus	**586,800**	**649,000**	**704,000**	**724,000**	**675,000**

FIGURE 4: MAIN SAN GABRIEL BAS



3.3 LA HABRA GROUNDWATER BASIN

The La Habra Groundwater Basin, shown in Figure 5, lies within the Coastal Plain of Orange County (Basin 8-1), which is managed by Orange County Water District (OCWD).

The Sustainable Groundwater Management Act (SGMA) was adopted by the State of California in 2014 to help manage groundwater sustainability and limit adverse effects of groundwater extractions. The State Department of Water Resources (DWR) designated the non-adjudicated Basin 8-1 as medium-priority, thus requiring the creation of a Groundwater Sustainability Plan (GSP). OCWD led the effort, along with its member agencies, to comply with SGMA by creating the "Basin 8-1 Alternative" which meets State requirements for a GSP.

As discussed further below, La Habra Groundwater Basin is hydro-geologically distinct from Basin 8-1. In consultation with the City of Brea, OCWD, the State, and other interested parties, the City of La Habra adopted two resolutions in 2015 to:

1) Amend the boundaries of Basin 8-1 and establish the La Habra Basin as a separate basin from Basin 8-1, and

2) Establish the City of La Habra as the Groundwater Management Agency.

OCWD adopted a resolution to support the City's request to DWR for an internal jurisdictional boundary modification in Basin 8-1 that follows the city limits of La Habra and Brea and is outside of the Orange County Water District's jurisdictional boundary. On January 20, 2016, the City of La Habra filed notice to become the exclusive Groundwater Sustainability Agency (GSA) under SGMA for this management area. Appendix 2 includes this notice, as well as a Memorandum of Agreement between the Cities of Brea and La Habra that allows La Habra to be the GSA and Brea to produce a small quantity of water from the basin with no extraction fees.

The La Habra Basin is not adjudicated. Instead, the Cities of Brea and La Habra follow a "safe yield," which is used for the management and future planning of the Basin for sustained beneficial use. The safe yield is the volume of groundwater that can be pumped without depleting the aquifer to a point where it cannot recover through natural recharge over a reasonable period of time. The safe yield for the Basin was estimated to be approximately 4,500 AFY. This safe yield was determined through an average from two separate studies that took into account natural groundwater recharge and natural groundwater discharge. The La Habra Basin continues to be managed sustainably by maintaining and coordinating groundwater production within the estimated safe yield. The City of La Habra is also evaluating its existing monitoring program with the intent to develop a more robust groundwater elevation and water quality monitoring program (UWMP, 2020).

The City of Brea owns and operates one non-potable groundwater well used for irrigation at Brea Creek Golf Course. Local groundwater accounted for 89 to 107 AFY of the City's total water supply in the past five years.

From a structural geological standpoint, the La Habra Basin area is dominated by the northwest trending La Habra Syncline (a U–shaped down–fold) which is bounded on the north by the Puente Hills and on the south by the Coyote Hills. The fold is a naturally occurring trough, or valley, where significant quantities of groundwater have accumulated over the past 150,000 years. The La Habra Basin consists of three water-bearingzones: 1) the Alluvium, 2) the La Habra Formation (including the Coyote Hills Formation), and 3) the San Pedro Formation.

The Alluvium is comprised of young and old alluvium. The deposits are found along the surface stream courses and is composed of unconsolidated silt, clay, sand, and gravel. Alluvium thickness ranges from a few feet to over 100 feet. Generally, the La Habra Formation lies below the Alluvium, consisting of the La Habra and Coyote Hills Formations. However, in the Coyote Hill and Puente Hills, the Alluvium is uplifted and exposed. The La Habra Formation consists of non-marine mudstone, siltstone, and stone, and conglomerate. It ranges in thickness from 300 to nearly 1,200 feet. Water levels of wells in the La Habra Formation have been measured between 100 and 200 feet below ground surface across the La Habra Basin.

Underneath the La Habra Formation lies the San Pedro Formation. As the deepest water bearing unit, the San Pedro Formation is comprised of sand, gravel, sandstone, conglomerate, and shale. The San Pedro Formation ranges between 200 and 400 feet in thickness and produces the best quality groundwater of all.

FIGURE 5: MAP OF LA HABRA GROUNDWATER BASIN WITHIN BASIN 8-1 (SOURCE: BASIN 8-1 ALTERNATIVE)

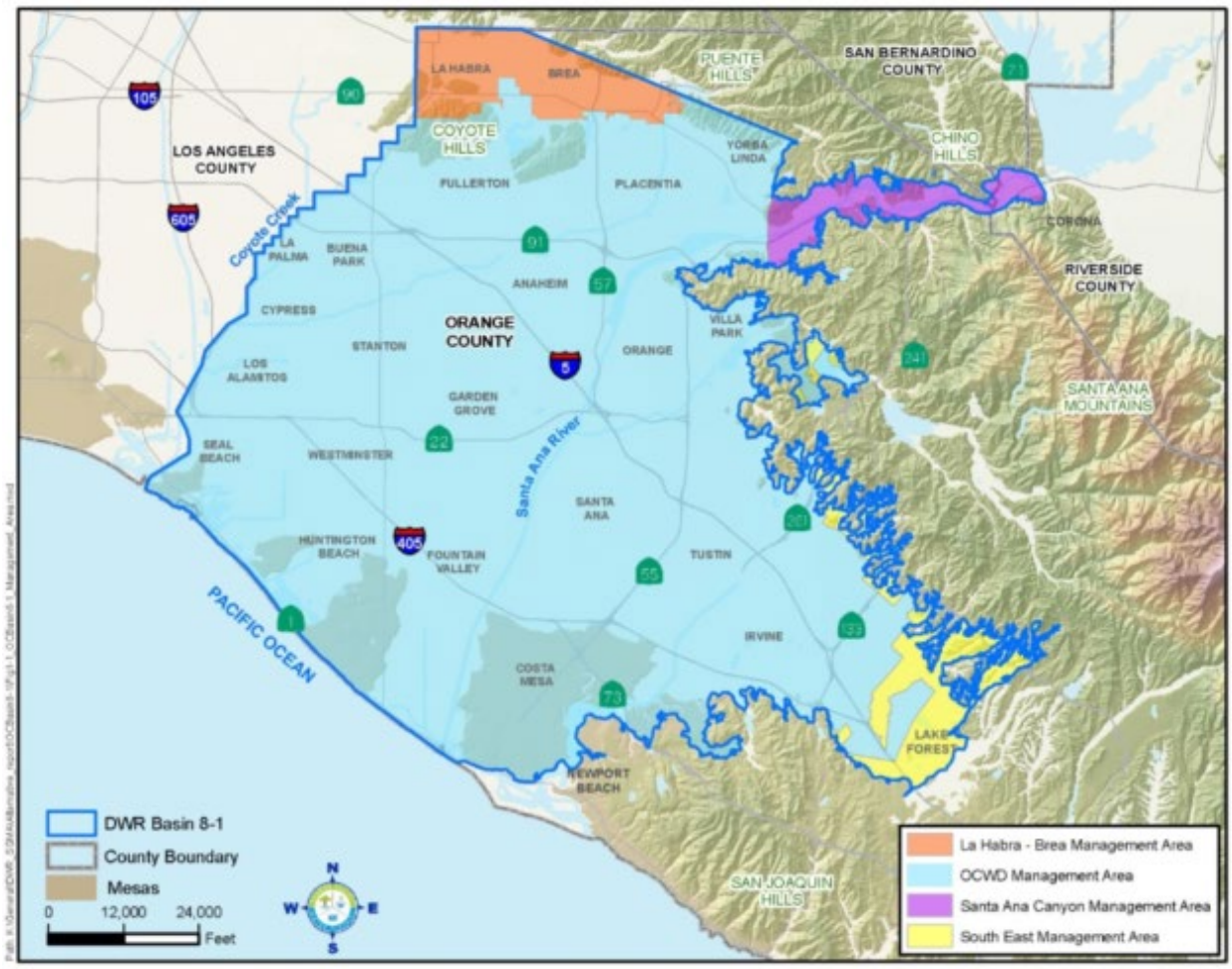
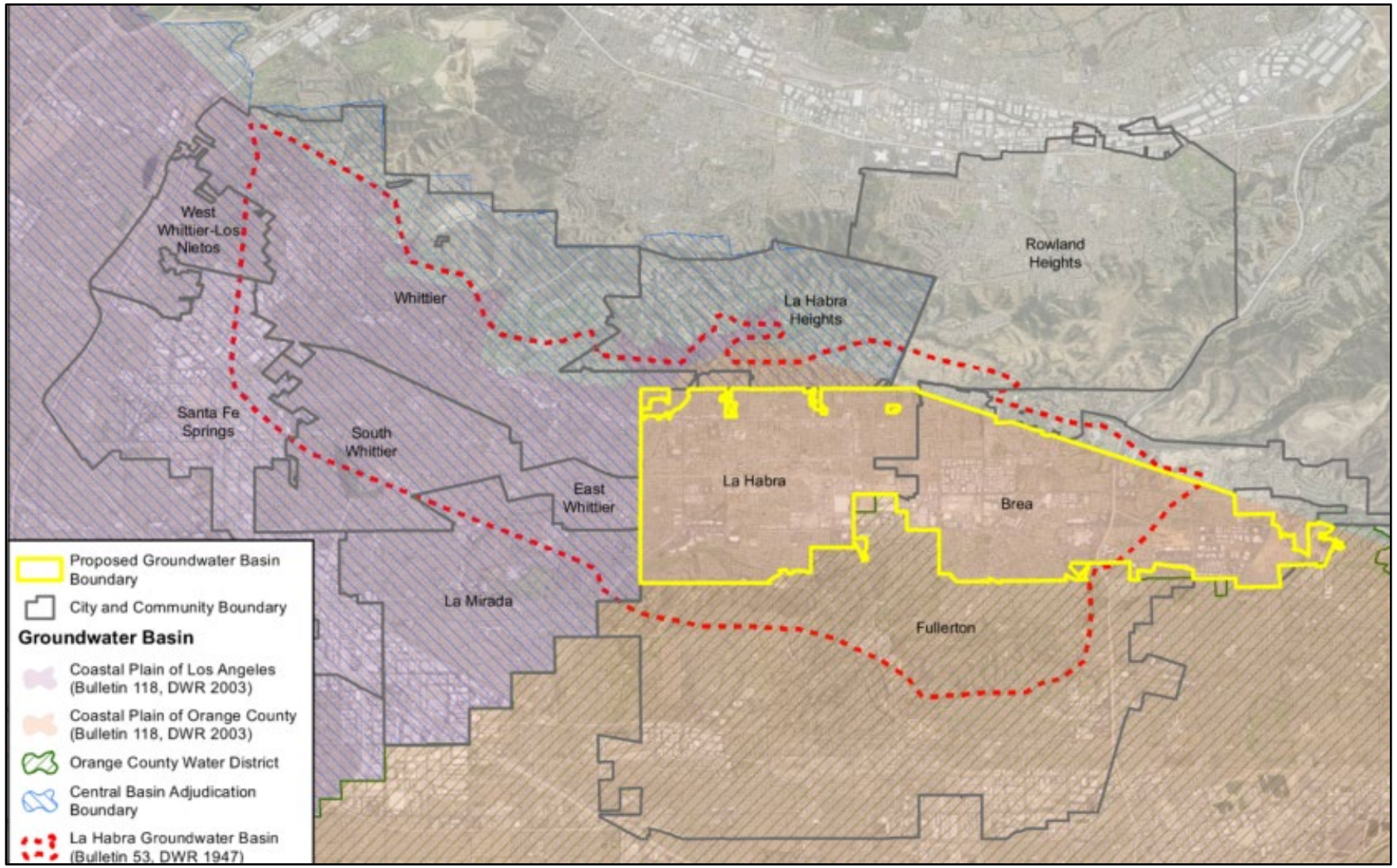


FIGURE 6: DETAIL OF NEW AND ORIGINAL LA HABRA GROUNDWATER BASIN BOUNDARIES (SOURCE: CITY OF LA HABRA NOTICE TO BECOME A GSA)



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4 WATER SUPPLY SECURITY

The City depends on a combination of imported and local supplies to meet its water demands and has taken numerous steps to ensure it has adequate supplies. Various factors impact water supply and supply reliability including climate, environmental conditions, and water quality. This section provides a description of MWD's, CDWC's, and the City of Brea's efforts in securing adequate water supply, as well as the reliability of regional and City normal, single dry year, and multiple dry year water supplies. MWD's, MWDOC's and the City's 2020 UWMPs conclude that they can meet, full-service demands of their member agencies through 2045 during normal years, a single-dry year, and multiple-dry years. Consequently, the City is projected to meet full-service demands through 2045 for the same scenarios.

MWD's 2020 Integrated Water Resources Plan (IRP) update describes the core water resources that will be used to meet full-service demands at the retail level under all foreseeable hydrologic conditions from 2025 through 2045. The foundation of MWD's resource strategy for achieving regional water supply reliability has been to develop and implement water resources programs and activities through its IRP preferred resource mix. This preferred resource mix includes conservation, local resources such as water recycling and groundwater recovery, Colorado River supplies and transfers, SWP supplies and transfers, in-region surface reservoir storage, in-region groundwater storage, out-of-region banking, treatment, conveyance, and infrastructure improvements.

MWD's 2020 UWMP was developed as part of the 2020 IRP planning process. This UWMP finds that MWD can meet full-service demands of its member agencies from 2020 through 2045 during normal years, single dry year, and multiple dry years. The IRP represents MWD's comprehensive blueprint for long-term water reliability, including key supply development and water use efficiency goals.

The reliability and operational issues related to MWD's various sources of supply are discussed by major source below.

4.1 STATE WATER PROJECT

The State Water Project (SWP) consists of a network of pump stations, reservoirs, aqueducts, tunnels, and power plants operated by DWR and is an integral part of the effort to ensure that business and industry, urban and suburban residents, and farmers throughout much of California have sufficient water. The SWP is the largest state-built, multipurpose, user-financed water project in the United States.

Nearly two-thirds of residents in California receive at least part of their water from the SWP with approximately 70 percent of SWP's contracted water supply going to urban users and 30 percent to agricultural users. The primary purpose of the SWP is to divert

and store water during wet periods in northern and central California and distribute it to areas of need in northern California, the San Francisco Bay area, the San Joaquin Valley, the Central Coast, and Southern California.

The availability of water supplies from the SWP can be highly variable. A wet water year may be followed by a dry or critically dry year and fisheries issues can restrict the operations of the export pumps even when water supplies are available.

The Sacramento-San Joaquin River Delta (Delta) is key to the SWP's ability to deliver water to its agricultural and urban contractors. However, the Delta faces many challenges concerning its long-term sustainability, including:

- Climate change poses a threat of increased variability in floods and droughts.
- Sea level rise complicates efforts in managing salinity levels and preserving water quality in the Delta to ensure a suitable water supply for urban and agricultural use.
- Continued subsidence of Delta islands, many of which are below sea level, and the related threat of a catastrophic levee failure as the water pressure increases, or because of a major seismic event.
- Ongoing regulatory restrictions, such as those imposed by federal biological opinions (BiOps) on the effects of SWP and the federal Central Valley Project (CVP) operations on certain marine life.

In response, the California State Water Resources Control Board (SWRCB) has set water quality objectives that must be met by the SWP including minimum Delta outflows, limits on SWP and CVP Delta exports, and maximum allowable salinity level.

MWD manages fluctuations in supplies delivered through the California Aqueduct by developing flexible CVP/SWP storage and transfer programs. The goal of the storage/transfer programs is to develop additional dry-year supplies that can be conveyed through the available Harvey O. Banks pumping plant capacity to maximize deliveries through the California Aqueduct during dry hydrologic conditions and regulatory restrictions.

"Table A" water is the maximum entitlement of SWP water for each water contracting agency. Currently, the combined maximum Table A amount is 4.17 million acre feet per year (MAFY). Of this amount, 4.13 MAFY is the maximum Table A water available for delivery from the Delta pumps as stated in the State Water Contract. However, deliveries commonly are less than 50 percent of Table A amounts.

SWP contractors may receive Article 21 water on a short-term basis in addition to Table A water if requested. Article 21 of SWP contracts allows contractors to receive

additional water deliveries only under specific conditions, generally during wet months of the year (December through March). Because an SWP contractor must have an immediate use for Article 21 supply or a place to store it outside of the SWP, there are few contractors like MWD that can access such supplies.

Carryover water is SWP water allocated to an SWP contractor and approved for delivery to the contractor each year but not used by the end of the year. The unused water is stored in the SWP's share of San Luis Reservoir, when space is available, for the contractor to use in the following year.

Turnback pool water is Table A water that has been allocated to SWP contractors that has exceeded their demands. This water can then be purchased by another contractor depending on its availability.

SWP Delta exports are the water supplies that are transferred directly to SWP contractors or to San Luis Reservoir storage south of the Delta via the Harvey O. Banks pumping plant. Estimated average annual Delta exports and SWP Table A water deliveries have generally decreased since 2005, when Delta export regulations affecting SWP pumping operations began to become more restrictive due to the BiOps.

Brea's 2020 UWMP provides details on the factors that affect the ability to estimate existing and future water delivery reliability. In summary, they include water availability at the source, water rights with priority of the SWP, climate change, regulatory restrictions on SWP Delta exports, ongoing environmental and policy planning efforts, and Delta levee failure.

4.2 COLORADO RIVER SUPPLIES

The Colorado River was MWD's original source of water after MWD's establishment in 1928. The Colorado River Aqueduct (CRA), which is owned and operated by MWD, transports water from the Colorado River to its terminus Lake Mathews, in Riverside County. The actual amount of water per year that may be conveyed through the CRA to MWD's member agencies is subject to the availability of Colorado River water.

Approximately 40 million people rely on the Colorado River and its tributaries for water with 5.5 million acres of land using Colorado River water for irrigation. The CRA includes supplies from the implementation of the Quantification Settlement Agreement and its related agreements to transfer water from agricultural agencies to urban uses. The 2003 Quantification Settlement Agreement enabled California to implement major Colorado River water conservation and transfer programs to stabilize water supplies and reduce the state's demand on the river to its 4.4 MAF entitlement. Colorado River transactions are potentially available to supply additional water up to the CRA capacity of 1.25 MAF on an as-needed basis.

Water from the Colorado River or its tributaries is available to users in California,

Arizona, Colorado, Nevada, New Mexico, Utah, Wyoming, and Mexico. California is apportioned the use of 4.4 MAF of water from the Colorado River each year plus one-half of any surplus that may be available for use collectively in Arizona, California, and Nevada. In addition, California has historically been allowed to use Colorado River water apportioned to, but not used by, Arizona or Nevada. MWD has a basic entitlement of 550,000 AFY of Colorado River water, plus surplus water up to an additional 662,000 AFY when the following conditions exist:

- Water is unused by the California holders of priorities 1 through 3
- Water is saved by the Palo Verde land management, crop rotation, and water supply program
- When the U.S. Secretary of the Interior makes available either one or both of the following:
    - Surplus water
    - Colorado River water that is apportioned to but unused by Arizona and/or Nevada.

Over the years, MWD has helped fund and implement various programs to improve Colorado River supply reliability and help resolve the imbalance between supply and demand. Implementation of such programs has contributed to achievements like achieving a record low diversion of the Colorado River in 2019, a level not seen since the 1950s. Colorado River water management programs include:

- Imperial Irrigation District / MWD Conservation Program – Under agreements executed in 1988 and 1989, this program allows MWD to fund water efficiency improvements within Imperial Irrigation District's service area in return for the right to divert the water conserved by those investments. An average of 105,000 AFY of water has been conserved since the program's implementation.
- Palo Verde Land Management, Crop Rotation, and Water Supply Program – Authorized in 2004, this 35-year program allows MWD to pay participating farmers to reduce their water use, and for MWD to receive the saved water. Over the life of the program, an average of 84,500 AFY has been saved and made available to MWD.
- Bard Seasonal Fallowing Program – Authorized in 2019, this program allows MWD to pay participating farmers in Bard to reduce their water use between the late spring and summer months of selected years, which provides up to 6,000 AF of water to be available to MWD in those years.
- Management of MWD-Owned Land in Palo Verde – Since 2001, MWD has acquired approximately 21,000 acres of irrigable farmland that are leased to growers, with incentives to grow low water-using crops and experiment with low water-consumption practices.
- Southern Nevada Water Authority (SNWA) and MWD Storage and Interstate

Release Agreement – Entered in 2004, this agreement allows SNWA to store its unused, conserved water with MWD, in exchange for MWD to receive additional Colorado River water supply. MWD has relied on the additional water during dry years, especially during the 2011-2016 California drought, and SNWA is not expected to call upon MWD to return water until after 2026.

- Lower Colorado Water Supply Projects – Authorized in 1980s, this project provides up to 10,000 AFY of water to certain entities that do not have or have insufficient rights to use Colorado River water. A contract executed in 2007 allowed MWD to receive project water left unused by the project contractors along the River – nearly 10,000 AF was received by MWD in 2019 and is estimated for 2020.
- Exchange Programs – MWD is involved in separate exchange programs with the United States Bureau of Reclamation, which takes place at the Colorado River Intake and with San Diego County Water Authority (SDCWA), which exchanges conserved Colorado River water.
- Lake Mead Storage Program – Executed in 2006, this program allows MWD to leave excessively conserved water in Lake Mead, for exclusive use by MWD in later years.
- Quagga Mussel Control Program – Developed in 2007, this program introduced surveillance activities and control measures to combat quagga mussels, an invasive species that impact the Colorado River's water quality.
- Lower Basin Drought Contingency Plan – Signed in 2019, this agreement incentivizes storage in Lake Mead through 2026 and overall, it increases MWD's flexibility to fill the CRA as needed.

After years of reduced flows, the river's future is uncertain. MWD is working with Colorado River water users across the Basin to try and develop a consensus agreement for post-2026 operations that is supported by all seven Colorado River Basin states.[1] In these negotiations, MWD recognizes that its constituents and all Colorado River users will need to reduce water use. But MWD is also working to develop flexibility and improved water reliability. Options include:

- Equitable Shortage Sharing: Equitable sharing of shortages by all states and Mexico and all water sectors – agricultural, urban and tribes, with sufficient flexibility so that reductions can be made when they have the least impacts.
- Local Dry-Year Reliability: Flexibility for MWD to store Colorado River water in Lake Mead when supplies are available and draw on that stored water when Northern California supplies are low, both to produce agreed-upon reductions and provide reliable water to Southern California communities.
- Interstate Augmentation Opportunities: Provide for collaborative development and funding of new supplies, like Pure Water Southern California, across

[1] Metropolitan Water District of Southern California, Colorado River: Working Toward A New Era of Sustainability, Accessed 11/13/2025.

states, allowing for multi-state benefits through water exchanges and shared financing.

- Protection of Power Generation: Ensure measures are implemented to protect power generation at Lake Mead's Hoover Dam, a key source of power for the Colorado River Aqueduct.
- Planning Certainty: Provide predictability on how much supply water users can plan for from the Colorado River for the term of the post-2026 guidelines. Predictability, even if it requires reductions, will allow decision-making on investments.

4.3 STORAGE

A key component of MWD's water reliability strategy is its extensive groundwater and surface water storage capacity. Storage is a major component of MWD's dry year resource management strategy. Due to the pattern of generally drier hydrology, the groundwater basins and local reservoirs can drop to low operating levels and remain below healthy storage levels, as they did in 2020.

MWD stores water in both DWR and MWD surface water reservoirs. MWD's surface water reservoirs are Lake Mathews, Lake Skinner, and Diamond Valley Lake (DVL), which have a combined storage capacity of over 1 MAF. Approximately 650,000 AF are stored for seasonal, regulatory, and drought use, while approximately 370,000 AF are stored for emergency use.

MWD also has contractual rights to DWR surface Reservoirs, such as 65 thousand acre-feet (TAF) of flexible storage at Lake Perris (East Branch terminal reservoir) and 154 TAF of flexible storage at Castaic Lake (West Branch terminal reservoir) that provides MWD with additional options for managing SWP deliveries to maximize the yield from the project. This storage can provide MWD with up to 44 TAF of additional supply over multiple dry years, or up to 219 TAF to Southern California in a single dry year.

Additional detail on storage projects and water supply security is available in the Brea 2020 UWMP.

5 CONCLUSION – WATER RELIABILITY

Table 14 presents water demand for both the BCSP and the Focused GPU. The City's total water demand in an Average water year is 8,995 acre feet per year. Including water demand from the Brea Core Specific Plan, total demand is projected to be 9,079 AFY. In dry years, annual water demand is projected to increase 6%, to 9,624 AFY. For the Brea Focused General Plan Update, which includes the Brea Core Specific Area, total demand is projected to be 10,033 AFY in an Average Year and 10,636 AFY in dry years.

The 2020 UWMP assumed a maximum supply of 9,000 AFY from the Main San Gabriel Basin and 115 AFY from the La Habra Basin. All remaining water was assumed to come from MWD, based on MWD's 2020 UWMP stating availability to serve additional water demands. Table 15 presents sources of water supply for full build-out of the BCSP and the Focused GPU.

There is no specific schedule for the build-out, so it is assumed that it occurs immediately.

TABLE 14: WATER DEMAND AT FULL BUILD-OUT

(AFY)	Average Year	Single-Dry and Multiple Dry Years
Brea Core Specific Plan		
Average Demand	8,995	9,535
Brea Core Specific Plan (BCSP) – New Demand	84	89
Total Demand with Brea Core Specific Plan	**9,079**	**9,624**
Brea Focused General Plan Update		
Average Demand	8,995	9,535
Brea Focused General Plan Update (includes BCSP) – New Demand	1,038	1,101
Total Demand with Brea Focused General Plan Update	**10,033**	**10,636**

TABLE 15: WATER SUPPLY AT FULL BUILD-OUT

(AFY)	Average Year	Single and Multiple Dry Years
Brea Core Specific Plan		
Main San Gabriel Basin (CDWC)	8,961	9,000
La Habra Basin	115	89
MWD	0	535
Total Water Supply for Brea Core Specific Plan	**9,079**	**9,624**
Brea Focused General Plan Update		
Main San Gabriel Basin (CDWC)	9,000	9,000
La Habra Basin	115	115
MWD	918	1,521
Total Water Supply for Brea Focused General Plan Update	**10,033**	**10,636**

The demand figure for the Brea Focused General Plan Update is utilized for the supply reliability table below. Table 16 demonstrates that there is sufficient supply in normal, single-dry and multiple dry years within the 20-year planning horizon. Therefore, projected water supply is deemed to meet projected water demand.

TABLE 16: DEMAND AND SUPPLY IN NORMAL, SINGLE DRY, AND MULTIPLE DRY YEARS

	2025	2030	2035	2040	2045
Normal Year					
Supply	8,995	10,033	10,033	10,033	10,033
Demand totals	8,995	10,033	10,033	10,033	10,033
Difference	0	0	0	0	0
Single Dry Year					
Supply totals	n/a	10,636	10,636	10,636	10,636
Demand totals	n/a	10,636	10,636	10,636	10,636
Difference	0	0	0	0	0
Second Dry Year					
Supply totals	n/a	10,636	10,636	10,636	10,636
Demand totals	n/a	10,636	10,636	10,636	10,636
Difference	0	0	0	0	0
Third Dry Year					
Supply totals	n/a	10,636	10,636	10,636	10,636
Demand totals	n/a	10,636	10,636	10,636	10,636
Difference	0	0	0	0	0
Fourth Dry Year					
Supply totals	n/a	10,636	10,636	10,636	10,636
Demand totals	n/a	10,636	10,636	10,636	10,636
Difference	0	0	0	0	0

Appendix 1: Main San Gabriel Basin, 2014 Amended Adjudication

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SUPERIOR COURT OF THE STATE OF CALIFORNIA

FOR THE COUNTY OF LOS ANGELES

Upper San Gabriel Valley Municipal Water District, Plaintiff, vs. City of Alhambra, et al, Defendants	Case No.: 924128 **AMENDED JUDGMENT** (And Exhibits Thereto)

HONORABLE MAUREEN DUFFY-LEWIS

Assigned Judge Presiding

DEPARTMENT 38

June 21, 2012

(This version includes prior Amendments and updated Exhibits through June 21, 2012.)

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EXHIBITS

"A" – Map entitled, "San Gabriel River Watershed Tributary to Whittier Narrows"

"B" – Boundaries of Relevant Watershed

"C" – Table Showing Base Annual Diversion Rights of Certain Diverters

"D" – Table Showing Prescriptive Pumping Rights and Pumper's Share of Each Pumper

"E" – Table Showing Production Rights of Each Integrated Producer

"F" – Table Showing Special Category Rights

"G" – Table Showing Non-consumptive Users

"H" – Watermaster Operating Criteria

"J" – Puente Narrows Agreement

"K" – Overlying Rights

(Exhibit "K" Includes - Nature of Overlying Right, Description of Overlying Lands To Which Overlying Rights Are Appurtenant, Producers Entitled To Exercise Overlying Rights and Their Respective Consumptive Use Portions, and Map of Overlying Lands.)

"L" – List of Producers and Other Parties and Their Designees (June 2012) (New)

"M" – Watermaster Members, Officers, and Staff, Including Calendar Year 2012 (New)

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SUPERIOR COURT OF CALIFORNIA, COUNTY OF LOS ANGELES

Upper San Gabriel Valley Municipal Water District, Plaintiff, vs. City of Alhambra, et al, Defendant	Case No.: 924128 **AMENDED JUDGMENT** Hearing: June 21, 2012 Department 38, 9:30 A.M.

The Petition of the MAIN SAN GABRIEL BASIN WATERMASTER for this AMENDED JUDGMENT herein, came on regularly for hearing in this Court before the **HONORABLE MAUREEN DUFFY-LEWIS**, ASSIGNED JUDGE PRESIDING, on June 21, 2012; Frederic A. Fudacz appeared as attorney for Watermaster - Petitioner; and good cause appearing, the following **ORDER** and **AMENDED JUDGMENT** are, hereby, made:

I. INTRODUCTION

1. Pleadings, Parties, and Jurisdiction. The complaint herein was filed on January 2, 1968, seeking an adjudication of water rights. By amendment of said complaint and dismissals of certain parties, said adjudication was limited to the Main San Gabriel Basin and its Relevant Watershed. Substantially all defendants and the cross-defendant have appeared herein, certain defaults have been entered, and other defendants dismissed. By the pleadings herein and by

Order of this Court, the issues have been made those of a full inter se adjudication of water rights as between each and all of the parties. This Court has jurisdiction of the subject matter of this action and of the parties herein.

2. Stipulation for Entry of Judgment. A substantial majority of the parties, by number and by quantity of rights herein Adjudicated, Stipulated for entry of a Judgment in substantially the form of the original Judgment herein.

3. Lis Pendens. (New) A Lis Pendens was recorded August 20, 1970, as Document 2650, in Official Records of Los Angeles County, California, in Book M 3554, Page 866.

4. Findings and Conclusions. (Prior Judgment Section 3) Trial was had before the Court, sitting without a jury, John Shea, Judge Presiding, commencing on October 30, 1972, and Findings of Fact and Conclusions of Law have been entered herein.

5. Judgment. (New) Judgment (and Exhibits Thereto), Findings of Fact and Conclusions of Law (and Exhibits Thereto), Order Appointing Watermaster, and Initial Watermaster Order were signed and filed December 29, 1972, and Judgment was entered January 4, 1973, in Book 6791, Page 197.

6. Intervention After Judgment. (New) Certain defendants have, pursuant to the Judgment herein and the Court's continuing jurisdiction, intervened and appeared herein after entry of Judgment.

7. Amendments of Judgment. (New) The original Judgment herein was previously amended on March 29 1979, by: (1) adding definition (r [1]) thereto, (2) amending definition (bb) therein, (3) adding Exhibit "K" thereto, (4) adding Sections 14.5 and 16.5 thereto, and (5) amending Sections 37(b), 37(c), 37(d), and Section 47 therein; it was again amended on December 21, 1979, by amending Section 38(c) thereof; again amended on February 21, 1980, by amending Section 24 thereof; again amended on September 12, 1980, by amending Sections 35(a), 37(a), and 38(a); again amended on December 22, 1987, by adding Section 37(e) thereto; amended again on July 22, 1988 by amending Section 37(e) thereof and Ordering an Amended Judgment herein; again amended on January 29, 1991, by amending Sections 10(j), 40, and by adding Sections 40(a), 40(b), 40(c), 40(d), 40(e) and 40(f); again amended on April 2, 1991, by

amending Sections 10(ff), 10(jj), and 34(h); again amended on February 24, 1992, by amending Section 40(b); again amending Appendices in 2000; and again on June 21, 2012 by amending Sections 10(ff), 26, 29(d), 34(b), 34(c), 34(g), 34(h), 34(j), 36, 42, 44, 45, 46(a), 47, 50, 54, Exhibit H Sections 2, 3(d), 4; adding Sections 34(p), 34(q), 34(r); and deleting Section 53 entirely.

8. Transfers. (New) Since the entry of Judgment herein there have been numerous transfers of Adjudicated water rights. To the date hereof, said transfers are reflected in Exhibits "C", "D", and "E".

9. Producers and Their Designees. (New) The current status of Producers and their Designees is shown on Exhibit "L".

10. Definitions. (Prior Judgment Section 4) As used in this Judgment, the following terms shall have the meanings herein set forth:

(a) Base Annual Diversion Right – The average annual quantity of water which a Diverter is herein found to have the right to Divert for Direct Use.

(b) Direct Use – Beneficial use of water other than for spreading or Ground Water recharge.

(c) Divert or Diverting – To take waters of any surface stream within the Relevant Watershed.

(d) Diverter – Any party who Diverts.

(e) Elevation – Feet above mean sea level.

(f) Fiscal Year – A period July 1 through June 30, following.

g) Ground Water – Water beneath the surface of the ground and within the zone of saturation.

(h) Ground Water Basin – An interconnected permeable geologic formation capable of storing a substantial Ground Water supply.

(i) Integrated Producer – Any party that is both a Pumper and a Diverter, and has elected to have its rights adjudicated under the optional formula provided in Section 18 of this Judgment.

(j) In-Lieu Water Cost – The differential between a particular Producer's cost of Watermaster directed produced, treated, blended, substituted, or Supplemental Water delivered or substituted to, for, or taken by, such Producer in-lieu of his cost of otherwise normally Producing a like amount of Ground Water from the Basin. (Amended 1/29/91)

(k) Key Well – Baldwin Park Key Well, being elsewhere designated as State Well No. 1S/10W-7R2, or Los Angeles County Flood Control District Well No. 3030-F. Said well has a ground surface Elevation of 386.7.

(l) Long Beach Case – Los Angeles Superior Court Civil Action No. 722647, entitled, "Long Beach, et al., v. San Gabriel Valley Water Company, et al."

(m) Main San Gabriel Basin or Basin – The Ground Water Basin underlying the area shown as such on Exhibit "A".

(n) Make-Up Obligation – The total cost of meeting the obligation of the Basin to the area at or below Whittier Narrows, pursuant to the Judgment in the Long Beach Case.

(o) Minimal Producer – Any party whose Production in any Fiscal Year does not exceed five (5) acre-feet. (Prior to June 21, 2012)

(p) Natural Safe Yield – The quantity of natural water supply which can be extracted annually from the Basin under conditions of long term average annual supply, net of the requirement to meet downstream rights as determined in the Long Beach Case (exclusive of Pumped export), and under cultural conditions as of a particular year.

(q) Operating Safe Yield – The quantity of water which the Watermaster determines hereunder may be Pumped from the Basin in a particular Fiscal Year, free of the Replacement Water Assessment under the Physical Solution herein.

(r) Overdraft – A condition wherein the total annual Production from the Basin exceeds the Natural Safe Yield thereof.

(s) Overlying Rights – (Prior Judgment Section 4(r)[1]) The right to Produce water from the Basin for use on Overlying Lands, which rights are exercisable only on specifically defined Overlying Lands and which cannot be separately conveyed or

transferred apart therefrom.

(t) Physical Solution – (Prior Judgment Section 4(s)) The Court decreed method of managing the waters of the Basin so as to achieve the maximum utilization of the Basin and its water supply, consistent with the rights herein declared.

(u) Prescriptive Pumping Right – (Prior Judgment Section 4(t)) The highest continuous extractions of water by a Pumper from the Basin for beneficial use in any five (5) consecutive years after commencement of Overdraft and prior to filing of this action, as to which there has been no cessation of use by that Pumper during any subsequent period of five (5) consecutive years, prior to the said filing of this action.

(v) Produce or Producing – (Prior Judgment Section 4(u)) To Pump or Divert Water.

(w) Producer – (Prior Judgment Section 4(v)) A party who Produces water.

(x) Production – (Prior Judgment Section 4(w)) The annual quantity of water Produced, stated in acre feet.

(y) Pump or Pumping – (Prior Judgment Section 4(x)) To extract Ground Water from the Basin by Pumping or any other method.

(z) Pumper – (Prior Judgment Section 4(y)) Any party who Pumps water.

(aa) Pumper's Share – (Prior Judgment Section 4(z)) A Pumper's right to a percentage of the entire Natural Safe Yield, Operating Safe Yield and appurtenant Ground Water storage.

(bb) Relevant Watershed – (Prior Judgment Section 4(aa)) That portion of the San Gabriel River watershed tributary to Whittier Narrows which is shown as such on Exhibit "A", and the exterior boundaries of which are described in Exhibit "B".

(cc) Replacement Water – (Prior Judgment Section 4(bb)) Water purchased by Watermaster to replace: (1) Production in excess of a Pumper's Share of Operating Safe Yield; (2) The consumptive use portion resulting from the exercise of an Overlying Right; and (3) Production in excess of a Diverter's right to Divert for Direct Use.

(dd) Responsible Agency – (Prior Judgment Section 4(cc)) The municipal water

district which is the normal and appropriate source from whom Watermaster shall purchase Supplemental Water for replacement purposes under the Physical Solution, being one of the following:

(1) Upper District – Upper San Gabriel Valley Municipal Water District, a member public agency of the Metropolitan Water District of Southern California (MWD).

(2) San Gabriel District – San Gabriel Valley Municipal Water District, which has a direct contract with the State of California for State Project Water.

(3) Three Valleys District – Three Valleys Municipal Water District, formerly, "Pomona Valley Municipal Water District", a member public agency of MWD.

(ee) Stored Water – (Prior Judgment Section 4(dd)) Supplemental Water stored in the Basin pursuant to a contract with Watermaster as authorized by Section 34(n).

(ff) Supplemental Water – (Prior Judgment Section 4(ee)) Nontributary water imported through a Responsible Agency and reclaimed water or water obtained from other available sources when water is not available in a timely fashion from a Responsible Agency. (Amended 6/21/12)

(gg) Transporting Parties – (Prior Judgment Section 4(ff)) Any party presently transporting water (i.e., during the 12 months immediately preceding the making of the findings herein) from the Relevant Watershed or Basin to an area outside thereof, and any party presently or hereafter having an interest in lands or having a service area outside the Basin or Relevant Watershed contiguous to lands in which it has an interest or a service area within the Basin or Relevant Watershed. Division by a road, highway, or easement shall not interrupt contiguity. Said term shall also include the City of Sierra Madre, or any party supplying water thereto, so long as the corporate limits of said City are included within one of the Responsible Agencies and if said City, in order to supply water to its corporate area from the Basin, becomes a party to this action bound by this Judgment.

(hh) Water Level – (Prior Judgment Section 4(gg)) The measured Elevation of water in the Key Well, corrected for any temporary effects of mounding caused by replenishment or local depressions caused by Pumping.

(ii) Year – (Prior Judgment Section 4(hh)) A calendar year, unless the context clearly indicates a contrary meaning.

(jj) Reclaimed Water – Water which, as a result of treatment of waste, is suitable for a direct beneficial use or a controlled use that would not otherwise occur. (Amended 4/2/91)

11. Exhibits. (Prior Judgment Section 5) The following exhibits are attached to this Judgment and incorporated herein by this reference:

Exhibit "A" – Map entitled, "San Gabriel River Watershed Tributary to Whittier Narrows", showing the boundaries and relevant geologic and hydrologic features in the portion of the watershed of the San Gabriel River lying upstream from Whittier Narrows.

Exhibit "B" – Boundaries of Relevant Watershed.

Exhibit "C" – Table Showing Base Annual Diversion Rights of Certain Diverters.

Exhibit "D" – Table Showing Prescriptive Pumping Rights and Pumper's Share of Each Pumper.

Exhibit "E" – Table Showing Production Rights of Each Integrated Producer.

Exhibit "F" – Table Showing Special Category Rights.

Exhibit "G" – Table Showing Non-consumptive Users.

Exhibit "H" – Watermaster Operating Criteria.

Exhibit "J" – Puente Narrows Agreement.

Exhibit "K" – Overlying Rights, Nature of Overlying Right, Description of Overlying Lands to which Overlying Rights are Appurtenant, Producers Entitled to Exercise Overlying Rights and their Respective Consumptive Use Portions, and Map of Overlying Lands.

Exhibit "L" – (New) List of Producers And Their Designees, as of June 2012.

Exhibit "M" – (New) Watermaster Members, Officers and Staff, Including

Calendar Year 2012.

II. DECREE

NOW, THEREFORE, IT IS HEREBY DECLARED, ORDERED, ADJUDGED AND DECREED:

A. DECLARATION OF HYDROLOGIC CONDITIONS

12. Basin as Common Source of Supply. (Prior Judgment Section 6) The area shown on Exhibit "A" as Main San Gabriel Basin overlies a Ground Water basin. The Relevant Watershed is the watershed area within which rights are herein adjudicated. The waters of the Basin and Relevant Watershed constitute a common source of natural water supply to the parties herein.

13. Determination of Natural Safe Yield. (Prior Judgment Section 7) The Natural Safe Yield of the Main San Gabriel Basin is found and declared to be one hundred fifty-two thousand seven-hundred (152,700) acre-feet under Calendar Year 1967 cultural conditions.

14. Existence of Overdraft. (Prior Judgment Section 8) In each and every Calendar year commencing with 1953, the Basin has been and is in Overdraft.

B. DECLARATION OF RIGHTS

15. Prescription. (Prior Judgment Section 9) The use of water by each and all parties and their predecessors in interest has an open, notorious, hostile, adverse, under claim of right, and with notice of said overdraft continuously from January 1, 1953 to January 4, 1973. The rights of each party herein declared are prescriptive in nature. The following aggregate consequences of said prescription within the Basin and Relevant Watershed are hereby declared:

(a) Prior Prescription. Diversions within the Relevant Watershed have created rights for direct consumptive use within the Basin, as declared and determined in Sections 16 and 18 hereof, which are of equal priority inter se, but which are prior and paramount to Pumping Rights in the Basin.

(b) Mutual Prescription. The aggregate Prescriptive Pumping Rights of the parties who are Pumpers now exceed, and for many years prior to filing of this action, have exceeded, the Natural Safe Yield of the Basin. By reason of said condition, all

rights of said Pumpers are declared to be mutually prescriptive and of equal priority, inter se.

(c) Common Ownership of Safe Yield and Incidents Thereto. By reason of said Overdraft and mutual Prescription, the entire Natural Safe Yield of the Basin, the Operating Safe Yield thereof and the appurtenant rights to Ground Water storage capacity of the Basin are owned by Pumpers in undivided Pumpers' Shares as hereinafter individually declared, subject to the control of Watermaster, pursuant to the Physical Solution herein decreed. Nothing herein shall be deemed in derogation of the rights to spread water pursuant to rights set forth in Exhibit "G".

16. Surface Rights. (Prior Judgment Section 10) Certain of the aforesaid prior and paramount prescriptive water rights of Diverters to Divert for Direct Use stream flow within the Relevant Watershed are hereby declared and found in terms of Base Annual Diversion Right as set forth in Exhibit "C". Each Diverter shown on Exhibit "C" shall be entitled to Divert for Direct Use up to two hundred percent (200%) of said Base Annual Diversion Right in any one (1) Fiscal Year; provided that the aggregate quantities of water Diverted in any consecutive ten (10) Fiscal Year period shall not exceed ten (10) times such Diverter's Base Annual Diversion Right.

17. Ground Water Rights. (Prior Judgment Section 11) The Prescriptive Pumping Right of each Pumper, who is not an Integrated Producer, and his Pumper's Share are declared as set forth in Exhibit "D".

18. Optional Integrated Production Rights. (Prior Judgment Section 12) Those parties listed on Exhibit "E" have elected to be treated as Integrated Producers. Integrated Production Rights have two (2) historical components:

(1) a fixed component based upon historic Diversions for Direct Use; and

(2) a mutually prescriptive Pumper's Share component based upon Pumping during the period 1953 through 1967.

Assessment and other Watermaster regulation of the rights of such parties shall relate to and be based upon each such component. So far as future exercise of such rights is concerned,

however, the gross quantity of the aggregate right in any Fiscal Year may be exercised, in the sole discretion of such party, by either Diversion or Pumping or any combination or apportionment thereof; provided, that for Assessment purposes the first water Produced in any Fiscal Year (other than "Carry-over", under Section 49 hereof) shall be deemed an exercise of the Diversion Component, and any Production over said quantity shall be deemed Pumped water, regardless of the actual method of Production.

19. Special Category Rights. (Prior Judgment Section 13) The parties listed on Exhibit "F" have water rights in the Relevant Watershed which are not ordinary Production rights. The nature of each such right is as described in Exhibit "F".

20. Non-consumptive Practices. (Prior Judgment Section 14) Certain Producers have engaged in Water Diversion and spreading practices which have caused such Diversions to have a non-consumptive or beneficial impact upon the aggregate water supply available in the Basin. Said parties, and a statement of the nature of their rights, uses and practices, are set forth in Exhibit "G". The Physical Solution decreed herein, and particularly its provisions for Assessments, shall not apply to such non-consumptive uses. Watermaster may require reports on the operations of said parties.

21. Overlying Rights. (Prior Judgment Section 14.5) Producers listed in Exhibit "K" hereto were not parties herein at the time of the original entry of Judgment herein. They have exercised in good faith Overlying Rights to Produce water from the Basin during the periods subsequent to the entry of Judgment herein and have by self-help initiated or maintained appurtenant Overlying Rights. Such rights are exercisable without quantitative limit only on specifically described Overlying Land and cannot be separately conveyed or transferred apart therefrom. As to such rights and their exercise, the owners thereof shall become parties to this action and be subject to Watermaster Replacement Water assessments under Section 45(b) hereof, sufficient to purchase Replenishment Water to offset the net consumptive use of such Production and practices. In addition, the gross amount of such Production for such overlying use shall be subject to Watermaster Administration Assessments under Section 45(a) hereof and the consumptive use portion of such Production for overlying use shall be subject to

Watermaster's In-Lieu Water Cost Assessments under Section 45(d) hereof. The Producers presently entitled to exercise Overlying Rights, a description of the Overlying Land to which Overlying Rights are appurtenant, the nature of use and the consumptive use portion thereof are set forth in Exhibit "K" hereto. Watermaster may require reports and make inspections of the operations of said parties for purposes of verifying the uses set forth in said Exhibit "K", and, in the event of a material change, to redetermine the net amount of consumptive use by such parties as changed, in the exercise of such Overlying Rights.

Annually, during the first two (2) weeks of June in each calendar year, such Overlying Rights Producers shall submit to Watermaster a verified statement as to the nature of the then current uses of said Overlying Rights on said Overlying Lands for the next ensuing Fiscal Year, whereupon Watermaster shall either affirm the prior determination or redetermine the net amount of the consumptive use portion of the exercise of such Overlying Right by said Overlying Rights Producer.

C. INJUNCTION

22. Injunction Against Unauthorized Production. (Prior Judgment Section 15) Effective July 1, 1973, each and every party, its officers, agents, employees, successors and assigns, to whom rights to waters of the Basin or Relevant Watershed have been declared and decreed herein is **ENJOINED AND RESTRAINED** from Producing water for Direct Use from the Basin or the Relevant Watershed except pursuant to rights and Pumpers' Shares herein decreed or which may hereafter be acquired by transfer pursuant to Section 55, or under the provisions of the Physical Solution in this Judgment and the Court's continuing jurisdiction, provided that no party is enjoined from Producing up to five (5) acre feet per Fiscal Year.

23. Injunction re Non-consumptive Uses. (Prior Judgment Section 16) Each party listed in Exhibit "G", its officers, agents, employees, successors and assigns, is **ENJOINED AND RESTRAINED** from materially changing said non-consumptive method of use.

24. Injunction re Change in Overlying Use Without Notice Thereof to Watermaster. (Prior Judgment Section 16.5) Each party listed in Exhibit "K", its officers, agents, employees, successors and assigns, is **ENJOINED AND RESTRAINED** from materially changing said

overlying uses at any time without first notifying Watermaster of the intended change of use, in which event Watermaster shall promptly redetermine the consumptive use portion thereof to be effective after such change.

25. Injunction Against Unauthorized Recharge. (Prior Judgment Section 17) Each party, its officers, agents, employees, successors and assigns, is **ENJOINED AND RESTRAINED** from spreading, injecting or otherwise recharging water in the Basin except pursuant to: (a) an adjudicated non-consumptive use, or (b) consent and approval of or Cyclic Storage Agreement with Watermaster, or (c) subsequent order of this Court.

26. Injunction Against Transportation from Basin or Relevant Watershed. (Prior Judgment Section 18) Except upon further order of Court and except as provided in section 34(r) herein, all parties, other than Transporting Parties and MWD in its exercise of its Special Category Rights, to the extent authorized therein, are **ENJOINED AND RESTRAINED** from transporting water hereafter Produced from the Relevant Watershed or Basin outside the areas thereof. For purposes of this Section, water supplied through a city water system which lies chiefly within the Basin shall be deemed entirely used within the Basin. Transporting Parties are entitled to continue to transport water to the extent that any Production of water by any such party does not violate the injunctive revisions contained in Section 22 hereof; provided that said water shall be used within the present service areas or corporate or other boundaries and additions thereto so long as such additions are contiguous to the then existing service area or corporate or other boundaries; except that a maximum of ten percent (10%) of use in any Fiscal Year may be outside said then existing service areas or corporate or other boundaries. Notwithstanding the foregoing and without in any way changing or limiting the Transporting Parties' entitlement to transport water as set forth herein, any party may enter into an agreement with Watermaster to store Supplemental Water and export said stored Supplemental Water under specific terms and conditions approved by Watermaster. Such storage and export shall be subject to (1) a determination by Watermaster that no material injury to the Basin or parties will result therefrom; (2) execution of an agreement with Watermaster setting forth the terms and conditions upon which water may be stored in or exported from the Basin; and (3) compliance

with Watermaster Rules and Regulations respecting Basin storage and export. (Amended 6/21/12)

D. CONTINUING JURISDICTION

27. Jurisdiction Reserved. (Prior Judgment Section 19) Full jurisdiction, power and authority are retained by and reserved to the Court for purposes of enabling the Court upon application of any party or of the Watermaster, by motion and upon at least thirty (30) days notice thereof, and after hearing thereon, to make such further or supplemental orders or directions as may be necessary or appropriate for interim operation before the Physical Solution is fully operative, or for interpretation, enforcement or carrying out of this Judgment, and to modify, amend or amplify any of the provisions of this Judgment or to add to the provisions thereof consistent with the rights herein decreed. Provided, that nothing in this paragraph shall authorize:

(1) modification or amendment of the quantities specified in the declared rights of any party;

(2) modification or amendment of the manner of exercise of the Base Annual Diversion Right or Integrated Production Right of any party; or

(3) the imposition of an injunction prohibiting transportation outside the Relevant Watershed or Basin as against any Transporting Party transporting in accordance with the provisions of this Judgment or against MWD as to its Special Category Rights.

E. WATERMASTER

28. Watermaster to Administer Judgment. (Prior Judgment Section 20) A Watermaster comprised of nine (9) persons, to be nominated as hereinafter provided and appointed by the Court, shall administer and enforce the provisions of this Judgment and any subsequent instructions or orders of the Court thereunder.

29. Qualification, Nomination and Appointment. (Prior Judgment Section 21) The nine (9) member Watermaster shall be composed of six (6) Producer representatives and three (3) public representatives qualified, nominated and appointed as follows:

(a) Qualification. Any adult citizen of the State of California shall be eligible to serve as Watermaster; provided, however, that no officer, director, employee or agent of Upper District or San Gabriel District shall be qualified as a Producer member of Watermaster.

(b) Nomination of Producer Representatives. A meeting of all parties shall be held at the regular meeting of Watermaster in November of each year, at the offices of Watermaster. Nomination of the six (6) Producer representatives shall be by cumulative voting, in person or by proxy, with each Producer entitled to one (1) vote for each one hundred (100) acre-feet, or portion thereof, of Base Annual Diversion Right or Prescriptive Pumping Right or Integrated Production Right.

(c) Nomination of Public Representatives. On or before the regular meeting of Watermaster in November of each year, the three (3) public representatives shall be nominated by the boards of directors of Upper District (which shall select two [2]) and San Gabriel District (which shall select one [1]). Said nominees shall be members of the board of directors of said public districts.

(d) Appointment. All Watermaster nominations shall be promptly certified to the Court, which will in ordinary course confirm the same by an appropriate order appointing said Watermaster; provided, however, that the Court at all times reserves the right and power to refuse to appoint, or to remove, any member of Watermaster. Notwithstanding section 27 herein, Watermaster nominations may be promptly certified by the Court upon 10 calendar days' notice thereof, plus the time prescribed by statute for service by mail, e-mail or other electronic means. (Amended 6/21/12)

30. Term and Vacancies. (Prior Judgment Section 22) Each member of Watermaster shall serve for a one (1) year term commencing on January 1, following his appointment, or until his successor is appointed. In the event of a vacancy on Watermaster, a successor shall be nominated at a special meeting to be called by Watermaster within ninety (90) days (in the case of a Producer representative) or by action of the appropriate district board of directors (in the case of a public representative).

31. Quorum. (Prior Judgment Section 23) Five (5) members of the Watermaster shall constitute a quorum for the transaction of affairs of the Watermaster. Action by the affirmative vote of five (5) members shall constitute action by Watermaster, except that the affirmative vote of six (6) members shall be required:

(a) to approve the purchase, spreading or injection of water for Ground Water recharge, or

(b) to enter in any Agreement pursuant to Section 34 (n) hereof.

32. Compensation. (Prior Judgment Section 24) Each Watermaster member shall receive compensation of One Hundred Dollars ($100.00) per day for each day's attendance at meetings of Watermaster or for each day's service rendered as a Watermaster member at the request of Watermaster, together with any expenses incurred in the performance of his duties required or authorized by Watermaster. No member of the Watermaster shall be employed by or compensated for professional services rendered by him to Watermaster, other than the compensation herein provided, and any authorized travel or related expense.

33. Organization. (Prior Judgment Section 25) At its first meeting in each year, Watermaster shall elect a chairman and a vice chairman from its membership. It shall also select a secretary, a treasurer and such assistant secretaries and assistant treasurers as may be appropriate, any of whom may, but need not be, members of Watermaster.

(a) Minutes. Minutes of all Watermaster meetings shall be kept, which shall reflect all actions taken by Watermaster. Draft copies thereof shall be furnished to any party who files a request therefor in writing with Watermaster. Said draft copies of minutes shall constitute notice of any Watermaster action therein reported; failure to request copies thereof shall constitute waiver of notice.

(b) Regular Meetings. Watermaster shall hold regular meetings at places and times to be specified in Watermaster's rules and regulations to be adopted by Watermaster. Notice of the scheduled or regular meetings of Watermaster and of any changes in the time or place thereof shall be mailed to all parties who shall have filed a request therefor in writing with Watermaster.

(c) Special Meetings. Special meetings of Watermaster may be called at any time by the chairman or vice chairman or by any three (3) members of Watermaster by written notice delivered personally or mailed to each member of Watermaster and to each party requesting notice, at least twenty-four (24) hours before the time of each such meeting in the case of personal delivery, and forty-eight (48) hours prior to such meeting in the case of mail. The calling notice shall specify the time and place of the special meeting and the business to be transacted at such meeting. No other business shall be considered at such meeting.

(d) Adjournments. Any meeting of Watermaster may be adjourned to a time and place specified in the order of adjournment. Less than a quorum may so adjourn from time to time. A copy of the order or notice of adjournment shall be conspicuously posted on or near the door of the place where the meeting was held within twenty-four (24) hours after adoption of the order of adjournment.

34. Powers and Duties. (Prior Judgment Section 26) Subject to the continuing supervision and control of the Court, Watermaster shall have and may exercise the following express powers, and shall perform the following duties, together with any specific powers, authority and duties granted or imposed elsewhere in this Judgment or hereafter ordered or authorized by the Court in the exercise of its continuing jurisdiction.

(a) Rules and Regulations. To make and adopt any and all appropriate rules and regulations for conduct of Watermaster affairs. A copy of said rules and regulations and any amendments thereof shall be mailed to all parties.

(b) Acquisition of Facilities. To purchase, own, lease, acquire and hold, as trustee for the benefit of the Parties, all necessary personal property and equipment, and such limited real property such as office quarters, monitoring wells, the key well, and other facilities necessary to fulfill Watermaster's basin management responsibilities under this Judgment. (Amended 6/21/12)

(c) Employment of Experts and Agents. To employ such administrative personnel, engineering, geologic, accounting, legal, public policy education or other

specialized services (but not including registered lobbyists) and consulting assistants as may be deemed appropriate in the carrying out of its powers and to require appropriate bonds from all officers and employees handling Watermaster funds. (Amended 6/21/12)

(d) Measuring Devices, etc. To cause parties, pursuant to uniform rules, to install and maintain in good operating condition, at the cost of each party, such necessary measuring devices or meters as may be appropriate; and to inspect and test any such measuring device as may be necessary.

(e) Assessments. To levy and collect all Assessments specified in the Physical Solution.

(f) Investment of Funds. To hold and invest any and all funds which Watermaster may possess in investments authorized from time to time for public agencies in the State of California.

(g) Borrowing. To borrow in anticipation of receipt of Assessment proceeds an amount not to exceed the annual amount of Assessments levied but uncollected, or in accordance with the provisions of Sections 45 and 46 hereto. Upon approval by the Watermaster at its regularly scheduled public meeting, when necessary to secure Supplemental Water, Watermaster may borrow funds in excess of the annual amount of Assessments levied but uncollected. Prior to borrowing funds, Watermaster shall meet and confer with Responsible Agencies and seek their input. Watermaster shall adopt Rules and Regulations specifying: (i) how debt repayment will be allocated among the Parties; (ii) that Watermaster obtain prior approval of the Court before incurring debt that exceeds the total of one year's levied Assessments; and (iii) such other matters as Watermaster deems appropriate for Rules and Regulations respecting the purchase of Supplemental Water using debt. (Amended 6/21/12)

(h) Purchase of and Recharge with Supplemental Water. To purchase Supplemental Water and to introduce the same into the Basin, including Reclaimed Water, for replenishment, Replacement Water, and cyclic storage purposes in the Basin subject to the affirmative vote of six (6) members of Watermaster, provided, the

California Department of Public Health and the Los Angeles Regional Water Quality Control Board have approved such Reclaimed Water for said uses, Watermaster has given prior notice to all parties of its intention to use said Reclaimed Water for such purposes, held noticed hearings thereon, and approves such uses. Reclaimed Water used by Watermaster as Supplemental Water for said purposes shall not be a violation of Sections 3(b) or 3(c) of Exhibit "H" hereto. (Amended 4/2/91 and 6/21/12)

(i) Contracts. To enter into contracts for the performance of any administrative powers herein granted, subject to approval of the Court.

(j) Cooperation with Existing Agencies. To act jointly or cooperate with agencies of the United States and the State of California or any political subdivision, municipality or district to the end that the purposes of the Physical Solution may be fully and economically carried out. (Amended 6/21/12)

(k) Assumption of Make-Up Obligation. Watermaster shall assume the Make-Up Obligation for and on behalf of the Basin.

(m) Water Quality. Water quality in the Basin shall be a concern of Watermaster, and all reasonable steps shall be taken to assist and encourage appropriate regulatory agencies to enforce reasonable water quality regulations affecting the Basin, including regulation of solid and liquid waste disposal.

(n) Cyclic Storage Agreements. To enter into appropriate contracts, to be approved by the Court, for utilization of Ground Water storage capacity of the Basin for cyclic or regulatory storage of Supplemental Water by parties and non-parties, for subsequent recovery or Watermaster credit by the storing entity, pursuant to uniform rules and conditions, which shall include provision for:

(1) Watermaster control of all spreading or injection and extraction scheduling and procedures for such stored water;

(2) calculation by Watermaster of any special costs, damages or burdens resulting from such operations;

(3) determination by Watermaster of, and accounting for, all losses in

stored water, assuming that such stored water floats on top of the Ground Water supplies, and accounting for all losses of water which otherwise would have replenished the Basin, with priorities being established as between two or more such contractors giving preference to parties over non-parties; and

(4) payment to Watermaster for the benefit of the parties hereto of all special costs, damages or burdens incurred (without any charge, rent, assessment or expense as to parties hereto by reason of the adjudicated proprietary character of said storage rights, nor credit or offset for benefits resulting from such storage); provided, that no party shall have any direct interest in or control over such contracts or the operation thereof by reason of the adjudicated right of such party, the Watermaster having sole custody and control of all Ground Water storage rights in the Basin pursuant to the Physical Solution herein, and subject to review of the Court.

(o) Notice List. Maintain a current list of party designees to receive notice hereunder, in accordance with Section 54 hereof.

(p) Authority to Sue. To prosecute litigation, engage in dispute resolution and file amicus curiae briefs in the furtherance of Watermaster's responsibilities under this Judgment. (Amended 6/21/12)

(q) Public Policy Education. To perform public policy education activities in furtherance of Watermaster's responsibilities under this Judgment. (Amended 6/21/12)

(r) Export Agreements. Watermaster may fix terms and conditions under which parties and non-parties may store Supplemental Water in and export said stored Supplemental Water from the Basin. (Amended 6/21/12)

35. Policy Decisions – Procedure. (Prior Judgment Section 27) It is contemplated that Watermaster will exercise discretion in making policy decisions relating to Basin management under the Physical Solution decreed herein. In order to assure full participation and opportunity to be heard for those affected, no policy decision shall be made by Watermaster until thirty (30) days after the question involved has been raised for discussion at a Watermaster

meeting and noted in the draft of minutes thereof.

36. Reports. (Prior Judgment Section 28) Watermaster shall annually file with the Court and mail to the parties a report of all Watermaster activities during the preceding year, including an audited statement of all accounts and financial activities of Watermaster, summary reports of Diversions and Pumping, and all other pertinent information. To the extent practical, said report shall be mailed to all parties on or before November 1. The tables set forth in Exhibits C, D, E, K, L and M are listed for reference purposes only. Future updates to those exhibits shall be set forth in the Watermaster annual report. In lieu of mailing the annual report, Watermaster in its discretion may post the report on its website, mail or e-mail a notice of availability to the parties, and/or provide a hard copy of the report upon request. If a party does not have a valid e-mail address or internet access, that party shall identify an alternative method of service to be approved by Watermaster in its sole discretion. (Amended 6/21/12)

37. Review Procedures. (Prior Judgment Section 29) Any action, decision, rule or procedure of Watermaster (other than a decision establishing Operating Safe Yield, see Section 43(c)) shall be subject to review by the Court on its own motion or on timely motion for an Order to Show Cause by any party, as follows:

(a) Effective Date of Watermaster Action. Any order, decision or action of Watermaster shall be deemed to have occurred on the date that written notice thereof is mailed. Mailing of draft copies of Watermaster minutes to the parties requesting the same shall constitute notice to all such parties.

(b) Notice of Motion. Any party may, by a regularly noticed motion, petition the Court for review of said Watermaster's action or decision. Notice of such motion shall be mailed to Watermaster and all parties. Unless so ordered by the Court, such petition shall not operate to stay the effect of such Watermaster action.

(c) Time for Motion. Notice of motion to review any Watermaster action or decision shall be served and filed within ninety (90) days after such Watermaster action or decision.

(d) De Novo Nature of Proceeding. Upon filing of such motion for hearing, the

Court shall notify the parties of a date for taking evidence and argument, and shall review de novo the question at issue on the date designated. The Watermaster decision or action shall have no evidentiary weight in such proceeding.

(e) Decision. The decision of the Court in such proceeding shall be an appealable Supplemental Order in this case. When the same is final, it shall be binding upon the Watermaster and the parties.

F. PHYSICAL SOLUTION

38. Purpose and Objective. (Prior Judgment Section 30) Consistent with the California Constitution and the decisions of the Supreme Court, the Court hereby adopts and Orders the parties to comply with this Physical Solution. The purpose and objective of these provisions is to provide a legal and practical means for accomplishing the most economic, long term, conjunctive utilization of surface, Ground Water, Supplemental Water and Ground Water storage capacity to meet the needs and requirements of the water users dependent upon the Basin and Relevant Watershed, while preserving existing equities.

39. Need for Flexibility. (Prior Judgment Section 31) In order that Watermaster may be free to utilize both existing and new and developing technological, social and economic concepts for the fullest benefit of all those dependent upon the Basin, it is essential that the Physical Solution hereunder provide for maximum flexibility and adaptability. To that end, the Court has retained continuing jurisdiction to supplement the broad discretion herein granted to the Watermaster.

40. Watermaster Control. (Prior Judgment Section 32) In order to develop an adequate and effective program of Basin management, it is essential that Watermaster have broad discretion in the making of Basin management decisions within the ambit hereinafter set forth. The maintenance, improvement, and control of the water quality and quantity of the Basin, withdrawal and replenishment of supplies of the Basin and Relevant Watershed, and the utilization of the water resources thereof, must be subject to procedures established by Watermaster in implementation of the provisions of this Judgment. Both the quantity and quality of said water resource are thereby preserved and its beneficial utilization maximized.

(Amended 1/29/91)

(a) Watermaster shall develop an adequate and effective program of Basin management. The maintenance, improvement, and control of the water quality and quantity of the Basin, withdrawal and replenishment of supplies of the Basin and Relevant Watershed, and the utilization of the water resources thereof, must be subject to procedures established by Watermaster in implementation of the Physical Solution provisions of this Judgment. All Watermaster programs and procedures shall be adopted only after a duly noticed public hearing pursuant to Section 37 and 40 of the Amended Judgment herein. (Amended 1/29/91)

(b) Watermaster shall have the power to control pumping in the Basin by water Producers therein for Basin cleanup and water quality control so that specific well production can be directed as to a lesser amount, to total cessation, as to an increased amount, and even to require pumping in a new location in the Basin. Watermaster's right to regulate pumping activities of Producers shall be subordinate to any conflicting Basin cleanup plan established by the EPA or other public governmental agency with responsibility for ground water management or clean up, whether existing at the time of this Judgment or subsequent hereto. (Amended 2/24/92)

(c) Watermaster may act individually or participate with others to carry on technical and other necessary investigations of all kinds and collect data necessary to carry out the herein stated purposes. It may engage in contractual relations with the EPA or other agencies in furtherance of the clean up of the Basin and enter into contracts with agencies of the United States, the State of California, or any political subdivision, municipality, or district thereof, to the extent allowed under the applicable federal or state statutes. Any cooperative agreement between the Watermaster and EPA shall require the approval of the appropriate Agency(s) of the State of California. (Amended 1/29/91)

(d) For the regulation and control of pumping activity in the Basin, Watermaster shall adopt Rules and Regulations and programs to promote, manage and accomplish

clean up of the Basin and its waters, including, but not limited to, measures to confine, move, and remove contaminants and pollutants. Such Rules and Regulations and programs shall be adopted only after a duly Noticed Public Hearing by Watermaster and shall be subject to Court review pursuant to Section 37 of the Amended Judgment herein. (Amended 1/29/91)

(e) Watermaster shall determine whether funds from local, regional, state or federal agencies are available for regulating pumping and the various costs associated with, or arising from such activities. If no public funds are available from local, regional, state, or federal agencies, the costs shall be obtained and paid by way of an In-Lieu Assessment by Watermaster pursuant to Section 10(j) of the Amended Judgment herein. Provided such In-Lieu Assessments become necessary, the costs shall be borne by all Basin Producers. (Amended 1/29/91)

(f) Watermaster is a Court empowered entity with limited powers, created pursuant to the Court's Physical Solution Jurisdiction under Article X, Section 2 of the California Constitution. None of the powers granted herein to Watermaster shall be construed as designating Watermaster a political subdivision of the State of California or authorizing Watermaster to act as "lead agency" to administer the federal Superfund for clean up of the Basin. (Amended 1/29/91)

41. General Pattern of Contemplated Operations. (Prior Judgment Section 33) In general outline (subject to the specific provisions hereafter and to Watermaster Operating Criteria set forth in Exhibit "H"), Watermaster will determine annually the Operating Safe Yield of the Basin and will notify each Pumper of his share thereof, stated in acre feet per Fiscal Year. Thereafter, no party may Produce in any Fiscal Year an amount in excess of the sum of his Diversion Right, if any, plus his Pumper's Share of such Operating Safe Yield, or his Integrated Production Right, or the terms of any Cyclic Storage Agreement, without being subject to Assessment for the purpose of purchasing Replacement Water. In establishing the Operating Safe Yield, Watermaster shall follow all physical, economic, and other relevant parameters provided in the Watermaster Operating Criteria. Watermaster shall have Assessment powers to

raise funds essential to implement the management plan in any of the several special circumstances herein described in more detail.

42. Basin Operating Criteria. (Prior Judgment Section 34) Until further order of the Court, Watermaster shall recharge Replacement Water in accordance with the Watermaster Operating Criteria and, insofar as practicable, to maintain the water level at the Key Well above Elevation two hundred (200). (Amended 6/21/12)

43. Determination of Operating Safe Yield. (Prior Judgment Section 35) Watermaster shall annually determine the Operating Safe Yield applicable to the succeeding Fiscal Year and estimate the same for the next succeeding four (4) Fiscal Years. In making such determination, Watermaster shall be governed in the exercise of its discretion by the Watermaster Operating Criteria. The procedures with reference to said determination shall be as follows:

(a) Preliminary Determination. On or before Watermaster's first meeting in April of each year, Watermaster shall make a Preliminary Determination of the Operating Safe Yield of the Basin for each of the succeeding five Fiscal Years. Said determination shall be made in the form of a report containing a summary statement of the considerations, calculations and factors used by Watermaster in arriving at said Operating Safe Yield.

(b) Notice and Hearing. A copy of said Preliminary Determination and report shall be mailed to each Pumper and Integrated Producer at least ten (10) days prior to a hearing to be held at Watermaster's regular meeting in May, of each year, at which time objections or suggested corrections or modifications of said determinations shall be considered. Said hearing shall be held pursuant to procedures adopted by Watermaster.

(c) Watermaster Determination and Review Thereof. Within thirty (30) days after completion of said hearing, Watermaster shall mail to each Pumper and Integrated Producer a final report and determination of said Operating Safe Yield for each such Fiscal Year, together with a statement of the Producer's entitlement in each such Fiscal Year stated in acre-feet. Any affected party, within thirty (30) days of mailing of notice

of said Watermaster determination, may, by a regularly noticed motion, petition the Court for an Order to Show Cause for review of said Watermaster finding, and thereupon the Court shall hear such objections and settle such dispute. Unless so ordered by the Court, such petition shall not operate to stay the effect of said report and determination. In the absence of such review proceedings, the Watermaster determination shall be final.

44. Reports of Pumping and Diversion. (Prior Judgment Section 36) Each party shall file with the Watermaster quarterly, on or before the last day of January, April, July and October, a report on a form to be prescribed by Watermaster showing the total Pumping and Diversion (separately for Direct Use and for non-consumptive use, if any) of such party during the preceding calendar quarter.

45. Assessments – Purpose. (Prior Judgment Section 37)

(a) Statement of Authority and Need for Flexibility: Watermaster shall have the power to levy and collect Assessments from the parties (other than non-consumptive users, or Production under Special Category Rights or Cyclic Storage Agreements) based upon Production during the preceding Fiscal Year. Assessments on Minimal Producers will apply only to (1) existing parties who become Minimal Producers in the future; and (2) Minimal Producers who intervene after June 21, 2012. Because Supplemental Water may not be available for extended periods of time, Watermaster requires flexibility with respect to the procedures for purchasing Supplemental Water supplies, as and when those supplies become available. This Judgment is a Physical Solution entered pursuant to California Constitution Article X, Section 2, which recognizes that the timing and amount of Watermaster Assessments for Replacement Water costs must be determined in light of this uncertainty. This Judgment therefore grants Watermaster the flexibility and discretion necessary to purchase and pre-purchase Supplemental Water and levy assessments in an appropriate and equitable manner and amount to maximize the opportunities to secure necessary Supplemental Waters in the best interest of the parties and the long-term sustainability of the Basin. In accordance with Rules and Regulations adopted by Watermaster, to further enhance flexibility, Watermaster may borrow money

from any available fund maintained by it for purposes other than Replacement Water purchases, or use accrued funds, to purchase Supplemental Water. (Amended 6/21/12)

(b) Authorized Assessments: Said Assessments may be for one or more of the following purposes:

(1) Watermaster Administration Costs. (Former Section 45(a)) Within thirty (30) days after completion of the hearing on the Preliminary Determination of the Operating Safe Yield of the Basin and Watermaster's determination thereof, pursuant to Section 43 hereof, Watermaster shall adopt a proposed budget for the succeeding Fiscal Year and shall mail a copy thereof to each party, together with a statement of the level of Administration Assessment levied by Watermaster which will be collected for purposes of raising funds for said budget. Said Assessment shall be uniformly applicable to each acre-foot of Production. (Amended 6/21/12)

(2) Replacement Water Costs. (Former Section 45(b)) Replacement Water Assessments shall be collected from each party on account of such party's Production in excess of its Diversion Rights, Pumper's Share or Integrated Production Right, and on account of the consumptive use portion of Overlying Rights, computed at the applicable rate established by Watermaster consistent with the Watermaster Operating Criteria, and other relevant factors, including the projected cost and availability of Supplemental Water supplies. Subject to Rules and Regulations adopted by Watermaster, Watermaster Replacement Water Assessment rates may be in an amount calculated to allow Watermaster to purchase more than one acre-foot of Supplemental Water for each acre-foot of excess Production to which such Assessment applies, when such purchases are necessary to secure Supplemental Water supplies for the benefit of the Basin and parties. (Amended 6/21/12)

(3) Make-Up Obligation. (Former Section 45(c)) An Assessment shall be collected equally on account of each acre-foot of Production, which does not

bear a Replacement Assessment hereunder, to pay all necessary costs of Administration and satisfaction of the Make-Up Obligation. Such Assessment shall not be applicable to water Production for an Overlying Right.

(4) In-Lieu Water Cost. (Former Section 45(d)) Watermaster may levy an Assessment against all Pumping to pay reimbursement for In-Lieu Water Costs except that such Assessment shall not be applicable to the non-consumptive use portion of an Overlying Right.

(5) Basin Water Quality Improvement. (Former Section 45(e)) For purposes of testing, protecting or improving the water quality in the Basin, Watermaster may, after a noticed hearing thereon, fix terms and conditions under which it may waive all or any part of its Assessments on such ground water Production and if such Production, in addition to his other Production, does not exceed such Producer's Share or entitlement for that Fiscal Year, such stated Production shall be allowed to be carried over for a part of such Producer's next Fiscal Year's Producer's Share or entitlement. In connection therewith, Watermaster may also waive the provisions of Section 25, 26 and 57 hereof, relating to Injunction Against Unauthorized Recharge, Injunction Against Transportation From Basin or Relevant Watershed, and Intervention After Judgment, respectively. Nothing in this Judgment is intended to allow an increase in any Producer's annual entitlement nor to prevent Watermaster, after hearing thereon, from entering into contracts to encourage, assist and accomplish the clean up and improvement of degraded water quality in the Basin by non-parties herein. Such contracts may include the exemption of the Production of such Basin water therefor from Watermaster Assessments and, in connection therewith, the waiver of the provisions of Judgment Sections 25, 26, and 57 hereof.

(6) Export and Storage. Watermaster shall levy an assessment to account for costs, burdens or losses incurred in connection with such exported or stored

water, including a fee for storage administration. Such storage or export shall be subject to (1) a determination by Watermaster that no material injury to the Basin or parties will result therefrom; (2) execution of an agreement with Watermaster setting forth the terms and conditions upon which water may be stored in or exported from the Basin; and (3) compliance with Watermaster Rules and Regulations respecting Basin storage and export. (Amended 6/21/12)

(7) Water Resource Development Assessment. Watermaster may levy an Assessment on all Pumping, as determined through Rules and Regulations to be adopted by the Watermaster, to support the purchase, financing, and/or development of new or additional Supplemental Water sources, in cooperation with one or more Responsible Agencies as appropriate. (Amended 6/21/12)

46. Assessments – Procedure. (Prior Judgment Section 38) Assessments herein provided for shall be levied and collected as follows:

(a) Levy and Notice of Assessment. Within thirty (30) days of Watermaster's annual determination of Operating Safe Yield of the Basin for each Fiscal Year and succeeding four (4) Fiscal Years, and at such other time[s] of the year as determined by Watermaster, Watermaster shall levy applicable Administration Assessments, Replacement Water Assessments, Make-Up Water Assessments, In-Lieu Water Assessments, and Water Resource Development Assessments, if any. Watermaster shall give written notice of all applicable Assessments to each party on or before August 15, of each year, and at such other time[s] as determined by Watermaster. To provide flexibility and maximize the opportunity to secure Replacement Water supplies when available, in accordance with criteria set forth in the Watermaster Rules and Regulations, Watermaster may levy supplemental assessments as necessary to create sufficient funds to purchase and pre-purchase such Replacement Water supplies for the benefit of the Basin and parties. (Amended 6/21/12)

(b) Payment. Each Assessment shall be payable, and each party is Ordered to pay the same, on or before September 20, following such Assessment, subject to the

rights reserved in Section 37 hereof.

(c) Delinquency. Any Assessment which becomes delinquent after January 1, 1980, shall bear interest at the annual prime rate plus one percent (1%) in effect on the first business day of August of each year. Said prime interest rate shall be that fixed by the Bank of America NT&SA for its preferred borrowing customers on said date. Said prime interest rate plus one percent (1%) shall be applicable to any said delinquent Assessment from the due date thereof until paid. Provided, however, in no event shall any said delinquent Assessment bear interest at a rate of less than ten percent (10%) per annum. Such delinquent Assessment and interest may be collected in a Show Cause proceeding herein or any other legal proceeding instituted by Watermaster, and in such proceeding the Court may allow Watermaster its reasonable costs of collection, including attorney's fees.

47. Availability of Supplemental Water from Responsible Agencies. (Prior Judgment Section 39) If any Responsible Agency shall, for any reason, be unable to deliver Supplemental Water to Watermaster in a timely fashion when needed, Watermaster may (1) collect funds at an appropriate level and hold them in trust, together with interest accrued thereon, for purchase of such water when available; (2) purchase water from the remaining Responsible Agencies which are the most beneficial and appropriate sources observing all legal and contractual constraints on the availability of such water; or (3) purchase Supplemental Water from any other available source. Watermaster shall consult with the Responsible Agencies involved and in good faith shall determine the appropriate source of Supplemental Water under such circumstances. Should Watermaster arrange to purchase Supplemental Water from a source not involving a Responsible Agency, Watermaster shall provide the Responsible Agencies an opportunity to provide said Supplemental Water or comparable water supplies on comparable terms. (Amended 6/21/12)

48. Accumulation of Replacement Water Assessment Proceeds. (Prior Judgment Section 40) In order to minimize fluctuation in Assessments and to give Watermaster flexibility in Basin management, Watermaster may make reasonable accumulations of Replacement Water

Assessments. Such moneys and any interest accrued thereon shall only be used for the purchase of Replacement Water.

49. Carry-over of Unused Rights. (Prior Judgment Section 41) Any Pumper's Share of Operating Safe Yield, and the Production right of any Integrated Producer, which is not Produced in a given Fiscal Year may be carried over and accumulated for one Fiscal Year, pursuant to reasonable rules and procedures for notice and accounting which shall be adopted by Watermaster. The first water Produced in the succeeding Fiscal Year shall be deemed Produced pursuant to such Carry-over Rights.

50. Minimal Producers. (Prior Judgment Section 42) In the interest of Justice, Minimal Producers who initiated production on or before June 21, 2012, are exempted from the operation of this Physical Solution, so long as such party's annual Production does not exceed five (5) acre-feet. Watermaster may require, and Minimal Producers shall furnish, specific periodic reports. In addition, Watermaster may conduct such investigation of future operations of any Minimal Producer as may be appropriate. As of June 21, 2012, there shall be no new Minimal Producers, and any new Producer shall be subject to all provisions of the Judgment. (Amended 6/21/12)

51. Effective Date. (Prior Judgment Section 43) The effective date for commencing accounting and operation under this Physical Solution, other than for Replacement Water Assessments, shall be July 1, 1972. The first Assessment for Replacement Water shall be payable on September 20, 1974, on account of Fiscal Year 1973-74 Production.

G. MISCELLANEOUS PROVISIONS

52. Puente Narrows Flow. (Prior Judgment Section 44) The Puente Basin is tributary to the Main San Gabriel Basin. All Producers within said Puente Basin have been dismissed herein, based upon the Puente Narrows Agreement (Exhibit "J"), whereby Puente Basin Water Agency agreed not to interfere with surface inflow and to assure continuance of historic subsurface contribution of water to Main San Gabriel Basin. The Court declares said Agreement to be reasonable and fair and in full satisfaction of claims by Main San Gabriel Basin for natural water from Puente Basin.

53. Deleted Section (Amended 6/21/12)

54. Service Upon and Delivery to Parties of Various Papers. (Prior Judgment Section 46) Service of the Judgment on those parties who have executed the Stipulation for Judgment shall be made by first class mail, postage prepaid, addressed to the Designee and at the address designated for that purpose in the executed and filed counterpart of the Stipulation for Judgment, or in any substitute designation filed with the Court.

Each party who has not heretofore made such a designation shall, within thirty (30) days after the Judgment shall have been served upon that party, file with the Court, with proof of service of a copy thereof upon Watermaster, a written designation of the person to whom and the address at which all future notices, determinations, requests, demands, objections, reports and other papers and processes to be served upon that party or delivered to that party are to be so served or delivered.

A later substitute designation filed and served in the same manner by any party shall be effective from the date of filing as to the then future notices, determinations, requests, demands, objections, reports and other papers and processes to be served upon or delivered to that party.

Delivery to or service upon any party by Watermaster, by any other party, or by the Court, of any item required to be served upon or delivered to a party under or pursuant to the Judgment may be made by deposit thereof (or by copy thereof) in the mail, first class, postage prepaid, addressed to the Designee of the party and at the address shown in the latest designation filed by that party. In lieu of mailing any item required to be served under this Judgment, Watermaster may serve such item by electronic service, which may include posting the document to Watermaster's website, sending an e-mail of the document to that party, or sending a notice of availability to that party indicating the document's availability for viewing on the Watermaster website. If a party does not have a valid e-mail address or internet access, that party shall identify an alternative method of service to be approved by Watermaster in its sole discretion.

Any party desiring to be relieved of receiving notices of Watermaster activity may file a waiver of notice on a form to be provided by Watermaster. Thereafter such party shall be

removed from the active party service list and not receive any notices required under this Judgment. The parties have a duty to keep Watermaster informed of their current e-mail and mailing addresses. If mail or e-mail is returned undeliverable to Watermaster for an incorrect address, Watermaster in its sole discretion may remove that party from the active party service list. (Amended 6/21/12)

55. Assignment, Transfer, etc., of Rights. (Prior Judgment Section 47) Any rights Adjudicated herein except Overlying Rights, may be assigned, transferred, licensed or leased by the owners thereof; provided however, that no such assignment shall be complete until the appropriate notice procedures established by Watermaster have been complied with. No water Produced pursuant to rights assigned, transferred, licensed, or leased may be transported outside the Relevant Watershed except by:

(1) a Transporting Party, or

(2) a successor in interest immediate or mediate to a water system on lands or portion thereof, theretofore served by such a Transporting Party, for use by such successor in accordance with limitations applicable to Transporting Parties, or

(3) a successor in interest to the Special Category rights of MWD.

The transfer and use of Overlying Rights shall be limited, as provided in Section 21 hereof, as exercisable only on the specifically defined Overlying Lands and they cannot be separately conveyed or transferred apart therefrom.

56. Abandonment of Rights. (Prior Judgment Section 48) It is in the interest of reasonable beneficial use of the Basin and its water supply that no party be encouraged to take and use more water in any Fiscal Year than is actually required. Failure to Produce all of the water to which a party is entitled hereunder shall not, in and of itself, be deemed or constitute an abandonment of such party's right, in whole or in part. Abandonment and extinction of any right herein Adjudicated shall be accomplished only by:

(1) a written election by the party, filed in this case, or

(2) upon noticed motion of Watermaster, and after hearing.

In either case, such abandonment shall be confirmed by express subsequent order of this

Court.

57. Intervention After Judgment. (Prior Judgment Section 49) Any person who is not a party or successor to a party and who proposes to Produce water from the Basin or Relevant Watershed, may seek to become a party to this Judgment through a Stipulation For Intervention entered into with Watermaster. Watermaster may execute said Stipulation on behalf of the other parties herein but such Stipulation shall not preclude a party from opposing such Intervention at the time of the Court hearing thereon. Said Stipulation For Intervention must thereupon be filed with the Court, which will consider an order confirming said Intervention following thirty (30) days' notice to the parties. Thereafter, if approved by the Court, such Intervenor shall be a party bound by this Judgment and entitled to the rights and privileges accorded under the Physical Solution herein.

58. Judgment Binding on Successors, etc. (Prior Judgment Section 50) Subject to specific provisions hereinbefore contained, this Judgment and all provisions thereof are applicable to and binding upon and inure to the benefit of not only the parties to this action, but as well to their respective heirs, executors, administrators, successors, assigns, lessees, licensees and to the agents, employees and attorneys in fact of any such persons.

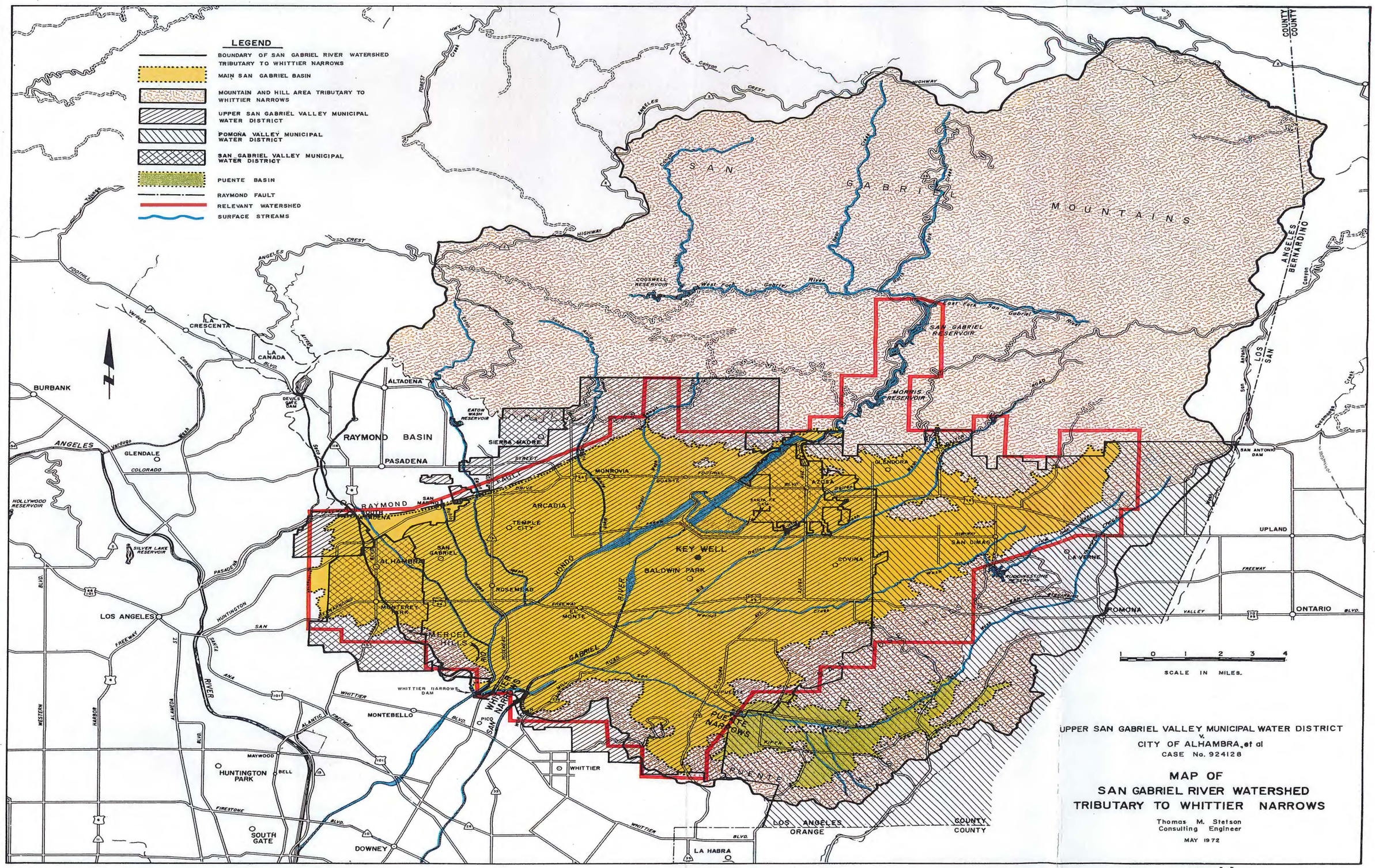
59. Water Rights Permits. (Prior Judgment Section 51) Nothing herein shall be construed as affecting the relative rights and priorities between MWD and San Gabriel Valley Protective Association under State Water Rights Permits Nos. 7174 and 7175, respectively.

60. Costs. (Prior Judgment Section 52) No party shall recover any costs in this proceeding from any other party.

61. Entry of Judgment. (New) The Clerk shall enter this Judgment.

DATED: June 21, 2012

s/ Maureen Duffy-Lewis
Maureen Duffy-Lewis, Judge
Specially Assigned



UPPER SAN GABRIEL VALLEY MUNICIPAL WATER DISTRICT
v.
CITY OF ALHAMBRA, et al
CASE No. 924128

MAP OF SAN GABRIEL RIVER WATERSHED TRIBUTARY TO WHITTIER NARROWS

Thomas M. Stetson
Consulting Engineer

MAY 1972

EXHIBIT "A"

EXHIBIT "B"

BOUNDARIES OF RELEVANT WATERSHED

The following described property is located in Los Angeles County, State of California:

Beginning at the Southwest corner of Section 14, Township 1 North, Range 11 West, San Bernardino Base and Meridian;

Thence Northerly along the West line of said Section 14 to the Northwest corner of the South half of said Section 14;

Thence Easterly along the North line of the South half of Section 14 to the East line of said Section 14;

Thence Northerly along the East line of said Section 14, Township 1 North, Range 11 West and continuing Northerly along the East line of Section 11 to the Northeast corner of said Section 11;

Thence Easterly along the North line of Section 12 to the Northeast corner of said Section 12;

Thence Southerly along the East line of said Section 12 and continuing Southerly along the East line of Section 13 to the Southeast corner of said Section 13, said corner being also the Southwest corner of Section 18, Township 1 North, Range 10 West;

Thence Easterly along the South line of Sections 18, 17, 16 and 15 of said Township 1 North, Range 10 West to the Southwest corner of Section 14;

Thence Northerly along the West line of Section 14 to the Northwest corner of the South half of Section 14;

Thence Easterly along the North line of the South half of Section 14 to the East line of said section;

Thence Northerly along the East line of said Section 14, and continuing Northerly along the West line of Section 12 of said Township 1 North, Range 10 West to the North line of said Section 12;

Thence Easterly along the North line of said Section 12, to the Northeast corner of said Section 12, said corner being also the Southwest corner of Section 6, Township 1 North, Range 9 West;

Thence Northerly along the West line of said Section 6 and continuing Northerly along West line of Sections 31 and 30, Township 2 North, Range 9 West to the Westerly prolongation of the North line of said Section 30;

Thence Easterly along said Westerly prolongation of the North line of said Section 30 and continuing Easterly along the North line of Section 29 to the Northeast corner of said Section 29;

Thence Southerly along the East line of said Section 29 and continuing Southerly along the East line of Section 32, Township 2 North, Range 9 West, and thence continuing Southerly along the East line of Section 5, Township 1 North, Range 9 West to the Southeast corner of said Section 5;

Thence Westerly along the South line of said Section 5 to the Southwest corner of said Section 5, said point being also the Northwest corner of Section 8;

Thence Southerly along the West line of said Section 8 and continuing Southerly along the West line of Section 17, to the Southwest corner of said Section 17, said corner being also the Northwest corner of Section 20;

Thence Easterly along the North line of Sections 20 and 21 to the Northwest corner of Section 22, said corner being also the Southwest corner of Section 15;

Thence Northerly along the West line of said Section 15 to the Northwest corner of the South half of said Section 15;

Thence Easterly along the North line of said South half of Section 15 to the Northeast corner of said South half of Section 15;

Thence Southerly along the East line of Section 15 and continuing Southerly along the East line of Section 22 to the Southeast corner of said Section 22, said point being also the Southwest corner of Section 23;

Thence Easterly along the South line of Sections 23 and 24 to the East line of the West half of said Section 24;

Thence Northerly along said East line of the West half of Section 24 to the North line thereof;

Thence Easterly along said North line of Section 24 to the Northeast corner thereof, said point also being the Northwest corner of Section 19, Township 1 North, Range 8 West;

Thence continuing Easterly along the North line of Section 19 and Section 20 of said Township 1 North, Range 8 West to the Northeast corner of said Section 20;

Thence Southerly along the East line of Sections 20, 29 and 32 of said Township 1 North, Range 8 West to the Southeast corner of said Section 32;

Thence Westerly along the South line of Section 32 to the Northwest corner of the East half of Section 5, Township 1 South, Range 8 West;

Thence Southerly along the West line of the East half of said Section 5 to the South line of said Section 5;

Thence West to the East line of the Northerly prolongation of Range 9 West;

EXHIBIT "C"

TABLE SHOWING BASE ANNUAL DIVERSION RIGHTS OF CERTAIN DIVERTERS AS OF JUNE 21, 2012

DIVERTER	BASE ANNUAL DIVERSION RIGHT (ACRE-FEET)
Covell, Ralph	2.12
(Successor to Rittenhouse, Catherine and Rittenhouse, James)[1]	
(Transferred to Aqua Capital Management LP)[2]	-2.12
	0.00
Maddock, A. G.	3.40
(Transferred to San Gabriel Valley Water Company)[2]	-3.40
	0.00
Rittenhouse, Catherine	**0.00**
(Transferred to Covell, Ralph)[1]	
Rittenhouse, James	**0.00**
(Transferred to Covell, Ralph)[1]	
Ruebhausen, Arline	18.34
(Held in common with Ruebhausen, Victor)	
(Transferred to City of Glendora)[2]	-18.34
	0.00
Ruebhausen, Victor	--
(See Ruebhausen, Arline)	
TOTAL	**0.00**

1/ Permanent transfer of rights as recorded at entry of Judgment.
2/ Permanent transfer of rights after entry of Judgment.
3/ Intervenor after Judgment.

EXHIBIT "D"

TABLE SHOWING RIGHTS AND PUMPER'S SHARE OF EACH PUMPER AS OF JUNE 21, 2012

PUMPER	PRESCRIPTIVE PUMPING ACRE-FEET	PUMPER'S SHARE %
6W Farms, Inc.	1,217.40	0.61599
(Formerly Woodland Farms, Inc.)		
(Transferred to:		
Miller Brewing Company	-919.50	-0.46526
Richard J. Woodland)[2]	-297.90	-0.15073
	0.00	**0.00000**
Adams Ranch Mutual Water Company	**100.00**	**0.05060**
A & E Plastik Pak Co., Inc.	**0.00**	**0.00000**
(Transferred to Industry Properties, Ltd.)[1]		
Alhambra, City of	**8,812.05**	**4.45876**
Amarillo Mutual Water Company	**709.00**	**0.35874**
American Sheds, Inc.[3]		
(Successor to Southwestern Portland Cement Company)[2]	742.00	0.37544
(Transferred to USA Waste of California, Inc.)[2]	-742.00	-0.37544
	0.00	**0.00000**
Anchor Plating Co., Inc.[3]		
(Successor to Bodger & Sons, DBA Bodger Seeds Ltd.)[2]	10.00	0.00506
(Transferred to Crown City Plating Co.)[2]	-10.00	-0.00506
	0.00	**0.00000**
Anderson Family Marital Trust[3]		
(Successor to Anderson, Ray L. and Helen T.)[2]	50.16	0.02538
(Transferred to:		
Brondino, Jeanne	-25.08	-0.01269
Heinrich, Carolyn)[2]	-25.08	-0.01269
	0.00	**0.00000**

PUMPER	PRESCRIPTIVE PUMPING ACRE-FEET	PUMPER'S SHARE %
Anderson, Ray[3]		
(Successor to Covina Valley Unified School District)[2]	50.16	0.02538
(Transferred to Anderson, Ray L. and Helen T.)[2]	-50.16	-0.02538
	0.00	**0.00000**
Anderson, Ray L. and Helen T.[3]		
(Successor to Anderson, Ray)[2]	50.16	0.02538
(Transferred to Anderson Family Marital Trust)[2]	-50.16	-0.02538
	0.00	**0.00000**
Andrade, Macario and Consuelo; and Andrade, Robert and Jayne[3]		
(Successor to J. F. Isbell Estate, Inc.)[2]	8.36	0.00423
(Transferred to Susan Andrade)[2]	-8.36	-0.00423
	0.00	**0.00000**
Andrade, Susan[3]		
(Successor to Andrade, Macario and Consuelo; and Andrade, Robert and Jayne)[2]	8.36	0.00423
	8.36	**0.00423**
Arcadia, City of	9,252.00	4.68137
(Successor to First National Finance Corporation)[2]	60.90	0.03081
(Transferred to City of Monrovia)[2]	-951.00	-0.48119
	8,361.90	**4.23099**
Associated Southern Investment Company	16.50	0.00335
(Transferred to Southern California Edison Company)[2]	-16.50	-0.00335
	0.00	**0.00000**
AZ-Two, Inc.[3]	--	--
(See Southdown, Inc.)		
Azusa Associates, LLC[3]		
(Successor to Snyder, Esther)[2]	18.51	0.00937
(Transferred to Aqua Capital Management LP)[2]	-18.51	-0.00937
	0.00	**0.00000**
Azusa-Western Inc.	742.00	0.37544
(Transferred to Southwestern Portland Cement Co.)[2]	-742.00	-0.37544
	0.00	**0.00000**
Bahnsen & Beckman Ind., Inc.	840.50	0.42528
(Transferred to Woodland, Richard)[2]	-840.50	-0.42528
	0.00	**0.00000**

PUMPER	PRESCRIPTIVE PUMPING ACRE-FEET	PUMPER'S SHARE %
Bahnsen, Betty M.	441.90	0.22359
(Transferred to Dawes, Mary Kay)[2]	-441.90	-0.22359
	0.00	**0.00000**
Baldwin Park County Water District	--	--
(See Valley County Water District)		
Bandel Family Trust[3]		
(Successor to Garnier, Camille A, Deceased,	16.70	0.00845
Estate of)[2]	**16.70**	**0.00845**
Banks, Gale C. and Vicki Lynn[3]		
(Successor to Doyle, Mr. and Mrs.; and	50.00	0.02530
Madruga, Mr. and Mrs.)[2]	**50.00**	**0.02530**
Base Line Water Company	430.20	0.21767
(Transferred to Hughes Development Corporation)[2]	-430.20	-0.21767
	0.00	**0.00000**
Beverly Acres Mutual Water Company	--	--
(See Beverly Acres Mutual Water Users Association)		
Beverly Acres Mutual Water Users Association	93.00	0.04706
(Formerly Beverly Acres Mutual Water Company)		
(Transferred to:		
San Gabriel Valley Water Company;	-50.00	-0.02530
Nicholson Trust)[2]	-43.00	-0.02176
	0.00	**0.00000**
Birenbaum, Max	6.00	0.00304
(Held in common with Birenbaum, Sylvia; Schneiderman, Alan; Schneiderman, Lydia; Wigodsky, Bernard; Wigodsky, Estera)		
(Transferred to City of Whittier)[2]	-6.00	-0.00304
	0.00	**0.00000**
Birenbaum, Sylvia	--	--
(See Birenbaum, Max)		
Blue Diamond Concrete Materials Div., The Flintkote Company	1,399.33	0.70804
(Transferred to Sully-Miller Contracting Co.)[2]	-1,399.33	-0.70804
	0.00	**0.00000**

PUMPER	PRESCRIPTIVE PUMPING ACRE-FEET	PUMPER'S SHARE %
Bodger & Sons DBA Bodger Seeds Ltd.	10.00	0.00506
(Transferred to Anchor Plating Co., Inc.)[2]	-10.00	-0.00506
	0.00	**0.00000**
Botello Water Company	**0.00**	**0.00000**
Brezina, Raymond W. and Susan W. Trust 2001[3]	**0.00**	**0.00000**
Brondino, Jeanne[3]		
(Successor to Anderson Family Marital Trust)[2]	25.08	0.01269
	25.08	**0.01269**
Burbank Development Company	50.85	0.02563
(Transferred to Wright, Darrell A., Wright, Merle M. &	-50.85	-0.02563
Carlson, Jeanne W.)[2]	**0.00**	**0.00000**
Cadway, Inc.[3]		
(Successor to:		
Corcoran, Jack S. and R. L.	100.00	0.05060
Corcoran, Jack S. and R. L.	100.00	0.05060
Corcoran, Jack S. and R. L.	273.50	0.13839
Corcoran, Jack S. and R. L.	30.00	0.01518
Garnier, Janus	203.00	0.10272
Sloan Ranches	129.60	0.06558
Corcoran, Jack S. and R.L.)[2]	243.50	0.12320
(Transferred to:		
California Domestic Water Company	-243.50	-0.12321
California Domestic Water Company	-129.60	-0.06558
California Domestic Water Company)[2]	-63.30	-0.03203
	643.20	**0.32545**
Cal Fin	118.10	0.05976
(Transferred to Suburban Water Systems)[2]	-118.10	-0.05976
	0.00	**0.00000**
California-American Water Company	**7,868.70**	**3.98144**
(San Marino System)		
California Country Club[3]	**0.00**	**0.00000**
(Formerly CCC Management)		

PUMPER	PRESCRIPTIVE PUMPING ACRE-FEET	PUMPER'S SHARE %
California Domestic Water Company	11,024.82	5.57839
(Successor to:		
Cantrill Mutual Water Company[1]	42.50	0.02150
Industry Properties, Ltd.[2]	73.50	0.03719
Modern Accent Corporation[2]	256.86	0.12997
Fisher, Russell[2]	19.00	0.00961
Graveline, George Wayne and Alexis June, Trust[2]	216.60	0.10959
Cadway, Inc.[2]	243.50	0.12321
Cadway, Inc.[2]	129.60	0.06558
Cadway, Inc.[2])	63.30	0.03203
	12,069.68	**6.10707**
California Materials Company	**0.00**	**0.00000**
CalMat	--	--
(Formerly Conrock Company)		
(See Vulcan Materials Company)		
Cantrill Mutual Water Company	**0.00**	**0.00000**
(Transferred to California Domestic Water Company)[1]		
Canyon Water Company[3]		
(Successor to McIntyre, William)[2]	1.00	0.00051
	1.00	**0.00051**
Canyon Water & Development Corporation[3]	**0.00**	**0.00000**
CCC Management[3]	--	--
(See California Country Club)		
Cedar Avenue Mutual Water Company	121.10	0.06127
(Transferred to San Gabriel Valley Water Company)[2]	-121.10	-0.06127
	0.00	**0.00000**
CEMEX California Aggregates, Inc.[3]	--	--
(Formerly Southdown)		
Champion Mutual Water Company	**147.68**	**0.07472**
Chevron U.S.A.	**2.00**	**0.00101**
(Formerly Standard Oil of California)		
Chronis, Christine[3]	--	--
(See Polopolus, et al.)		

PUMPER	PRESCRIPTIVE PUMPING ACRE-FEET	PUMPER'S SHARE %
Clayton Manufacturing Company	511.80	0.25896
(Transferred to City of Glendora)[2]	-511.80	-0.25896
	0.00	**0.00000**
Coiner, James W., dba Coiner Nursery[3]	--	--
Collison, E. O.	**0.00**	**0.00000**
Comby, Erma M.	--	--
(See Wilmott, Erma M.)		
Conrock Company	--	--
(See CalMat)		
(Formerly Consolidated Rock Products Co.)		
Consolidated Rock Products Co.	--	--
(See Conrock Company)		
Corcoran, Jack S.	747.00	0.37797
(Held in common with Corcoran, R. L.)		
(Transferred to:		
Cadway, Inc.	-100.00	-0.05060
Cadway, Inc.	-100.00	-0.05060
Cadway, Inc.	-273.50	-0.13839
Cadway, Inc.	-30.00	-0.01518
Cadway, Inc.)[2]	-243.50	-0.12320
	0.00	**0.00000**
Corcoran, R. L.	--	--
(See Corcoran, Jack S.)		
County Sanitation District No. 18 of Los Angeles County	**4.50**	**0.00228**

PUMPER	PRESCRIPTIVE PUMPING ACRE-FEET	PUMPER'S SHARE %
Covell, et al.	111.05	0.05619
(Successor to Rittenhouse, Catherine and Rittenhouse, James)[1]		
(Held in common with Tate, Phillip G. and Sieglinde A.; Goedert, Lillian E.; Goedert, Marion W.; Lakin, Kendall R.; Lakin, Kelly R.; Snyder, Harry; Snyder, Esther)		
(Transferred to:		
Lakin, Kelly R.	-9.26	-0.00468
Goedert, Lillian E.	-9.26	-0.00468
Tate, Phillip G. and Sieglinde A.	-57.83	-0.02926
Snyder, Esther	-18.51	-0.00937
Aqua Capital Management LP)[2]	-16.19	-0.00820
	0.00	**0.00000**
Covina, City of	2,507.89	1.26895
(Transferred to:		
Covina Irrigating Company	-1,734.00	-0.87737
Covina Irrigating Company)[2]	-300.00	-0.15179
	473.89	**0.23979**
Covina-Valley Unified School District	50.16	0.02538
(Transferred to Anderson, Ray)[2]	-50.16	-0.02538
	0.00	**0.00000**
Crevolin, A. J.	**2.25**	**0.00114**
Crocker National Bank, Executor of the Estate of A. V. Handorf	**0.00**	**0.00000**
(Transferred to Modern Accent Corp.)[1]		
Cross Water Company	1,103.00	0.05581
(Transferred to Industry Waterworks System, City of)[2]	-1,103.00	-0.05581
	0.00	**0.00000**
Crown City Plating Company	190.00	0.09614
(Successor to Anchor Plating Co., Inc.)[2]	10.00	0.00506
(Transferred to Valencia Heights Water Company)[2]	-200.00	-0.10120
	0.00	**0.00000**
Davidson Optronics, Inc.	22.00	0.01113
(Transferred to Covina Irrigating Company)[2]	-22.00	-0.01113
	0.00	**0.00000**

PUMPER	PRESCRIPTIVE PUMPING ACRE-FEET	PUMPER'S SHARE %
Dawes, Mary Kay[3] (Successor to Bahnsen, Betty M.)[2]	**441.90**	**0.22359**
Del Rio Mutual Water Company	**199.00**	**0.10069**
Denton, Kathryn W., Trustee for San Jose Ranch Company	185.50	0.09386
(Transferred to White, June G., Trustee of the June G. White share of the Garnier Trust)[2]	-185.50	-0.09386
	0.00	**0.00000**
Doyle, Mr. and Mrs.; and Madruga, Mr. and Mrs.[3]		
(Successor to Sawpit Farms, Limited)[2]	50.00	0.02530
(Transferred to Banks, Gale C. and Vicki Lynn)[2]	-50.00	-0.02530
	0.00	**0.00000**
Driftwood Dairy	**163.80**	**0.08288**
Duhalde, L. (Transferred to El Monte Union High School District)[1]	**0.00**	**0.00000**
Dunning, George (Held in common with Dunning, Vera H.)		
(Successor to Vera H. Dunning)[2]	324.00	0.16394
(Transferred to Dunning Trust, George A. V.)[2]	-324.00	-0.16394
	0.00	**0.00000**
Dunning Trust, George A. V.[3]		
(Successor to Dunning, George)[2]	324.00	0.16394
(Transferred to Loyola Marymount University)[2]	-324.00	-0.16394
	0.00	**0.00000**
Dunning, Vera H. (See Dunning, George)	324.00	0.16394
(Transferred to Dunning, George)[2]	-324.00	-0.16394
	0.00	**0.00000**
Durfee Property, LLC[3]		
(Successor to Texaco, Inc.)[2]	50.00	0.02530
(Transferred to San Gabriel Valley Water Company)[2]	-50.00	-0.02530
	0.00	**0.00000**
East Pasadena Water Company, Ltd.	**1,407.69**	**0.71227**

PUMPER	PRESCRIPTIVE PUMPING ACRE-FEET	PUMPER'S SHARE %
Eckis, Rollin[3]		
(Successor to Sawpit Farms, Limited)[2]	123.00	0.06224
(Transferred to City of Monrovia)[2]	-123.00	-0.06224
	0.00	**0.00000**
El Encanto Properties	33.40	0.01690
(Transferred to La Puente Valley	-33.40	-0.01690
County Water District)[2]	**0.00**	**0.00000**
El Monte, City of	2,784.23	1.40878
(Successor to W. E. Hall Company)[2]	0.20	0.00010
	2,784.43	**1.40888**
El Monte Cemetery Association	**18.50**	**0.00936**
El Monte Union High School District	9.80	0.00496
(Successor to Duhalde, L.)[1]	6.40	0.00324
(Transferred to City of Whittier)[2]	-16.20	-0.00820
	0.00	**0.00000**
Everett, Mrs. Alda B.	**0.00**	**0.00000**
(Held in common with Everett, W.B., Executor of the Estate of I. Worth Everett)		
Everett, W.B., Executor of the Estate of I. Worth Everett	--	--
(See Everett, Mrs. Alda B.)		
Faix, Incorporated	**0.00**	**0.00000**
(Successor to Frank F. Pellissier & Sons, Inc.)[1]		
(Transferred to Faix, Ltd.)[1]		
Faix, Ltd.	6,490.00	3.28384
(Successor to Faix, Incorporated)[1]		
(Transferred to Pellissier Irrevocable QTIP Trust, et al,	-6,490.00	-3.28384
Laurence R., Co-tenancy of)[2]	**0.00**	**0.00000**
First National Finance Corporation	60.90	0.03081
(Transferred to City of Arcadia)[2]	-60.90	-0.03081
	0.00	**0.00000**
Fisher, Russell	19.00	0.00961
(Held in common with Hauch, Edward and Warren, Clyde)		
(Transferred to California Domestic Water Company)[2]	-19.00	-0.00961
	0.00	**0.00000**

PUMPER	PRESCRIPTIVE PUMPING ACRE-FEET	PUMPER'S SHARE %
Fox Family Trust Michael Edward Fox and Crystal Marie Fox, Trustees[3]		
(Successor to Maggiore, Valarie; Fox, Crystal; and Kirklen, Jeffery)[2]	**145.83**	**0.07378**
Frank F. Pellissier & Sons, Inc.	**0.00**	**0.00000**
(Transferred to Faix, Incorporated)[1]		
Fruit Street Water Company	207.00	0.10474
(Transferred to:		
Gifford, Brooks, Jr.,	-101.29	-0.05125
City of La Verne)[2]	-105.71	-0.05349
	0.00	**0.00000**
Garnier, Anton C. and Anita, Family Trust[3]		
(Successor to:		
South Covina Water Service	203.00	0.10271
Garnier, Camille A., Deceased, Estate of	8.30	0.00420
Garnier, Janus)[2]	3.00	0.00152
	214.30	**0.10843**
Garnier, Camille A., Deceased, Estate of[3]		
(Successor to South Covina Water Service)[2]	83.30	0.04215
(Transferred to:		
The Ruth Elaine Ailor Garnier Trust	-41.70	-0.02110
The George Wayne and Alexis June Graveline Trust	-8.30	-0.00420
The Anton C. and Anita Garnier Family Trust	-8.30	-0.00420
Janus Garnier	-8.30	-0.00420
The Bandel Family Trust)[2]	-16.70	-0.00845
	0.00	**0.00000**
Garnier, Janus[3]		
(Successor to :		
Garnier, Camille A. Deceased, Estate of	8.30	0.00420
South Covina Water Service)[2]	203.00	0.10272
(Transferred to:		
George Wayne and Alexis June Graveline Trust	-5.30	-0.00268
The Anton C. and Anita Garnier Family Trust	-3.00	-0.00152
Cadway, Inc.)[2]	-203.00	-0.10272
	0.00	**0.00000**
Garnier, Ruth Elaine Ailor, Trust[3]		
(Successor to Garnier, Camille A. Deceased,	41.70	0.02110
Estate of)[2]	**41.70**	**0.02110**

PUMPER	PRESCRIPTIVE PUMPING ACRE-FEET	PUMPER'S SHARE %
Gates, James Richard[3]	**0.00**	**0.00000**
Gifford, Brooks, Jr.[3]		
(Successor to:		
Fruit Street Water Company,	101.29	0.05125
Mission Gardens Mutual Water Company)[2]	96.96	0.04906
(Transferred to City of Whittier)[2]	-198.25	-0.10031
	0.00	**0.00000**
Gilkerson, Frank B.	--	--
(Formerly part of Covell, et al.)		
(Transferred interest in Covell, et al. to Jobe, Darr)[2]		
Glendora Unified High School District	99.00	0.05009
(Transferred to City of Glendora)[2]	-99.00	-0.05009
	0.00	**0.00000**
Goedert, Lillian E.		
(See Covell, et al.)		
(Successor to Covell, et al.)[2]	9.26	0.00468
(Transferred to Covina Irrigating Co.)[2]	-7.00	-0.00354
	2.26	**0.00114**
Goedert, Marion W.	--	--
(See Covell, et al.)		
Golden State Water Company,	**5,773.00**	**2.92105**
San Gabriel Valley District		
(Formerly Southern California Water Company)		
Graham, William	--	--
(Formerly part of Covell, et al.)		
(Transferred interest in Covell et al. to Jobe, Darr)[2]		
Graveline, George Wayne and Alexis June, Trust[3]		
(Successor to:		
South Covina Water Service	203.00	0.10271
Garnier, Camille A., Deceased, Estate of	8.30	0.00420
Garnier, Janus)[2]	5.30	0.00268
(Transferred to California Domestic Water Company)[2]	-216.60	-0.10959
	0.00	**0.00000**
Green, Walter	**71.70**	**0.03628**

PUMPER	PRESCRIPTIVE PUMPING ACRE-FEET	PUMPER'S SHARE %
Grizzle, Lissa B.	184.00	0.09310
(Held in common with Grizzle, Mervin A.; Wilson, Harold R.; Wilson, Sarah C.)		
(Transferred to City of Whittier)[2]	-184.00	-0.09310
	0.00	**0.00000**
Grizzle, Mervin A.	--	--
(See Grizzle, Lissa B.)		
Hansen, Alice	**0.75**	**0.00038**
Hanson Aggregates West, Inc.[3]		
(Successor to:		
Livingston-Graham, Inc.	1,824.40	0.92312
Sully-Miller Contracting Company)[2]	489.77	0.24782
	2,314.17	**1.17094**
Hartley, David[3]	**0.00**	**0.00000**
Hauch, Edward	--	--
(See Fisher, Russell)		
Heinrich, Carolyn[3]		
(Successor to Anderson Family Marital Trust)[2]	25.08	0.01269
	25.08	**0.01269**
Hemlock Mutual Water Company	**166.00**	**0.08399**
Hollenbeck Street Water Company	**0.00**	**0.00000**
(Transferred to Suburban Water Systems)[1]		
Hughes Development Corporation[3]		
(Successor to Base Line Water Company)[2]	430.20	0.21767
(Transferred to:		
San Gabriel County Water District	-400.00	-0.20239
San Gabriel County Water District)[2]	-30.20	-0.01528
	0.00	**0.00000**
Hunter, Lloyd F.[3]		
(Successor to Wade, R.)[2]	4.40	0.00223
(Transferred to Covina Irrigating Company)[2]	-4.40	-0.00223
	0.00	**0.00000**
Hydro-Conduit Corporation	**0.00**	**0.00000**

PUMPER	PRESCRIPTIVE PUMPING ACRE-FEET	PUMPER'S SHARE %
Industry Waterworks System, City of[3]		
(Successor to Cross Water Company)[2]	1,103.00	0.55810
	1,103.00	**0.55810**
Industry Properties, Ltd.		
(Successor to A & E Plastik Pak Co., Inc.)[1]	73.50	0.03719
(Transferred to California Domestic Water Co.)[2]	-73.50	-0.03719
	0.00	**0.00000**
Irwindale, City of[3]		
(Successor to United Concrete Pipe Corporation)[2]	376.00	0.19025
	376.00	**0.19025**
J. F. Isbell Estate, Inc.	8.36	0.00423
(Transferred to Andrade, Macario and	-8.36	-0.00423
Consuelo; and Andrade, Robert and Jayne)[2]	**0.00**	**0.00000**
Jerris, Helen[3]	--	--
(See Polopolus, et al.)		
Jobe, Darr[3]	--	--
(Formerly part of Covell, et al.)		
(Successor to:		
Gilkerson, Frank B. interest in Covell et al.		
Graham, William interest in Covell et al.)[2]		
(Transferred interest in Covell et al. to Tate, Phillip G. and Sieglinde A.)[2]		
Kirklen Family Trust[3]	375.00	0.18974
(Formerly Kirklen, Dawn L.)		
(Held in common with Kirklen, William R.)		
(Successor to San Dimas-La Verne	62.50	0.03162
Recreational Facilities Authority)[2]		
(Transferred to		
Maggiore, Valarie; Fox, Crystal; and Kirklen, Jeffery)[2]	-437.50	-0.22136
	0.00	**0.00000**
Kirklen, Dawn L.	--	--
(See Kirklen Family Trust)		
Kirklen, Jeffery[3]	**145.84**	**0.07379**
(Successor to Maggiore, Valarie; Fox, Crystal; and Kirklen, Jeffery)[2]		
Kirklen, William R.	--	--
(See Kirklen, Dawn L.)		

PUMPER	PRESCRIPTIVE PUMPING ACRE-FEET	PUMPER'S SHARE %
Kiyan Farms	30.00	0.01518
(Formerly Kiyan, Hideo)		
(Transferred to West Covina Venture, Ltd.)[2]	-30.00	-0.01518
	0.00	**0.00000**
Kiyan, Hideo	--	--
(See Kiyan Farms)		
(Held in common with Kiyan, Hiro)		
Kiyan, Hiro	--	--
(See Kiyan, Hideo)		
Knight, Kathryn M.[3]		
(Successor to Knight, William)[2]	227.88	0.11530
(Transferred to Knight, William)[2]	-227.88	-0.11530
	0.00	**0.00000**
Knight, William	227.88	0.11530
(Transferred to Knight, Kathryn M.)[2]	-227.88	-0.11530
(Successor to Knight, Kathryn M.)[2]	227.88	0.11530
	227.88	**0.11530**
Lakin, Kelly R.[3]		
(See Covell, et al.)		
(Successor to Covell, et al.)[2]	9.26	0.00468
(Transferred to:		
Covina Irrigating Co.	-6.03	-0.00305
Covina Irrigating Co.)[2]	-3.23	-0.00163
	0.00	**0.00000**
Lakin, Kendall R.[3]	--	--
(See Covell, et al.)		
Landeros, John	**0.75**	**0.00038**
La Grande Source Water Company	**0.00**	**0.00000**
(Transferred to Suburban Water Systems)[1]		
Lang, Frank	**0.00**	**0.00000**
(Transferred to San Dimas-La Verne Recreational Facilities Authority)[1]		
La Puente Cooperative Water Co.	**0.00**	**0.00000**
(Transferred to Suburban Water Systems)[1]		

PUMPER	PRESCRIPTIVE PUMPING ACRE-FEET	PUMPER'S SHARE %
La Puente Valley County Water District	1,097.00	0.55507
(Successor to El Encanto Properties)[2]	33.40	0.01690
	1,130.40	**0.57197**
La Verne, City of	250.00	0.12650
(Successor to Fruit Street Water Co.)[2]	105.71	0.05349
(Transferred to Covina Irrigating Co.)[2]	-355.71	-0.17999
	0.00	**0.00000**
Lee, Paul M. and Ruth A.; Nasmyth, Virginia; Nasmyth, John[3]	**0.00**	**0.00000**
Little John Dairy	**0.00**	**0.00000**
Livingston-Graham, Inc.	1,824.40	0.92312
(Transferred to Hanson Aggregates West, Inc.)[2]	-1,824.40	-0.92312
	0.00	**0.00000**
Los Flores Mutual Water Company	26.60	0.01346
(Transferred to City of Monterey Park)[2]	-26.60	-0.01346
	0.00	**0.00000**
Loucks, David	**3.00**	**0.00152**
Lovelady, June G., Trustee[3]		
(Successor to White, June G., Trustee of the June G. White Share of the Garnier Trust)[2]	185.50	0.09386
	185.50	**0.09386**
Loyola Marymount University[3]		
(Successor to George A.V. Dunning Trust)[2]	324.00	0.16394
(Transferred to City of Glendora)[2]	-324.00	-0.16394
	0.00	**0.00000**
Maggiore, Valarie[3]		
(Successor to Maggiore, Valarie; Fox, Crystal; and Kirklen, Jeffrey)[2]	**145.83**	**0.07379**
Maggiore, Valarie; Fox, Crystal; and Kirklen, Jeffery[3]		
(Successor to Kirklen Family Trust)[2]	437.50	0.22136
(Transferred to:		
(Maggiore, Valarie;	-145.83	-0.07379
Kirklen, Jeffrey;	-145.84	-0.07379
Fox Family Trust, Michael Edward Fox and Crystal Marie Fox, Trustees)[2]	-145.83	-0.07378
	0.00	**0.00000**

PUMPER	PRESCRIPTIVE PUMPING ACRE-FEET	PUMPER'S SHARE %
Manning Bros. Rock & Sand Co.	328.00	0.16596
(Transferred to Conrock Company)[2]	-328.00	-0.16596
	0.00	**0.00000**
Maple Water Company	118.50	0.05996
(Transferred to Southwest Water Co.)[2]	-118.50	-0.05996
	0.00	**0.00000**
Martinez, Frances Mercy	**0.75**	**0.00038**
(Held in common with Martinez, Jaime)		
Martinez, Jaime	--	--
(See Martinez, Frances Mercy)		
Massey-Ferguson Company	**0.00**	**0.00000**
McIntyre, William[3]		
(Successor to West Covina Venture, Ltd.)[2]	30.00	0.01518
(Transferred to Canyon Water Company)[2]	-1.00	-0.00051
	29.00	**0.01467**
Miller Brewing Company	111.01	0.05617
(Successor to:		
Maechtlen, Estate of J.J.	151.50	0.07666
Phillips, Alice B., et al.	50.00	0.02530
South Covina Water Service	300.00	0.15180
Woodland Farms	919.50	0.46526
Woodland, Richard)[2]	840.50	0.42528
(Transferred to Miller Breweries West, L.P.)[2]	-2,372.51	-1.20047
	0.00	**0.00000**
Miller Breweries West, L.P.[3]		
(Successor to Miller Brewing Company)[2]	2,372.51	1.20047
(Transferred to MillerCoors LLC)[2]	-2,372.51	-1.20047
	0.00	**0.00000**
MillerCoors LLC[3]		
(Successor to Miller Breweries West, L.P.)[2]	**2,372.51**	**1.20047**
Mission Gardens Mutual Water Company	96.96	0.04906
(Transferred to Gifford, Brooks, Jr.)[2]	-96.96	-0.04906
	0.00	**0.00000**

PUMPER	PRESCRIPTIVE PUMPING ACRE-FEET	PUMPER'S SHARE %
Modern Accent Corporation		
(Successor to Crocker National Bank, Executor of the Estate of A. V. Handorf)[1]	256.86	0.12997
(Transferred to California Domestic Water Co.)[2]	-256.86	-0.12997
	0.00	**0.00000**
Monterey Park, City of	6,677.48	3.37870
(Successor to Los Flores Mutual Water Co.)[2]	26.60	0.01346
	6,704.08	**3.39216**
Munoz, Ralph E.[3]	**0.00**	**0.00000**
Murphy Ranch Mutual Water Company	223.23	0.11295
(Transferred to Southwest Suburban Water)[2]	-223.23	-0.11295
	0.00	**0.00000**
Namimatsu Farms	196.00	0.09917
(Transferred to California Cities Water Co.)[2]	-196.00	-0.09917
	0.00	**0.00000**
Nick Tomovich & Sons	**0.02**	**0.00001**
Nicholson Trust[3]		
(Successor to Beverly Acres Mutual Water Users Association)[2]	43.00	0.02176
(Transferred to:		
Nicholson Family Trust	-7.00	-0.00354
Nicholson Trust, Helene S.)[2]	-12.00	-0.00607
	24.00	**0.01215**
Nicholson Family Trust[3]		
(Successor to Nicholson Trust)[2]	7.00	0.00354
	7.00	**0.00354**
Nicholson Trust, Helene S.[3]		
(Successor to Nicholson Trust)[2]	12.00	0.00607
(Transferred to San Gabriel Valley Water Co.)[2]	-12.00	-0.00607
	0.00	**0.00000**
New Owl Rock Products[3]		
(Successor to Owl Rock Products Co.)[2]	715.60	0.36208
(Transferred to Robertson's Ready Mix, Ltd.)[2]	-715.60	-0.36208
	0.00	**0.00000**

PUMPER	PRESCRIPTIVE PUMPING ACRE-FEET	PUMPER'S SHARE %
No. 17 Walnut Place Mutual Water Co.	21.50	0.01088
(Transferred to San Gabriel Valley Water Co.)[2]	-21.50	-0.01088
	0.00	**0.00000**
Orange Production Credit Association[3]	**0.00**	**0.00000**
Owl Rock Products Co.	715.60	0.36208
(Transferred to New Owl Rock Products)[2]	-715.60	-0.36208
	0.00	**0.00000**
Pacific Rock & Gravel Co.	408.00	0.20644
(Transferred to:	-208.00	-0.10524
City of Whittier,	-200.00	-0.10120
Rose Hills Memorial Park Association)[2]	**0.00**	**0.00000**
Park Water Company	184.01	0.09311
(Transferred to Valley County Water District)[2]	-184.01	-0.09311
	0.00	**0.00000**
Parton Family Trust[3]	46.20	0.02338
(Formerly Via, H., Trust of)[2]		
(Transferred to San Gabriel Valley Water Company)[2]	-46.20	-0.02338
	0.00	**0.00000**
Pellissier Irrevocable QTIP Trust, et al, Laurence R., Co-tenancy of [3]		
(Successor to Faix, Ltd)[2]	6,490.00	3.28384
	6,490.00	**3.28384**
Penn, Margaret[3]	--	--
(See Polopolus, et al.)		
Pico County Water District	**0.75**	**0.00038**
Polopolus, John[3]	--	--
(See Polopolus, et al.)		
Polopolus, et al.[3]		
(Successor to Polopolus, Steve)[2]	22.50	0.01138
(Held in common with Chronis, Christine;	**22.50**	**0.01138**
Jerris, Helen; Penn, Margaret; Polopolus, John)		
Polopolus, Steve	22.50	0.01138
(Transferred to Polopolus, et al.)[2]	-22.50	-0.01138
	0.00	**0.00000**

PUMPER	PRESCRIPTIVE PUMPING ACRE-FEET	PUMPER'S SHARE %
Rados, Alexander (Held in common with Rados, Stephen and Rados, Walter)	**43.00**	**0.02176**
Rados, Stephen (See Rados, Alexander)	--	--
Rados, Walter (See Rados, Alexander)	--	--
Richwood Mutual Water Company	192.60	0.09745
(Transferred to San Gabriel Valley Water Company)[2]	-192.60	-0.09745
	0.00	**0.00000**
Rincon Ditch Company	628.00	0.31776
(Transferred to Workman Mill Investment Company)[2]	-628.00	-0.31776
	0.00	**0.00000**
Rincon Irrigation Company	314.00	0.15888
(Transferred to Workman Mill Investment Company)[2]	-314.00	-0.15888
	0.00	**0.00000**
Rio Hondo Memorial Foundation, The[3] (Formerly Rose Hills Foundation, The) (See Rose Hills Foundation, The)	--	--
Rittenhouse, Catherine (Transferred to Covell, Ralph)[1]	**0.00**	**0.00000**
Rittenhouse, James (Transferred to Covell, Ralph)[1]	**0.00**	**0.00000**
Robertson's Ready Mix, Ltd.[3]		
(Successor to New Owl Rock Products)[2]	715.60	0.36208
(Transferred to San Gabriel County Water District)[2]	-715.60	-0.36208
	0.00	**0.00000**
Rose Hills Memorial Park Association (See Rose Hills Foundation, The)	--	--

PUMPER	PRESCRIPTIVE PUMPING ACRE-FEET	PUMPER'S SHARE %
Rose Hills Foundation, The[3]		
(Formerly Rose Hills Memorial Park Association)		
(See Rio Hondo Memorial Foundation, The)		
(Formerly Rio Hondo Memorial Foundation, The)	594.00	0.30055
(Successor to Pacific Rock & Gravel Co.)[2]	200.00	0.10120
(Transferred to:		
Workman Mill Investment Co.	-594.00	-0.30055
Workman Mill Investment Co.)[2]	-200.00	-0.10120
	0.00	**0.00000**
Rosemead Development, Ltd.[3]		
(Successor to Thompson, Earl W.)[2]	1.00	0.00051
	1.00	**0.00051**
Rurban Homes Mutual Water Company	**217.76**	**0.11018**
Ruth, Roy	**0.75**	**0.00038**
San Dimas Golf Inc. DBA Via Verde County Club[3]	**0.00**	**0.00000**
San Dimas-La Verne Recreational Facilities Authority		
(Successor to Lang, Frank)[1]	62.50	0.03162
(Transferred to Kirklen, Dawn L. and William R.)[2]	-62.50	-0.03162
	0.00	**0.00000**
San Gabriel Country Club	**286.10**	**0.14476**
San Gabriel County Water District	4,250.00	2.15044
(Successor to:		
Hughes Development Corporation	400.00	0.20239
Hughes Development Corporation	30.20	0.01528
Robertson's Ready Mix, Ltd.)[2]	715.60	0.36208
	5,395.80	**2.73019**
San Gabriel Valley Municipal Water District	**0.00**	**0.00000**
Sawpit Farms, Limited	173.00	0.08754
(Transferred to:		
Eckis, Rolin	-123.00	-0.06224
Doyle and Madruga)[2]	-50.00	-0.02530
	0.00	**0.00000**
Schneiderman, Alan	--	--
(See Birenbaum, Max)		

PUMPER	PRESCRIPTIVE PUMPING ACRE-FEET	PUMPER'S SHARE %
Schneiderman, Lydia	--	--
(See Birenbaum, Max)		
Security Pacific National Bank,	38.70	0.01958
Co-trustee for the Estate of Winston F. Stoody		
(See Stoody, Virginia A.)		
(Transferred to City of Whittier)[2]	-38.70	-0.01958
	0.00	**0.00000**
Sierra La Verne Country Club[3]	**0.00**	**0.00000**
Sierra Madre, City of	**0.00**	**0.00000**
Sloan Ranches	129.60	0.06558
(Transferred to Cadway, Inc.)[2]	-129.60	-0.06558
	0.00	**0.00000**
Smith, Charles[3]	**0.00**	**0.00000**
Snyder, Esther[3]		
(Successor to Covell, et al)[2]	18.51	0.00937
(Transfered to Azusa Associates, LLC)[2]	-18.51	-0.00937
	0.00	**0.00000**
Snyder, Harry	--	--
(See Covell, et al.)		
Sonoco Products Company	**311.60**	**0.15766**
South Covina Water Service	992.30	0.50209
(Transferred to:		
Miller Brewing Company	-300.00	-0.15180
Anton C. and Anita Garnier Family Trust	-203.00	-0.10271
The George Wayne and Alexis June Graveline Trust	-203.00	-0.10271
The Estate of Camille A. Garnier, Deceased	-83.30	-0.04215
Garnier, Janus)[2]	-203.00	-0.10272
	0.00	**0.00000**
Southdown, Inc.[3]	--	--
(Formerly AZ-Two, Inc.)		
(See CEMEX California Aggregates, Inc.)		
Southern California Edison Company	155.25	0.07855
(Successor to Associated		
Southern Investment Company)[2]	16.50	0.00835
	171.75	**0.08690**

PUMPER	PRESCRIPTIVE PUMPING ACRE-FEET	PUMPER'S SHARE %
Southern California Water Company, San Gabriel Valley District (See Golden State Water Company, San Gabriel Valley District)	--	--
South Pasadena, City of	**3,567.70**	**1.80520**
Southwest Suburban Water (See Suburban Water Systems)	--	--
Southwest Water Company [3] (Successor to Maple Water Company)[2]	118.50 **118.50**	0.05996 **0.05996**
Southwestern Portland Cement Company[3] (Successor to Azusa Western, Inc.)[2] (Transferred to American Sheds, Inc.)[2]	742.00 -742.00 **0.00**	0.37544 -0.37544 **0.00000**
Speedway 605, Inc.[3]	**0.00**	**0.00000**
Standard Oil Company of California (See Chevron U.S.A.)	--	--
Sterling Mutual Water Company	**120.00**	**0.06072**
Stoody, Virginia A., Co-trustee for the	--	--
Stoody, Winston F., Estate of (See Security Pacific National Bank, Co-trustee)	--	--
Suburban Water Systems (Formerly Southwest Suburban Water) (Successor to:	20,462.47	10.35370
Hollenbeck Street Water Company[1]	646.39	0.32706
La Grande Source Water Company[1]	1,078.00	0.54545
La Puente Cooperative Water Co.[1]	1,210.90	0.61270
Valencia Valley Water Company[1]	651.50	0.32965
Victoria Mutual Water Company[1]	469.60	0.23761
Cal Fin[2]	118.10	0.05976
Murphy Ranch Mutual Water Co.[2])	223.23	0.11295
	24,860.19	**12.57888**

PUMPER	PRESCRIPTIVE PUMPING ACRE-FEET	PUMPER'S SHARE %
Sully-Miller Contracting Company[3]		
(Successor to Blue Diamond Concrete	1,399.33	0.70804
Materials Div., The Flintkote Company)[2]		
(Transferred to:		
United Rock Products Corporation	-909.56	-0.46022
Hanson Aggregates West, Inc.)[2]	-489.77	-0.24782
	0.00	**0.00000**
Sunny Slope Water Company	**2,228.72**	**1.12770**
Tate, Phillip G. and Sieglinde A.[3]	**57.83**	**0.02926**
(See Covell,et al.)		
(Successor to Jobe, Darr interest in Covell, et al.)[2]		
(Successor to Covell, et al.)[2]		
Taylor Herb Garden	6.00	0.00304
(Transferred to Covina Irrigating Company)[2]	-6.00	-0.00304
	0.00	**0.00000**
Texaco, Inc. (Chevron U.S.A., Inc.)	50.00	0.02530
(Transferred to Durfee Property, LLC)[2]	-50.00	-0.02530
	0.00	**0.00000**
Thompson, Earl W.	1.00	0.00051
(Held in common with Thompson, Mary)		
(Transferred to Rosemead Development, Ltd.)[2]	-1.00	-0.00051
	0.00	**0.00000**
Thompson, Mary	--	--
(See Thompson, Earl W.)		
Tran, Hieu[3]	**0.00**	**0.00000**
Tyler Nursery	**3.21**	**0.00162**
United Concrete Pipe Corporation	376.00	0.19025
(Transferred to Irwindale, City of)[2]	-376.00	-0.19025
	0.00	**0.00000**
United Rock Products Corporation[3]		
(Successor to:		
Sully Miller Contracting Company)[2]	909.56	0.46022
	909.56	**0.46022**
USA Waste of California, Inc.[3]		
(Successor to American Sheds, Inc.)[2]	742.00	0.37544
(Transferred to Aqua Capital Management LP)[2]	-742.00	-0.37544
	0.00	**0.00000**

PUMPER	PRESCRIPTIVE PUMPING ACRE-FEET	PUMPER'S SHARE %
U.S. Pipe & Foundry Company[3] (See United Concrete Pipe Corporation)	--	--
Valencia Heights Water Company	861.00	0.43565
(Successor to Crown City Plating Company)[2]	200.00	0.10120
	1,061.00	**0.53685**
Valencia Valley Water Company (Transferred to Suburban Water Systems)[1]	**0.00**	**0.00000**
Vallecito Water Company	2,867.00	1.45066
(Transferred to San Gabriel Valley	-2,867.00	-1.45066
Water Company)[2]	**0.00**	**0.00000**
Valley County Water District	5,775.00	2.92206
(Formerly Baldwin Park County Water District)		
(Successor to Park Water Company)[2]	184.01	0.09311
	5,959.01	**3.01517**
Valley Crating Company	**0.00**	**0.00000**
Valley View Mutual Water Company	**616.00**	**0.31169**
Via, H. (See Via, H., Trust of)	--	--
Via, H., Trust of (Formerly Via, H.) (See Parton Family Trust)	--	--
Victoria Mutual Water Company (Transferred to Suburban Water Systems)[1]	**0.00**	**0.00000**
Vietnamese American Buddhist Temple Congregation[3]	**0.00**	**0.00000**
Vulcan Materials Company		
(Formerly CalMat)		
(Successor to Manning Bros. Rock & Sand Co.)[2]	1,793.35	0.90740
	1,793.35	**0.90740**
Wade, R.	4.40	0.00223
(Transferred to Hunter, Lloyd F.)[2]	-4.40	-0.00223
	0.00	**0.00000**
Ward Duck Company (See Woodland Farms, Inc.)	--	--

PUMPER	PRESCRIPTIVE PUMPING ACRE-FEET	PUMPER'S SHARE %
Warren, Clyde (See Fisher, Russell)	--	--
W. E. Hall Company	0.20	0.00010
(Transferred to City of El Monte)[2]	-0.20	-0.00010
	0.00	**0.00000**
West Covina Venture, Ltd.[3]		
(Successor to Kiyan Farms)[2]	30.00	0.01518
(Transferred to McIntyre, William)[2]	-30.00	-0.01518
	0.00	**0.00000**
White, June G., Trustee of the June G. White Share of the Garnier Trust[3]		
(Successor to Denton, Kathryn W., Trustee for the San Jose Ranch Company)[2]	185.50	0.09386
(Transferred to Lovelady, June G., Trustee)[2]	-185.50	-0.09386
	0.00	**0.00000**
Whittier, City of	7,620.23	3.85572
(Successor to:		
Grizzle, Lissa B.	184.00	0.09310
Pacific Rock and Gravel Co.	208.00	0.10524
Security Pacific National Bank, Co-trustee for the Estate of Winston F. Stoody	38.70	0.01958
El Monte Union High School District	16.20	0.00820
Gifford, Brooks, Jr.	198.25	0.10031
Birenbaum, Max)[2]	6.00	0.00304
	8,271.38	**4.18519**
Wigodsky, Bernard (See Birenbaum, Max)	--	--
Wigodsky, Estera (See Birenbaum, Max)	--	--
Wilmott, Erma M. (Formerly Comby, Erma M.)	**0.75**	**0.00038**
Wilson, Harold R. (See Grizzle, Lissa B.)	--	--
Wilson, Sarah C. (See Grizzle, Lissa B.)	--	--

PUMPER	PRESCRIPTIVE PUMPING ACRE-FEET	PUMPER'S SHARE %
Woodland Farms, Inc.	--	--
(See 6W Farms, Inc.)		
(Formerly Ward Duck Company)		
Woodland, Frederick G.[3]	--	--
Woodland, Richard[3]		
(Successor to Bahnsen & Beckman Ind., Inc.)[2]	840.50	0.42528
(Transferred to Miller Brewing Company)[2]	-840.50	-0.42528
(Successor to 6W Farms, Inc.)[2]	297.90	0.15073
(Transferred to Aqua Capital Management LP)[2]	-297.90	-0.15073
	0.00	**0.00000**
Workman Mill Investment Company[3]		
(Successor to:		
Rincon Ditch Company	628.00	0.31776
Rincon Irrigation Company	314.00	0.15888
Rose Hills Memorial Park Association	594.00	0.30055
Rose Hills Foundation, The)[2]	200.00	0.10120
	1,736.00	**0.87839**
Wright, Darrell A., Wright, Merle M. & Carlson, Jeanne W.[3]		
(Successor to Burbank Development Co.)[2]	50.65	0.02563
(Transferred to San Gabriel Valley Water Company)[2]	-50.65	-0.02563
	0.00	**0.00000**
Totals for Exhibit "D"	**129,765.87**	**65.65953**
Totals for Exhibit "E"	**67,868.56**	**34.34047**
GRAND TOTALS	**197,634.43**	**100.00000**

1/ Permanent transfer of rights as recorded at entry of Judgment.
2/ Permanent transfer of rights after entry of Judgment.
3/ Intervenor after Judgment.

EXHIBIT "E"

TABLE SHOWING PRODUCTION RIGHT OF EACH INTEGRATED PRODUCER AS OF JUNE 21, 2012

INTEGRATED PRODUCER	DIVERSION COMPONENT ACRE-FEET	PRESCRIPTIVE PUMPING COMPONENT ACRE-FEET	PUMPING COMPONENT SHARE %
Aqua Capital Management LP[3]			
(Successor to:			
Covell, Ralph	2.12	0.00	0.00000
Covell et al.	0.00	16.19	0.00820
Azusa Associates, LLC	0.00	18.51	0.00937
USA Waste of California, Inc.	0.00	742.00	0.37544
Richard Woodland)[2]	0.00	297.90	0.15073
	2.12	**1,074.60**	**0.54374**
Azusa, City of	0.00	3,655.99	1.84988
(Successor to Monrovia Nursery Company)[2]	363.00	0.00	0.00000
	363.00	**3,655.99**	**1.84988**
Azusa Agricultural Water Company	1,000.00	1,732.20	0.87647
(Transferred to:			
Azusa Valley Water Company	-830.00	-1,437.73	-0.72747
Azusa Valley Water Company)[2]	-170.00	-294.47	-0.14900
	0.00	**0.00**	**0.00000**
Azusa Foot-Hill Citrus Company	718.50	0.00	0.00000
(Transferred to Monrovia Nursery Company)[2]	-718.50		
	0.00	**0.00**	**0.00000**
Azusa Valley Water Company	2,422.00	8,274.00	4.18652
(Successor to:			
Azusa Agricultural Water Company	830.00	1,437.73	0.72747
Azusa Agricultural Water Company)[2]	170.00	294.47	0.14900
	3,422.00	**10,006.20**	**5.06299**
Brierly, Susan K.[3]			
(Successor to Monrovia Nursery Company)[2]	24.00	0.00	0.00000
(Transferred to Miles R. Rosedale)[2]	-8.00		
	16.00	**0.00**	**0.00000**
California-American Water Company (Duarte System)	**1,672.00**	**3,649.00**	**1.84634**

INTEGRATED PRODUCER	DIVERSION COMPONENT ACRE-FEET	PRESCRIPTIVE PUMPING COMPONENT ACRE-FEET	PUMPING COMPONENT SHARE %
California Cities Water Company (See Southern California Water Company, San Dimas District)	--	--	--
Covina Irrigating Company	2,514.00	4,140.00	2.09478
(Successor to:			
City of Covina		1,734.00	0.87737
City of Covina		300.00	0.15179
Taylor Herb Garden		6.00	0.00304
La Verne, City of		355.71	0.17999
Davidson Optronics, Inc.		22.00	0.01113
Goedert, Lillian		7.00	0.00354
Lakin, Kelly R.		6.03	0.00305
Hunter, Lloyd F.		4.40	0.00223
Lakin, Kelly R.)[2]		3.23	0.00163
	2,514.00	**6,578.37**	**3.32855**
CV Glendora 3 Site, LLC)[3]			
(Successor to:			
Rosedale, Miles R.	184.00	0.00	0.00000
Monrovia Nursery Company)[2]	10.00	0.00	0.00000
	194.00	**0.00**	**0.00000**
DeFalco, John and Carole[3]			
(Successor to Nickowitz, at al.)[2]	1.49	0.00	0.00000
	1.49	**0.00**	**0.00000**
Glendora, City of	17.00	8,258.00	4.17842
(Successor to:			
Maechtlen, Estate of J. J.		150.00	0.07590
Maechtlen, Trust of P. A.		50.00	0.02530
Ruebhausen, Arline	18.34		
Glendora Unified High School District		99.00	0.05009
Loyola Marymount University		324.00	0.16394
Clayton Manufacturing Company)[2]		511.80	0.25896
	35.34	**9,392.80**	**4.75261**
Golden State Water Company, San Dimas District[3] (Formerly California Cities Water Company)	500.00	3,242.53	1.64067
(Successor to Namimatsu Farms)[2]		196.00	0.09917
	500.00	**3,438.53**	**1.73984**

INTEGRATED PRODUCER	DIVERSION COMPONENT ACRE-FEET	PRESCRIPTIVE PUMPING COMPONENT ACRE-FEET	PUMPING COMPONENT SHARE %
JUH#1[3]			
(Successor to Monrovia Nursery Company)[2]	48.00	0.00	0.00000
(Transferred to Miles R. Rosedale)[2]	-16.00		
	32.00	**0.00**	**0.00000**
Los Angeles, County of	**310.00**	**3,721.30**	**1.88292**
Maechtlen, Estate of J. J., Trustee for the Estate of P.A. Maechtlen	0.00	301.50	0.15256
(Transferred to:			
City of Glendora		-150.00	-0.07590
Miller Brewing Company)[2]		-151.50	-0.07666
	0.00	**0.00**	**0.00000**
Maechtlen, Trust of J. J.[3]	1.49	0.00	0.00000
(Transferred to Otting, David;	-1.49	0.00	0.00000
Otting, Larry; and Webster, Scott)[2]			
(Successor to Otting, David;	1.49	0.00	0.00000
Otting, Larry; and Webster, Scott)[2]			
(Transferred to Nikowitz, et al)[2]	-1.49	0.00	0.00000
	0.00	**0.00**	**0.00000**
Maechtlen, Trust of P. A.[3]	0.50	100.50	0.05085
(Transferred to:			
City of Glendora		-50.00	-0.02530
Alice B. Phillips, et al.)[2]	-0.50	-50.50	-0.02555
	0.00	**0.00**	**0.00000**
The Metropolitan Water District of of Southern California	**9.59**	**165.00**	**0.08349**
Monrovia, City of	1,098.00	5,042.22	2.55129
(Successor to:			
Eckis, Rollin		123.00	0.06224
City of Arcadia)[2]		951.00	0.48119
	1,098.00	**6,116.22**	**3.09472**

INTEGRATED PRODUCER	DIVERSION COMPONENT ACRE-FEET	PRESCRIPTIVE PUMPING COMPONENT ACRE-FEET	PUMPING COMPONENT SHARE %
Monrovia Nursery Company	239.50	0.00	0.00000
(Successor to Azusa Foothill	718.50	0.00	0.00000
Citrus Company)[2]			
(Transferred:			
City of Azusa	-363.00	0.00	0.00000
Brierly, Susan K.	-24.00	0.00	0.00000
Rosedale, Miles R.	-191.00	0.00	0.00000
VanLandingham, Richard	-21.00	0.00	0.00000
JUH#1	-48.00	0.00	0.00000
Rosedale, Lance	-32.00	0.00	0.00000
CV Glendora 3 Site, LLC)[2]	-10.00	0.00	0.00000
	269.00	**0.00**	**0.00000**
Nikowitz, et al[3]			
(Successor to Maechtlen, Trust of J. J.)[2]	1.49	0.00	0.00000
(Held in common with Nikowitz, Sheryl M. and Walter P.; Pellegrino, Mark and Roxanne; Verdegem, Thomas and Sandra B.)			
(Transferred to DeFalco, John and Carole)[2]	-1.49	0.00	0.00000
	0.00	**0.00**	**0.00000**
Otting, David; Otting, Larry; and Webster, Scott[3]			
(Successor to Maechtlen, Trust of J. J.)[2]	1.49	0.00	0.00000
(Transferred to Maechtlen, Trust of J. J.)[2]	-1.49	0.00	0.00000
	0.00	**0.00**	**0.00000**
Phillips, Alice B., et al.[3]			
(Successor to Maechtlen, Trust of P. A.)[2]	0.50	50.50	0.02555
(Transferred to Miller Brewing Co.)[2]		-50.00	-0.02530
	0.50	**0.50**	**0.00025**
Rosedale, Lance[3]			
(Successor to Monrovia Nursery Company)[2]	**32.00**	**0.00**	**0.00000**
Rosedale, Miles R.[3]			
(Successor to Monrovia Nursery Company)[2]	191.00	0.00	0.00000
(Transferred to CV Glendora 3 Site, LLC)[2]	-184.00	0.00	0.00000
(Successor to:			
Susan K. Brierly	8.00	0.00	0.00000
JUH#1)[2]	16.00	0.00	0.00000
	31.00	**0.00**	**0.00000**

INTEGRATED PRODUCER	DIVERSION COMPONENT ACRE-FEET	PRESCRIPTIVE PUMPING COMPONENT ACRE-FEET	PUMPING COMPONENT SHARE %
San Gabriel Valley Water Company	0.00	16,659.00	8.42920
(Successor to:			
Vallecito Water Co.		2,867.00	1.45066
No. 17 Walnut Place Mutual Water Co.		21.50	0.01088
Cedar Avenue Mutual Water Company		121.10	0.06127
Beverly Acres Mutual Water Users Association		50.00	0.02530
Richwood Mutual Water Company		192.60	0.09745
Nicholson Trust, Helene S.		12.00	0.00607
Durfee Property, LLC		50.00	0.02530
Wright, Darrell A., Wright, Merle M. and Carlson, Jeanne W.		50.65	0.02563
Parton Family Trust		46.20	0.02338
Maddock, A.G.)[2]	3.40		
	3.40	**20,070.05**	**10.15514**
VanLandingham, Richard[3]			
(Successor to Monrovia Nursery Company)[2]	**21.00**	**0.00**	**0.00000**
TOTAL	**10,526.44**	**67,868.56**	**34.34047**

1/ Permanent transfer of rights as recorded at entry of Judgment.
2/ Permanent transfer of rights after entry of Judgment.
3/ Intervenor after Judgment.

EXHIBIT "F"

TABLE SHOWING
SPECIAL CATEGORY RIGHTS

PARTY	NATURE OF RIGHT
*The Metropolitan Water District of Southern California *Transferred to the San Gabriel Valley Protective Association 05/07/1996.	Morris Reservoir Storage and Withdrawal (a) A right to divert, store and use San Gabriel River Water, pursuant to Permit No. 7174. (b) Prior and paramount right to divert 72 acre-feet annually to offset Morris Reservoir evaporation and seepage losses and to provide the water supply necessary for presently existing incidental Morris Dam facilities.
Los Angeles County Flood Control District (now Los Angeles County Department of Public Works)	Puddingstone Reservoir Prior Prescriptive right to divert water from San Dimas Wash for storage in Puddingstone Reservoir in quantities sufficient to offset annual evaporation and seepage losses of the reservoir at approximate elevation 942.

EXHIBIT "G"

TABLE SHOWING
NON-CONSUMPTIVE USERS

PARTY	NATURE OF RIGHT
Covina Irrigating Company Azusa Valley Water Company Azusa Agricultural Water Co. Azusa Foot-Hill Citrus Co. Monrovia Nursery	"Committee-of-Nine" Spreading Right To continue to divert water from the San Gabriel River pursuant to the 1888 Settlement, and to spread in spreading grounds within the Basin all water thus diverted without the right to recapture water in excess of said parties' rights as adjudicated in exhibit "E".
California-American Water Company (Duarte System)	Spreading Right To continue to divert water from the San Gabriel River pursuant to the 1888 Settlement, and to continue to divert water from Fish Canyon and to spread said waters in its spreading grounds in the Basin without the right to recapture water in excess of said party's rights as adjudicated in Exhibit "E".
City of Glendora	Spreading Right To continue to spread the water of Big and Little Dalton Washes, pursuant to License No. 2592 without the right to recapture water in excess of said party's rights as adjudicated in Exhibit "E".
San Gabriel Valley Protective Association	Spreading Right To continue to spread San Gabriel River water pursuant to License Nos. 9991 and 12,209, without the right to recapture said water.
Golden State Water Company (formerly *California Cities Water Company*)	Spreading Right To continue to spread waters from San Dimas Wash without the right to recapture water in excess of said party's rights as adjudicated in Exhibit "E".
Los Angeles County Flood Control District	Temporary storage of storm flow for regulatory purposes; Spreading and conservation for general benefit in streambeds, reservoirs and spreading grounds without the right to recapture said water. Maintenance and operation of dams and other flood control works.

EXHIBIT "H"

WATERMASTER OPERATING CRITERIA

1. **Basin Storage Capacity.** The highest water level at the end of a water year during the past 40 years was reached at the Key Well on September 30, 1944 (elevation 316). The State of California, Department of Water Resources, estimates that as of that date, the quantity of fresh water in storage in the Basin was approximately 8,600,000 acre-feet. It is also estimated by said Department that by September 30, 1960, the quantity of fresh water in storage had decreased to approximately 7,900,000 acre-feet (elevation 237 at the Key Well).

The lowest water level at the end of a water year during the past 40 years was reached at the Key Well on September 30, 1965 (elevation 209). It is estimated that the quantity of fresh water in storage in the Basin on that date was approximately 7,700,000 acre-feet.

Thus, the maximum utilization of Basin storage was approximately 900,000 acre-feet, occurring between September 30, 1944, and September 30, 1965 (between elevations 316 and 209 at the Key Well). This is not to say that more than 900,000 acre-feet of storage space below the September 30, 1944 water levels cannot be utilized. However, it demonstrates that pumpers have deepened their wells and lowered their pumps so that such 900,000 acre-feet of storage can be safely and economically utilized.

The storage capacity of the Basin between elevations of 200 and 250 at the Key Well represents a usable volume of approximately 400,000 acre-feet of water.

2. **Operating Safe Yield and Spreading.** Watermaster in determining Operating Safe Yield and the importation of Replacement Water shall be guided by water level elevations in the Basin. He shall give recognition to, and base his operations on, the following general objectives insofar as practicable and subject to Section 47 of the Judgment (Amended 6/21/12):

(a) The replenishment of ground water from sources of supplemental water should not cause excessively high levels of ground water and such replenishment should not cause undue waste of local water supplies.

(b) Certain areas within the Basin are not at the present time capable of being recharged with supplemental water. Efforts should be made to provide protection to such areas from excessive ground water lowering either through the "in lieu" provisions of the

Judgment or by other means.

(c) Watermaster shall consider and evaluate the long-term consequences on ground water quality, as well as quantity, in determining and establishing Operating Safe Yield. Recognition shall be given to the enhancement of ground water quality insofar as practicable, especially in the area immediately upstream of Whittier Narrows where degradation of water quality may occur when water levels at the Key Well are maintained at or below elevation 200.

(d) Watermaster shall take into consideration the comparative costs of supplemental and Make-up Water in determining the savings on a present value basis of temporary or permanent lowering or raising of water levels and other economic data and analyses indicating both the short-term and long-term propriety of adjusting Operating Safe Yield in order to derive optimum water levels during any period. Watermaster shall utilize the provisions in the Long Beach Judgment which will result in the least cost of delivering Make-up Water.

3. **Replacement Water -- Sources and Recharge Criteria.** The following criteria shall control purchase of Replacement Water and Recharge of the Basin by Watermaster.

(a) **Responsible Agency From Which to Purchase.** Watermaster, in determining the Responsible Agency from which to purchase supplemental water for replacement purposes, shall be governed by the following:

(1) **Place of Use of Water** which is used primarily within the Basin or by cities within San Gabriel District in areas within or outside the Basin shall control in determining the Responsible Agency. For purposes of this subparagraph, water supplied through a municipal water system which lies chiefly within the Basin shall be deemed entirely used within the Basin; and

(2) **Place of production of water** shall control in determining the Responsible Agency as to water exported from the Basin, except as to use within San Gabriel District.

Any Responsible Agency may, at the request of Watermaster, waive its right to act as the source for such supplemental water, in which case Watermaster shall be free to purchase such water from the

remaining Responsible Agencies which are the most beneficial and appropriate sources; provided, however, that a Responsible Agency shall not authorize any sale of water in violation of the California Constitution.

(b) **Water Quality.** Watermaster shall purchase the best quality of supplemental water available for replenishment of the Basin, pursuant to subsection (a) hereof.

(c) **Reclaimed Water.** It is recognized that the technology and economic and physical necessity for utilization of reclaimed water is increasing. The purchase of reclaimed water in accordance with the Long Beach Judgment to satisfy the Make-up Obligation is expressly authorized. At the same time, water quality problems involved in the reuse of water within the Basin pose serious questions of increased costs and other problems to the pumpers, their customers and all water users. Accordingly, Watermaster is authorized to gather information, make and review studies, and make recommendations on the feasibility of the use of reclaimed water for replacement purposes; provided that no reclaimed water shall be recharged in the Basin by Watermaster without the prior approval of the court, after notice to all parties and hearing thereon.

(d) **Purchased Water Plan.** On or before November 1 of each year, Watermaster shall prepare and distribute to the Responsible Agencies a three-year projection of its Supplemental Water purchases from each agency. Watermaster shall, to the extent feasible, coordinate the tentative schedule for delivery and payment of those purchases with each agency. (Amended 6/21/12)

4. **Replacement Assessment Rates.** The Replacement Assessment rates may be in an amount calculated to allow Watermaster to purchase more than one acre-foot of Supplemental Water for each acre-foot of excess Production to which such Assessment applies, when such purchases are prudent in order to secure necessary Supplemental Water supplies for the benefit of the Basin and parties. In accordance with Rules and Regulations adopted by Watermaster, to the extent Watermaster purchases more than one acre-foot of Supplemental Water for each acre-foot of excess Production to which such Assessment applies, a credit shall be issued to the affected Producers at the time such excess water is purchased. (Amended 6/21/12)

EXHIBIT "J"

PUENTE NARROWS AGREEMENT

THIS AGREEMENT is made and entered into as of the 8th day of May, 1972, by and between PUENTE BASIN WATER AGENCY, herein called "Puente Agency", and UPPER SAN GABRIEL VALLEY MUNICIPAL WATER DISTRICT, herein called "Upper District".

A. RECITALS

1. Puente Agency. Puente Agency is a joint powers agency composed of Walnut Valley Water District, herein called "Walnut District", and Rowland Area County Water District, herein called "Rowland District". Puente Agency is formed for the purpose of developing and implementing a ground water basin management program for Puente Basin. Pursuant to said purpose, said Agency is acting as a representative of its member districts and of the water users and water right claimants therein in the defense and maintenance of their water rights within Puente Basin.

2. Upper District. Upper District is a municipal water district overlying a major portion of the Main San Gabriel Basin. Upper District is plaintiff in the San Gabriel Basin Case, wherein it seeks to adjudicate rights and implement a basin management plan for the Main San Gabriel Basin.

3. Puente Basin is a ground water basin tributary to the Main San Gabriel Basin. Said area was included within the scope of the San Gabriel Basin Case and substantially

all water rights claimants within Puente Basin were joined as defendants therein. The surface contribution to the Main San Gabriel Basin from Puente Basin is by way of the paved flood control channel of San Jose Creek, which passes through Puente Basin from the Pomona Valley area. Subsurface outflow is relatively limited and moves from the Puente Basin to the Main San Gabriel Basin through Puente Narrows.

4. Intent of Agreement. Puente Agency is prepared to assure Upper District that no activity within Puente Basin will hereafter be undertaken which will (1) interfere with surface flows in San Jose Creek, or (2) impair the subsurface flow from Puente Basin to the Main San Gabriel Basin. Walnut District and Rowland District, by operation of law and by express assumption endorsed hereon, assume the covenants of this agreement as a joint and several obligation. Based upon such assurances and the covenants hereinafter contained in support thereof, Upper District consents to the dismissal of all Puente Basin parties from the San Gabriel Basin Case. By reason of said dismissals, Puente Agency will be free to formulate a separate water management program for Puente Basin.

B. DEFINITIONS AND EXHIBITS

5. Definitions. As used in this Agreement, the following terms shall have the meanings herein set forth:

(a) Annual or Year refers to the fiscal year July 1 through June 30.

(b) Base Underflow. The underflow through

Puente Narrows which Puente Agency agrees to maintain, and on which accrued debits and credits shall be calculated.

(c) Make-up Payment. Make-up payments shall be an amount of money payable to the Watermaster appointed in the San Gabriel Basin Case, sufficient to allow said Watermaster to purchase replacement water on account of any accumulated deficit as provided in Paragraph 9 hereof.

(d) Puente Narrows. The subsurface geologic constriction at the downstream boundary of Puente Basin, located as shown on Appendix "B".

(e) Main San Gabriel Basin, the ground water basin shown and defined as such in Exhibit "A" to the Judgment in the San Gabriel Basin Case.

(f) San Gabriel Basin Case. Upper San Gabriel Valley Municipal Water District v. City of Alhambra, et al., L. A. Sup. Ct. No. 924128, filed January 2, 1968.

6. Appendices. Attached hereto and by this reference made a part hereof are the following appendices:

"A" -- Location Map of Puente Basin, showing major geographic, geologic, and hydrologic features.

"B" -- Map of Cross-Section Through Puente Narrows, showing major physical features and location of key wells.

"C" -- Engineering Criteria, being a description of a method of measurement of subsurface outflow to be utilized for Watermaster purposes.

C. COVENANTS

7. Watermaster. There is hereby created a two member Watermaster service to which each of the parties to this agreement shall select one consulting engineer. The respective representatives on said Watermaster shall serve at the pleasure of the governing body of each appointing party and each party shall bear its own Watermaster expense.

a. Organization. Watermaster shall perform the duties specified herein on an informal basis, by unanimous agreement. In the event the two representatives are unable to agree upon any finding or decision, they shall select a third member to act, pursuant to the applicable laws of the State of California. Thereafter, until said issue is resolved, said three shall sit formally as a board of arbitration. Upon resolution of the issue in dispute, the third member shall cease to function further.

b. Availability of Information. Each party hereto shall, for itself and its residents and water users, use its best efforts to furnish all appropriate information to the Watermaster in order that the required determination can be made.

c. Cooperation With Other Watermasters. Watermaster hereunder shall cooperate and coordinate activities with the Watermasters appointed in the San Gabriel Basin Case and in Long Beach v. San Gabriel Valley Water Company, et al.

d. Determination of Underflow. Watermaster shall annually determine the amount of underflow from Puente Basin to the San Gabriel Basin, pursuant to Engineering Criteria.

e. Perpetual Accounting. Watermaster shall maintain a perpetual account of accumulated base underflow, accumulated subsurface flow, any deficiencies by reason of interference with surface flows, and the offsetting credit for any make-up payments. Said account shall annually show the accumulated credit or debit in the obligation of Puente Agency to Upper District.

f. Report. Watermaster findings shall be incorporated in a brief written report to be filed with the parties and with the Watermaster in the San Gabriel Basin Case. Said report shall contain a statement of the perpetual account heretofore specified.

8. Base Underflow. On the basis of a study and review of historic underflow from Puente Basin to the Main San Gabriel Basin, adjusted for the effect of the paved flood control channel and other relevant considerations, it is

mutually agreed by the parties that the base underflow is and shall be 580 acre feet per year, calculated pursuant to Engineering Criteria.

9. Puente Agency's Obligation. Puente Agency covenants, agrees and assumes the following obligation hereunder:

a. Noninterference with Surface Flow. Neither Puente Agency nor any persons or entities within the corporate boundaries of Walnut District or Rowland District will divert or otherwise interfere with or utilize natural surface runoff now or hereafter flowing in the storm channel of San Jose Creek; provided, however, that this covenant shall not prevent the use, under Watermaster supervision, of said storm channel by the Puente Agency or Walnut District or Rowland District for transmission within Puente Agency of supplemental or reclaimed water owned by said entities and introduced into said channel solely for transmission purposes. In the event any unauthorized use of surface flow in said channel is made contrary to the covenant herein provided, Puente Agency shall compensate Upper District by utilizing any accumulated credit or by make-up payment in the same manner as is provided for deficiencies in subsurface outflow from Puente Basin.

b. Subsurface Outflow. To the extent that

the accumulated subsurface outflow falls below the accumulated base underflow and the result thereof is an accumulated deficit in the Watermaster's annual accounting, Puente Agency agrees to provide make-up payments during the next year in an amount not less than one-third of the accumulated deficit.

c. Purchase of Reclaimed Water. To the extent that Puente Agency or Walnut District or Rowland District may hereafter purchase reclaimed water from the facilities of Sanitation District 21 of Los Angeles County, such purchaser shall use its best efforts to obtain waters originating within San Gabriel River Watershed.

10. Puente Basin Parties Dismissal. In consideration of the assumption of the obligation hereinabove provided by Puente Agency, Upper District consents to entry of dismissals as to all Puente Basin parties in San Gabriel Basin Case. This agreement shall be submitted for specific approval by the Court and a finding that it shall operate as full satisfaction of any and all claims by the parties within Main San Gabriel Basin against Puente Basin parties by reason of historic surface and subsurface flow.

Exhibit "J"

IN WITNESS WHEREOF the parties hereto have caused this Agreement to be executed as of the day and date first above written.

Approved as to form:
CLAYSON, STARK, ROTHROCK & MANN

By _____
Attorneys for Puente Agency

PUENTE BASIN AGENCY

By _____
EDMOND M. BIEDERMAN
President

Approved as to form:

By _____
Attorney for Upper District

UPPER SAN GABRIEL VALLEY MUNICIPAL WATER DISTRICT

By _____
Howard H. Hawkins
President

The foregoing agreement is approved and accepted, and the same is acknowledged as the joint and several obligation of the undersigned.

Approved as to form:

_____
Attorney for Walnut District

WALNUT VALLEY WATER DISTRICT

By _____
P. BOURDET
Vice President

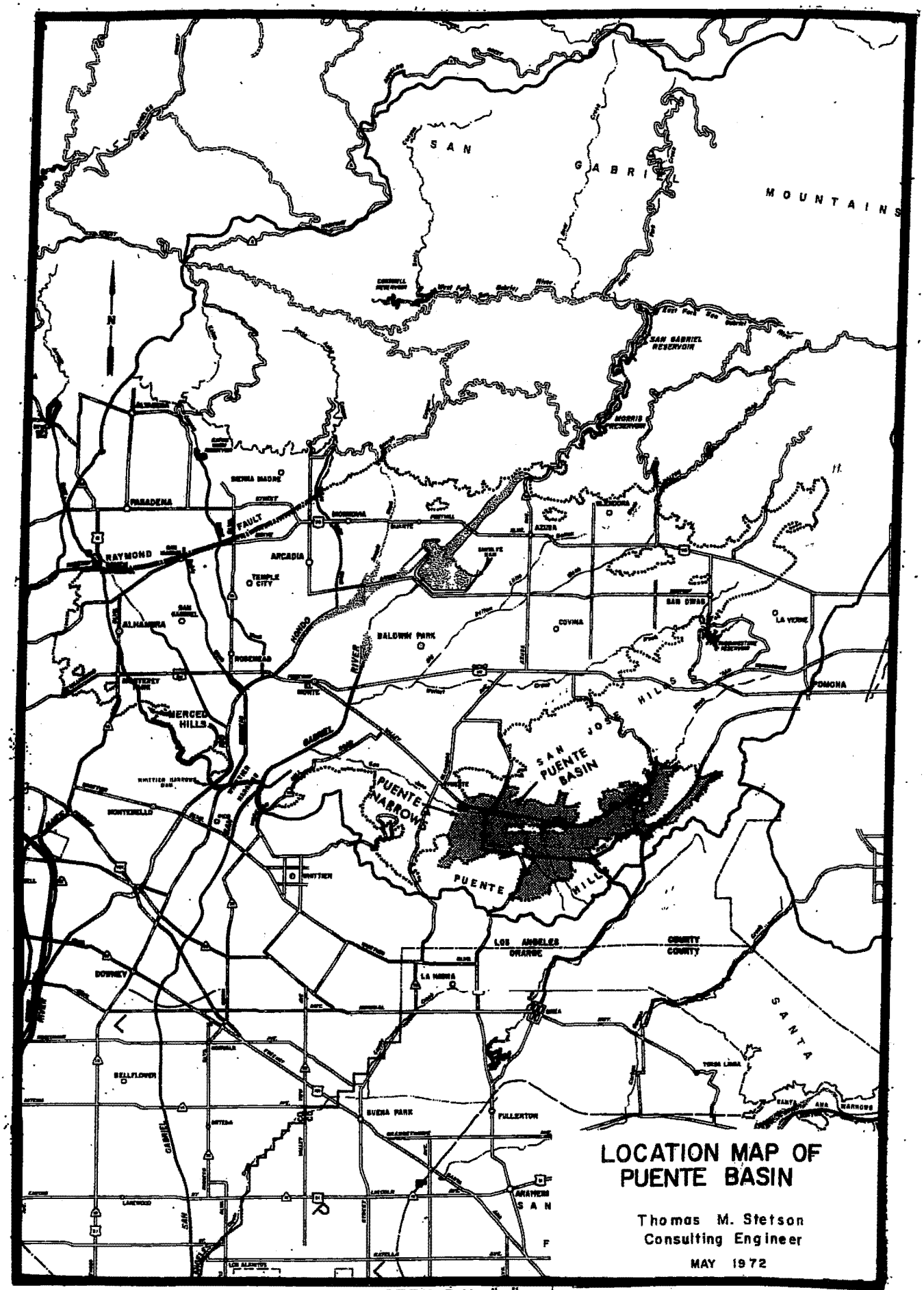
Approved as to form:

_____
Attorneys for Rowland District

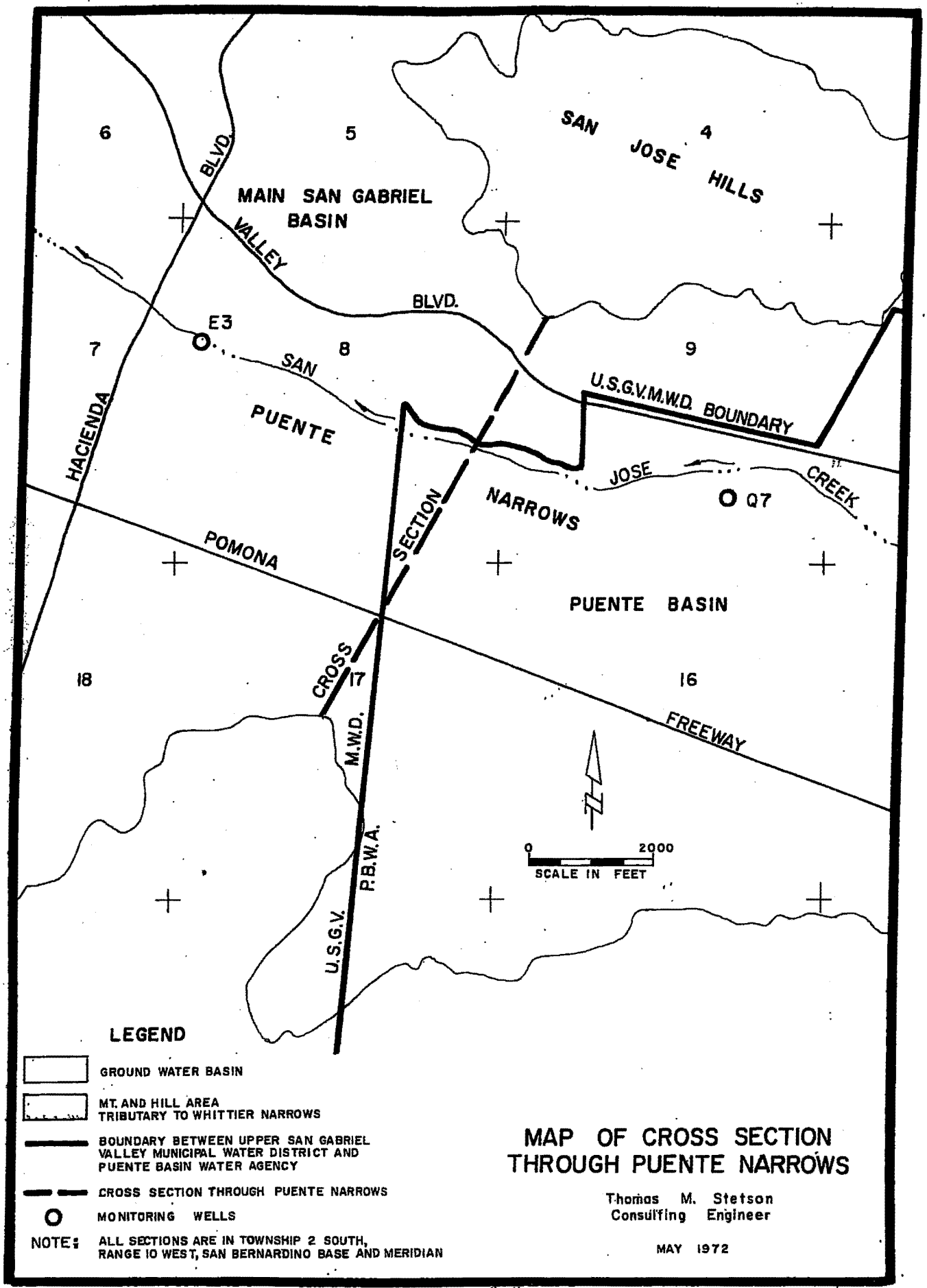
ROWLAND AREA COUNTY WATER DISTRICT

By _____
President
Wm. A. Simmons

Exhibit "J"



APPENDIX "A"
EXHIBIT "J"



MAP OF CROSS SECTION THROUGH PUENTE NARROWS

Thomas M. Stetson
Consulting Engineer

MAY 1972

APPENDIX "B"
EXHIBIT "J"

ENGINEERING CRITERIA

APPENDIX "C"

1. Monitoring Wells. The wells designated as State Wells No. 2S/10W-9Q7 and 2S/10W-8E3 and Los Angeles County Flood Control District Nos. 3079M and 3048B, respectively, shall be used to measure applicable ground water elevations. In the event either monitoring well should fail or become unrepresentative, a substitute well shall be selected or drilled by Watermaster. The cost of drilling a replacement well shall be the obligation of the Puente Agency.

2. Measurement. Each monitoring well shall be measured and the ground water elevation determined semi-annually on or about April 1 and October 1 of each year. Prior to each measurement, the pump shall be turned off for a sufficient period to insure that the water table has recovered to a static or near equilibrium condition.

3. Hydraulic Gradient. The hydraulic gradient, or slope of the water surface through Puente Narrows, shall be calculated between the monitoring wells as the difference in water surface elevation divided by the distance, approximately 9,000 feet, between the wells. The hydraulic gradient shall be determined for the spring and fall and the average hydraulic gradient calculated for the year.

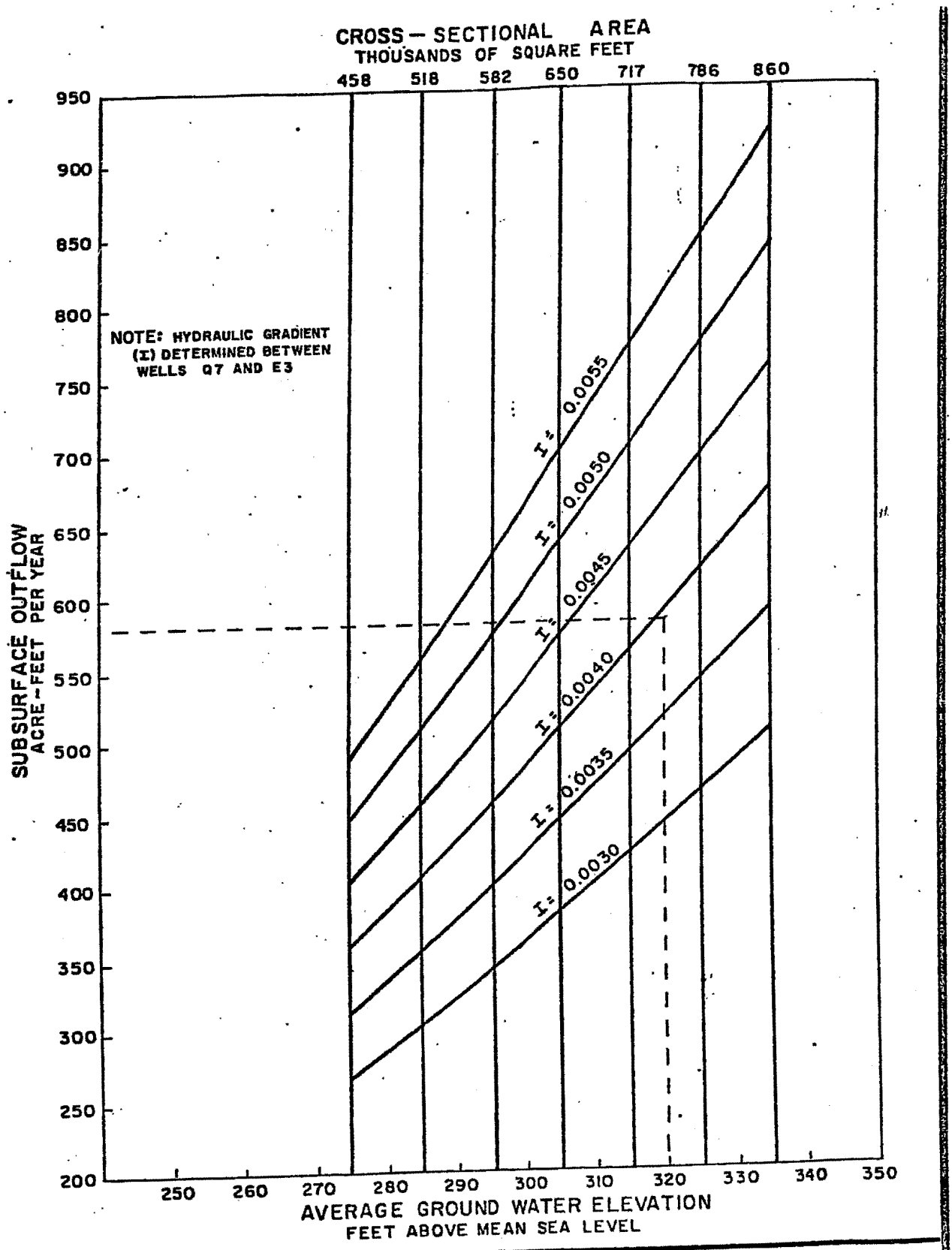
4. Ground Water Elevation at Puente Narrows Cross Section. The ground water elevation at the Puente Narrows

cross section midway between the monitoring wells shall be the average of the ground water elevation at the two wells. This shall be determined for the spring and fall and the average annual ground water elevation calculated for the year.

5. Determination of Underflow. The chart attached is a photo-reduction of a full scale chart on file with the Watermaster. By applying the appropriate average annual hydraulic gradient (I) to the average annual ground water elevation at the Puente Narrows cross section (involving the appropriate cross-sectional area [A]), it is possible to read on the vertical scale the annual acre feet of underflow.

APPENDIX "C"

Exhibit "J"



RELATIONSHIP OF AVERAGE GROUND WATER ELEVATION AT PUENTE NARROWS AND APPLICABLE CROSS-SECTIONAL AREA WITH SUBSURFACE OUTFLOW THROUGH PUENTE NARROWS FOR VARIOUS HYDRAULIC GRADIENTS

Thomas M. Stetson
Consulting Engineer
MAY 1972

EXHIBIT "J"

EXHIBIT "K"

OVERLYING RIGHTS

I. NATURE OF OVERLYING RIGHT

An "Overlying Right" is the right to Produce water from the Main San Gabriel Basin for use on the overlying lands hereinafter described. Such rights are exercisable without quantitative limit only on said overlying land and cannot be separately conveyed or transferred apart therefrom. The exerciser of such right is assessable by Watermaster as provided in Paragraph 21 of the Amended Judgment herein (prior Paragraph 14.5 of the Judgment herein) and is subject to the other provisions of said Paragraph.

II. OVERLYING LANDS (Description)

The overlying lands to which Overlying Rights are appurtenant are described as follows:

> "Those portions of Lots 1 and 2 of the lands formerly owned by W.A. Church, in the Rancho San Francisquito, in the City of Irwindale, County of Los Angeles, State of California, as shown on recorder's filed map No. 509, in the office of the County Recorder of said County, lying northeasterly of the northeasterly line and its southeasterly prolongation of Tract 1888, as shown on map recorded in Book 21 page 183 of Maps, in the office of the County Recorder of said County.
>
> "EXCEPT the portions thereof lying northerly and northwesterly of the center line of Arrow Highway described 'Sixth' and the center line of Live Oak Avenue described 'Third' in a final decree of condemnation, a certified copy of which was recorded August 18, 1933 as Instrument No. 354, in Book 12289, Page 277, Official Records.
>
> "ALSO EXCEPT that portion of said land described in the final decree of condemnation entered in Los Angeles County Superior Court Case No. 805008, a certified copy of which was recorded September 21, 1964, as Instrument No. 3730 in Book D-2634, Page 648, Official Records."

III. PRODUCERS ENTITLED TO EXERCISE OVERLYING RIGHTS AND THEIR RESPECTIVE CONSUMPTIVE USE PORTIONS

The persons entitled to exercise Overlying Rights are both the owners of Overlying Rights and persons and entities licensed by such owners to exercise such Overlying Rights. The persons entitled to exercise Overlying Rights and their respective Consumptive Use portions are as follows:

OWNER PRODUCERS	**CONSUMPTIVE USE PORTION**
BROOKS GIFFORD, SR. BROOKS GIFFORD, JR. PAUL MNOIAN JOHN MGRDICHIAN J. EARL GARRETT	3.5 acre-feet per year
Present User: Nu-Way Industries	

PRODUCERS UNDER LICENSE

A.	WILLIAM C. THOMAS and EVELYN F. THOMAS, husband and wife, and MALCOLM K. GATHERER and JACQUELINE GATHERER, husband and wife, doing business by and through B & B REDI-I-MIX CONCRETE, INC., a corporation	45.6 acre-feet per year
B.	PRE-STRESS CRANE RIGGING & TRUCK CO., INC., a corporation	1.0 acre-foot per year
	Present Users: Pre-Stress Crane Rigging & Truck Co., Inc., a corporation	
	TOTAL	50.1 acre-feet per year

IV. ANNUAL GROSS AMOUNT OF PRODUCTION FROM WHICH CONSUMPTIVE USE PORTIONS WERE DERIVED 183.65 acre-feet

EXHIBIT "K"

CONSUMPTIVE USE PORTIONS OF PRODUCERS WITH OVERLYING RIGHTS AS OF JUNE 30, 2013

OVERLYING PRODUCER	CONSUMPTIVE USE PORTION (ACRE-FEET)
1. Mnoian-Gifford Interests	
Owner Producers	
Paul Mnoian[3]	
Brooks Gifford, Sr.[3]	
Brooks Gifford, Jr.[3]	
John Mgrdichian[3]	
J. Earl Garrett[3]	
Present User: Nu-Way Industries	**3.5**
Producers Under License	
William C. Thomas[3]	
Evelyn F. Thomas[3]	
Malcolm K. Gatherer[3]	
Jacqueline Gatherer[3]	
Present User: B & B Red-I-Mix Concrete, Inc.	45.6
Pre-Stress Crane Rigging and Truck, Co., Inc.[3]	1.0
	50.1
2. Attalla, Phillip Y. and Mary L.[3]	**29.9**
3. Citrus Valley Medical Center, Queen of the Valley Campus.[3] (Formerly Queen of the Valley Hospital.[3])	**4.5**
4. S.L.S & N. Inc.[3]	--
TOTAL	**84.5**

1/ Permanent transfer of rights as recorded within Exhibits "C", "D", and "E" of Judgment.

2/ Permanent transfer of rights after entry of Judgment.

3/ Intervenor after Judgment.

EXHIBIT "L"

LIST OF PRODUCERS AND THEIR DESIGNEES
June 21, 2012

PRODUCER	DESIGNEE
Adams Ranch Mutual Water Company	Domenic T. Cimarusti
Alhambra, City of	Mary Chavez
Amarillo Mutual Water Company	John Holzinger
Anderson Family Marital Trust	Carolyn Heinrich
Andrade, Susan	Susan Andrade
Aqua Capital Management LP	David L. Penrice
Arcadia, City of	Tom Tait
Azusa, City of	Chet Anderson
Azusa Agricultural Water Company	Chet Anderson
Azusa Valley Water Company	Chet Anderson
Bandel Family Trust	Candace Garnier Bandel
Banks, Gale C. and Vicki L.	Gale and Vicki Banks
Brezina Trust 2001, Raymond W. and Susan W.	Raymond W. Brezina
Brierly, Susan K.	Reiner Kruger
Brondino, Jeanne	Jeanne Brondino
Cadway, Inc.	James M. Byerrum
California-American Water Company (Duarte System)	Todd Brown
California-American Water Company (San Marino System)	Todd Brown
California Domestic Water Company	James M. Byerrum
Canyon Water Company	William McIntyre
Canyon Water & Development Corporation	Chet Anderson
Champion Mutual Water Company	Bryan P. Hellein
Chevron U.S.A.	Leon F. Drozd, Esq.
Citrus Valley Medical Center, Queen of the Valley Campus	Gregory J. Landers
Coiner, James W., dba Coiner Nursery	James W. Coiner
County Sanitation District No. 18	Raymond Tremblay
Covina, City of	Daryl Parrish
Covina Irrigating Company	David D. De Jesus
Crevolin, A. J.	A. J. Crevolin
CV Glendora 3 Site, LLC	Bill McReynolds
Dawes, Mary Kay	Mary Kay Partridge
DeFalco, John and Carole	John and Carole DeFalco
Del Rio Mutual Water Company	Dario Herrera
Driftwood Dairy	David Trenkenschuh

PRODUCER	DESIGNEE
East Pasadena Water Company	Lawrence M. Morales
El Monte, City of	Rene Bobadilla
El Monte Cemetery Association	Todd Brown
Fox Family Trust Michael Edward Fox and Crystal Marie Fox, Trustees	Michael and Crystal Fox
Garnier Family Trust, Anton C. and Anita	Anton C. and Anita Garnier
Garnier, Ruth Elaine Ailor Trust	Renee Garnier Poivre
Gates, James Richard	James Richard Gates
Glendora, City of	Steve Patton
Golden State Water Company - San Dimas District	Patrick Scanlon
Golden State Water Company - San Gabriel Valley District	Benjamin Lewis, Jr.
Green, Walter	Dr. Walter Green
Hanson Aggregates West, Inc.	Michael Rogers
Heinrich, Carolyn	Carolyn Heinrich
Hemlock Mutual Water Company	Robert McClung
Industry Waterworks Systems, City of	Gregory B. Galindo
Irwindale, City of	Sol Benudiz
JUH #1	Reiner Kruger
Kirklen, Jeffery B.	Jeffery B. Kirklen
Knight, William J.	William J. Knight
Landeros, John	John Landeros
La Puente Valley County Water District	Gregory B. Galindo
Lovelady, June G., Trustee	June G. Lovelady
Los Angeles, County of	Robert Maycumber
Loucks, David	David Loucks
Maddock, A.G.	S. Joellen Maddock
Maggiore, Valarie	Valarie Maggiore
McIntyre, William	William McIntyre
Metropolitan Water District of Southern California	Lorraine Aoys
Miller Coors LLC	Jeffrey D. Arbour
Monrovia, City of	Ron Bow
Monrovia Nursery	Reiner Kruger
Monterey Park, City of	Elias Saykali
Munoz, Ralph	Ralph Munoz
Nicholson Trust, The	M. L. Whitehead
Nicholson Family Trust, The	M. L. Whitehead

PRODUCER	DESIGNEE
Parton Family Trust	Vernal O. and Marverna Parton
Pellissier Irrevocable QTIP Trust, et al, Laurence R., Co-tenancy of	James M. Byerrum
Pico County Water District	Mark Grajeda
Polopolus, et. Al	Helen Gaskins
Rados Brothers	Alexander S. Rados
Rosedale, Lance	Reiner Kruger
Rosedale, Miles R.	Reiner Kruger
Rosemead Development LTD.	John W. Lloyd
Rurban Homes Mutual Water Company	George W. Bucey
Ruth, Roy	Roy Ruth
San Gabriel Country Club	Eddie Villanueva
San Gabriel County Water District	Barbara A. Carrera
San Gabriel Valley Municipal Water District	Darin Kasamoto
San Gabriel Valley Water Company	Michael L. Whitehead
Sierra La Verne Country Club	Donald Johnson
Sierra Madre, City of	Bruce Inman
Sonoco Products Company	Khaleda Hamid
South Pasadena, City of	Marcelino Aguilar
Southern California Edison Company	Jorge A. Rosa, Jr.
Southwest Water Company	Richard J. Rich
Sterling Mutual Water Company	Joy Ann Burt
Suburban Water Systems	Michael Quinn
Sunny Slope Water Company	Ken Tcheng
Tate, Phillip G. and Sieglinde A.	Phillip Tate
Three Valleys Municipal Water District	Richard W. Hansen
Tomovich, Nick and Sons	Nick Tomovich
Hieu Tran	Hieu Tran
Tyler Nursery	Fumiko Kishi
USA Waste of California, Inc.	Joseph J. Cassin
United Rock Products Corporation	Russ Caruso
Upper San Gabriel Valley Municipal Water District	Steven P. O'Neill
Valencia Heights Water Company	P. David Michalko
Valley County Water District	Lynda A. Noriega
Valley View Mutual Water Company	Sukie Madrid
VanLandingham, Richard	Reiner Kruger
Vietnamese American Buddhist Temple Congregation	Thích Viên Ly
Vulcan Materials Company	Robert W. Bowcock

PRODUCER	DESIGNEE
Whittier, City of	Daniel Wall
Wilmott, Erma M.	Erma M. Wilmott
Woodland, Richard	Richard J. Woodland
Workman Mill Investment Company	Bruce A. Lazenby

EXHIBIT "M"

WATERMASTER MEMBERS

FOR CALENDAR YEAR 1973

ROBERT T. BALCH (Producer Member), Chairman
LINN E. MAGOFFIN (Producer Member), Vice Chairman
RICHARD L. ROWLAND (Producer Member), Secretary
BOYD KERN (Public Member), Treasurer
WALKER HANNON (Producer Member)
HOWARD H. HAWKINS (Public Member)
M.E. MOSLEY (Producer Member)
CONRAD T. REIBOLD (Public Member)
HARRY C. WILLS (Producer Member)

STAFF

Carl Fossette, Assistant Secretary-Assistant Treasurer
Ralph B. Helm, Attorney
Thomas M. Stetson, Engineer

FOR CALENDAR YEAR 1974

ROBERT T. BALCH (Producer Member), Chairman
LINN E. MAGOFFIN (Producer Member), Vice Chairman
RICHARD L. ROWLAND (Producer Member), Secretary
BOYD KERN (Public Member), Treasurer
WALKER HANNON (Producer Member)
BURTON E. JONES (Public Member)
M.E. MOSLEY (Producer Member)
CONRAD T. REIBOLD (Public Member)
HARRY C. WILLS (Producer Member)

STAFF

Carl Fossette, Assistant Secretary-Assistant Treasurer
Ralph B. Helm, Attorney
Thomas M. Stetson, Engineer

FOR CALENDAR YEAR 1975

ROBERT T. BALCH (Producer Member), Chairman

LINN E. MAGOFFIN (Producer Member), Vice Chairman

HARRY C. WILLS (Producer Member), Secretary

BOYD KERN (Public Member), Treasurer

WALKER HANNON (Producer Member)

BURTON E. JONES (Public Member)

D.J. LAUGHLIN (Producer Member)

M.E. MOSLEY (Producer Member)

CONRAD T. REIBOLD (Public Member)

STAFF

Carl Fossette, Assistant Secretary-Assistant Treasurer
Ralph B. Helm, Attorney
Thomas M. Stetson, Engineer

FOR CALENDAR YEAR 1976

ROBERT T. BALCH (Producer Member), Chairman

LINN E. MAGOFFIN (Producer Member), Vice Chairman

HARRY C. WILLS (Producer Member), Secretary

BOYD KERN (Public Member), Treasurer

WALKER HANNON (Producer Member)

BURTON E. JONES (Public Member)

D.J. LAUGHLIN (Producer Member)

M.E. MOSLEY (Producer Member)

CONRAD T. REIBOLD (Public Member)

STAFF

Jane M. Bray, Assistant Secretary-Assistant Treasurer
Ralph B. Helm, Attorney
Thomas M. Stetson, Engineer

FOR CALENDAR YEAR 1977

ROBERT T. BALCH (Producer Member), Chairman

LINN E. MAGOFFIN (Producer Member), Vice Chairman

HARRY C. WILLS (Producer Member), Secretary

CONRAD T. REIBOLD (Public Member), Treasurer

WALKER HANNON (Producer Member)

BURTON E. JONES (Public Member)

BOYD KERN (Public Member)

D.J. LAUGHLIN (Producer Member)

R.H. NICHOLSON, JR. (Producer Member)

STAFF

Jane M. Bray, Assistant Secretary-Assistant Treasurer
Ralph B. Helm, Attorney
Thomas M. Stetson, Engineer

FOR CALENDAR YEAR 1978

ROBERT T. BALCH (Producer Member), Chairman

LINN E. MAGOFFIN (Producer Member), Vice Chairman

D.J. LAUGHLIN (Producer Member), Secretary

CONRAD T. REIBOLD (Public Member), Treasurer

WALKER HANNON (Producer Member)

BURTON E. JONES (Public Member)

L.E. MOELLER (Producer Member)

R.H. NICHOLSON, JR. (Producer Member)

WILLIAM M. WHITESIDE (Public Member)

STAFF

Jane M. Bray, Assistant Secretary-Assistant Treasurer
Ralph B. Helm, Attorney
Thomas M. Stetson, Engineer

FOR CALENDAR YEAR 1979

LINN E. MAGOFFIN (Producer Member), Chairman

R.H. NICHOLSON, JR. (Producer Member), Vice Chairman

WILLIAM M. WHITESIDE (Public Member), Secretary

CONRAD T. REIBOLD (Public Member), Treasurer

ROBERT T. BALCH (Producer Member)

ROBERT G. BERLIEN (Producer Member)*

ANTON C. GARNIER (Producer Member)

D.J. LAUGHLIN (Producer Member)**

TRAVIS L. MANNING (Public Member)

L.E. MOELLER (Producer Member)

STAFF

Jane M. Bray, Assistant Secretary-Assistant Treasurer
Ralph B. Helm, Attorney
Thomas M. Stetson, Engineer

* Elected March 1979 to replace D.J. Laughlin, following his resignation.
** Resigned from Watermaster in February 1979.

FOR CALENDAR YEAR 1980

LINN E. MAGOFFIN (Producer Member), Chairman

R.H. NICHOLSON, JR. (Producer Member), Vice Chairman

WILLIAM M. WHITESIDE (Public Member), Secretary

CONRAD T. REIBOLD (Public Member), Treasurer

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ALFRED F. WITTIG (Public Member)

STAFF

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FOR CALENDAR YEAR 1984

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STAFF

Jane M. Bray, Assistant Secretary-Assistant Treasurer
Ralph B. Helm, Attorney
Thomas M. Stetson, Engineer

FOR CALENDAR YEAR 1985

LINN E. MAGOFFIN (Producer Member), Chairman

R.H. NICHOLSON, JR. (Producer Member), Vice Chairman

ROBERT G. BERLIEN (Producer Member), Secretary

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Thomas M. Stetson, Engineer

FOR CALENDAR YEAR 1986

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R.H. NICHOLSON, JR. (Producer Member), Vice Chairman

ROBERT G. BERLIEN (Producer Member), Secretary

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L.E. MOELLER (Producer Member)

REGINALD A. STONE (Producer Member)

ALFRED F. WITTIG (Public Member)

STAFF

Jane M. Bray, Assistant Secretary-Assistant Treasurer
Ralph B. Helm, Attorney
Thomas M. Stetson, Engineer

FOR CALENDAR YEAR 1987

LINN E. MAGOFFIN (Producer Member), Chairman

REGINALD A. STONE (Producer Member), Vice Chairman

L.E. MOELLER (Producer Member), Secretary

ALFRED F. WITTIG (Public Member), Treasurer

ROBERT T. BALCH (Producer Member)

GERALD J. BLACK (Producer Member)

DONALD F. CLARK (Public Member)

EDWARD R. HECK (Producer Member)

JOHN E. MAULDING (Public Member)

STAFF

Robert G. Berlien, Assistant Secretary-Assistant Treasurer
Ralph B. Helm, Attorney
Thomas M. Stetson, Engineer

FOR CALENDAR YEAR 1988

LINN E. MAGOFFIN (Producer Member), Chairman

REGINALD A. STONE (Producer Member), Vice Chairman

L.E. MOELLER (Producer Member), Secretary

ALFRED F. WITTIG (Public Member), Treasurer

ROBERT T. BALCH (Producer Member)

GERALD J. BLACK (Producer Member)

DONALD F. CLARK (Public Member)

EDWARD R. HECK (Producer Member)

JOHN E. MAULDING (Public Member)

STAFF

Robert G. Berlien, Assistant Secretary-Assistant Treasurer
Ralph B. Helm, Attorney
Thomas M. Stetson, Engineer

FOR CALENDAR YEAR 1989

LINN E. MAGOFFIN (Producer Member), Chairman

REGINALD A. STONE (Producer Member), Vice Chairman

GERALD J. BLACK (Producer Member), Secretary

ALFRED F. WITTIG (Public Member), Treasurer

ROBERT T. BALCH (Producer Member)*

DONALD F. CLARK (Public Member)

EDWARD R. HECK (Producer Member)

BURTON E. JONES (Public Member)

NELS PALM (Producer Member)**

THOMAS E. SHOLLENBERGER (Producer Member)

STAFF

Robert G. Berlien, Assistant Secretary-Assistant Treasurer
Ralph B. Helm, Attorney
Thomas M. Stetson, Engineer

* DECEASED APRIL 25, 1989

** Appointed August 24, 1989, for the balance of the calendar year term, to replace deceased member, Robert T. Balch.

FOR CALENDAR YEAR 1990

LINN E. MAGOFFIN (Producer Member), Chairman

REGINALD A. STONE (Producer Member), Vice Chairman

GERALD J. BLACK (Producer Member), Secretary

ALFRED F. WITTIG (Public Member), Treasurer

DONALD F. CLARK (Public Member)

EDWARD R. HECK (Producer Member)

BURTON E. JONES (Public Member)

NELS PALM (Producer Member)

THOMAS E. SHOLLENBERGER (Producer Member)

STAFF

Robert G. Berlien, Assistant Secretary-Assistant Treasurer
Ralph B. Helm, Attorney
Thomas M. Stetson, Engineer

FOR CALENDAR YEAR 1991

LINN E. MAGOFFIN (Producer Member), Chairman

REGINALD A. STONE (Producer Member), Vice Chairman

GERALD J. BLACK (Producer Member), Secretary

NELS PALM (Producer Member), Treasurer

ROYALL K. BROWN (Public Member)

MARVIN JOE CICHY (Public Member)

EDWARD R. HECK (Producer Member)

C. ROBER KEISER (Public Member)

ANDREW A. KRUEGER (Producer Member)

STAFF

John E. Maulding, Executive Officer
Ralph B. Helm, Attorney
Thomas M. Stetson, Engineer

FOR CALENDAR YEAR 1992

LINN E. MAGOFFIN (Producer Member), Chairman

REGINALD A. STONE (Producer Member), Vice Chairman

GERALD J. BLACK (Producer Member), Secretary

NELS PALM (Producer Member), Treasurer

ROYALL K. BROWN (Public Member)

RICHARD W. CANTWELL (Producer Member)

BURTON E. JONES (Public Member)

C. ROBER KEISER (Public Member)

ANDREW A. KRUEGER (Producer Member)

STAFF

John E. Maulding, Executive Officer
Ralph B. Helm, Attorney
Thomas M. Stetson, Engineer

FOR CALENDAR YEAR 1993

LINN E. MAGOFFIN (Producer Member), Chairman

REGINALD A. STONE (Producer Member), Vice Chairman

GERALD J. BLACK (Producer Member), Secretary

NELS PALM (Producer Member), Treasurer

RICHARD W. CANTWELL (Producer Member)

MARVIN JOE CICHY (Public Member)

FRANK F. FORBES (Public Member)

ANDREW A. KRUEGER (Producer Member)

LEROY E. MOELLER (Public Member)

STAFF

John E. Maulding, Executive Officer
Frederic A. Fudacz, Attorney (Effective February 1993)
Ralph B. Helm, Attorney (Retired January 1993)
Thomas M. Stetson, Engineer

FOR CALENDAR YEAR 1994

LINN E. MAGOFFIN (Producer Member), Chairman******

REGINALD A. STONE (Producer Member), Vice Chairman

RICHARD W. CANTWELL (Producer Member), Secretary***

STANLEY D. YARBROUGH (Producer Member), Treasurer

GERALD J. BLACK (Producer Member)*

MARVIN JOE CICHY (Public Member)

FRANK F. FORBES (Public Member)

MANNY J. MAGANA (Producer Member)

P. GEOFFREY NUNN (Producer Member)*******

LEROY E. MOELLER (Public Member)

MICHAEL L. WHITEHEAD (Producer Member)**

STAFF

John E. Maulding, Executive Officer****
Carol Williams, Executive Officer*****
Frederic A. Fudacz, Attorney
Thomas M. Stetson, Engineer

*	Mr. Black resigned from Watermaster on February 4, 1994
**	Mr. Whitehead was nominated to Watermaster on March 2, 1994
***	Mr. Cantwell was elected as Watermaster Secretary on May 4, 1994
****	Mr. Maulding passed away on March 13, 1994
*****	Ms. Williams was appointed Executive Officer on August 3, 1994
******	Mr. Magoffin resigned from Watermaster on August 3, 1994
*******	Mr. Nunn was nominated to Watermaster on August 8, 1994

FOR CALENDAR YEAR 1995

REGINALD A. STONE (Producer Member), Chairman
RICHARD W. CANTWELL (Producer Member), Vice Chairman
MANNY J. MAGANA (Producer Member), Secretary
MICHAEL L. WHITEHEAD (Producer Member), Treasurer
JUDITH L. ALMOND (Producer Member)
ROBERT W. BOWCOCK (Producer Member)
MARVIN JOE CICHY (Public Member)
FRANK F. FORBES (Public Member)
LEROY E. MOELLER (Public Member)

STAFF

Carol Williams, Executive Officer
Frederic A. Fudacz, Attorney
Thomas M. Stetson, Engineer

FOR CALENDAR YEAR 1996

REGINALD A. STONE (Producer Member), Chairman
RICHARD W. CANTWELL (Producer Member), Vice Chairman
MANNY J. MAGANA (Producer Member), Secretary
MICHAEL L. WHITEHEAD (Producer Member), Treasurer
JUDITH L. ALMOND (Producer Member)
ROBERT W. BOWCOCK (Producer Member)
MARVIN JOE CICHY (Public Member)
FRANK F. FORBES (Public Member)
LEROY E. MOELLER (Public Member)

STAFF

Carol Williams, Executive Officer
Frederic A. Fudacz, Attorney
Thomas M. Stetson, Engineer

FOR CALENDAR YEAR 1997

REGINALD A. STONE (Producer Member), Chairman

RICHARD W. CANTWELL (Producer Member), Vice Chairman

MANNY J. MAGANA (Producer Member), Secretary

MICHAEL L. WHITEHEAD (Producer Member), Treasurer

JUDITH L. ALMOND (Producer Member)

ROBERT W. BOWCOCK (Producer Member)

MARVIN JOE CICHY (Public Member)

FRANK F. FORBES (Public Member)

LEROY E. MOELLER (Public Member)

STAFF

Carol Williams, Executive Officer
Frederic A. Fudacz, Attorney
Thomas M. Stetson, Engineer

FOR CALENDAR YEAR 1998

REGINALD A. STONE (Producer Member), Chairman

RICHARD W. CANTWELL (Producer Member), Vice Chairman

MANNY J. MAGANA (Producer Member), Secretary

MICHAEL L. WHITEHEAD (Producer Member), Treasurer

JUDITH L. ALMOND (Producer Member)

ROBERT W. BOWCOCK (Producer Member)

MARVIN JOE CICHY (Public Member)

FRANK F. FORBES (Public Member)

LEROY E. MOELLER (Public Member)

STAFF

Carol Williams, Executive Officer
Frederic A. Fudacz, Attorney
Thomas M. Stetson, Engineer

FOR CALENDAR YEAR 1999

REGINALD A. STONE (Producer Member), Chairman

RICHARD W. CANTWELL (Producer Member), Vice Chairman

MANNY J. MAGANA (Producer Member), Secretary

MICHAEL L. WHITEHEAD (Producer Member), Treasurer

ROBERT W. BOWCOCK (Producer Member)

MARVIN JOE CICHY (Public Member)

FRANK F. FORBES (Public Member)

JAMES B. GALLAGHER (Producer Member)

LEROY E. MOELLER (Public Member)

STAFF

Carol Williams, Executive Officer
Frederic A. Fudacz, Attorney
Thomas M. Stetson, Engineer

FOR CALENDAR YEAR 2000

REGINALD A. STONE (Producer Member), Chairman

RICHARD W. CANTWELL (Producer Member), Vice Chairman

MANNY J. MAGANA (Producer Member), Secretary

MICHAEL L. WHITEHEAD (Producer Member), Treasurer

ROBERT W. BOWCOCK (Producer Member)

MARVIN JOE CICHY (Public Member)

FRANK F. FORBES (Public Member)

JAMES B. GALLAGHER (Producer Member)

LEROY E. MOELLER (Public Member)

STAFF

Carol Williams, Executive Officer
Frederic A. Fudacz, Attorney
Thomas M. Stetson, Engineer

FOR CALENDAR YEAR 2001

REGINALD A. STONE (Producer Member), Chairman
RICHARD W. CANTWELL (Producer Member), Vice Chairman
MANNY J. MAGANA (Producer Member), Secretary
MICHAEL L. WHITEHEAD (Producer Member), Treasurer
ROBERT W. BOWCOCK (Producer Member)
MARVIN JOE CICHY (Public Member)
FRANK F. FORBES (Public Member)
JAMES B. GALLAGHER (Producer Member)
LEROY E. MOELLER (Public Member)

STAFF

Carol Williams, Executive Officer
Frederic A. Fudacz, Attorney
Thomas M. Stetson, Engineer

FOR CALENDAR YEAR 2002

REGINALD A. STONE (Producer Member), Chairman
RICHARD W. CANTWELL (Producer Member), Vice Chairman
MANNY J. MAGANA (Producer Member), Secretary
MICHAEL L. WHITEHEAD (Producer Member), Treasurer
ROBERT W. BOWCOCK (Producer Member)
MARVIN JOE CICHY (Public Member)
FRANK F. FORBES (Public Member)
JAMES B. GALLAGHER (Producer Member)
CAROL A. MONTANO (Public Member)

STAFF

Carol Williams, Executive Officer
Frederic A. Fudacz, Attorney
Thomas M. Stetson, Engineer

FOR CALENDAR YEAR 2003

REGINALD A. STONE (Producer Member), Chairman
RICHARD W. CANTWELL (Producer Member), Vice Chairman
JAMES B. GALLAGHER (Producer Member), Secretary
ROBERT W. NICHOLSON (Producer Member), Treasurer
ROBERT W. BOWCOCK (Producer Member)
ALFONSO CONTRERAS (Public Member)
FRANK F. FORBES (Public Member)
THOMAS LOVE (Public Member)
CHARLES SHAW (Producer Member)

STAFF

Carol Williams, Executive Officer
Frederic A. Fudacz, Attorney
Thomas M. Stetson, Engineer

FOR CALENDAR YEAR 2004

PAUL S. CARVER (Producer Member), Chairman
JAMES B. GALLAGHER (Producer Member), Vice Chairman
ROBERT W. BOWCOCK (Producer Member), Secretary
ROBERT W. NICHOLSON (Producer Member), Treasurer
RICHARD W. CANTWELL (Producer Member)
ALFONSO CONTRERAS (Public Member)
FRANK F. FORBES (Public Member)
THOMAS LOVE (Public Member)
CHARLES E. SHAW (Producer Member)

STAFF

Carol Williams, Executive Officer
Frederic A. Fudacz, Attorney
Thomas M. Stetson, Engineer

FOR CALENDAR YEAR 2005

PAUL S. CARVER (Producer Member), Chairman
JAMES B. GALLAGHER (Producer Member), Vice Chairman
ROBERT W. BOWCOCK (Producer Member), Secretary
ROBERT W. NICHOLSON (Producer Member), Treasurer
RICHARD W. CANTWELL (Producer Member)
ALFONSO CONTRERAS (Public Member)
LEON M.N. GARCIA (Public Member)
THOMAS LOVE (Public Member)
CHARLES E. SHAW (Producer Member)

STAFF

Carol Williams, Executive Officer
Frederic A. Fudacz, Attorney
Thomas M. Stetson, Engineer

FOR CALENDAR YEAR 2006

PAUL S. CARVER (Producer Member), Chairman
JAMES B. GALLAGHER (Producer Member), Vice Chairman
ROBERT W. BOWCOCK (Producer Member), Secretary
ROBERT W. NICHOLSON (Producer Member), Treasurer
RICHARD W. CANTWELL (Producer Member)
ALFONSO CONTRERAS (Public Member)
LEON M.N. GARCIA (Public Member)
THOMAS LOVE (Public Member)
CHARLES E. SHAW (Producer Member)

STAFF

Carol Williams, Executive Officer
Frederic A. Fudacz, Attorney
Thomas M. Stetson, Engineer

FOR CALENDAR YEAR 2009

JAMES M. BYERRUM (Producer Member), Chairman

PAT MALLOY (Producer Member), Vice Chairman

DAN ARRIGHI (Producer Member), Secretary

CHARLES E. SHAW (Producer Member), Treasurer

ROBERT W. BOWCOCK (Producer Member)

ED CHAVEZ (Public Member)

ALFONSO CONTRERAS (Public Member)

THOMAS LOVE (Public Member)

MICHAEL O. QUINN (Producer Member)

STAFF

Carol Thomas Williams, Executive Officer
Frederic A. Fudacz, Attorney
Thomas M. Stetson, Engineer

FOR CALENDAR YEAR 2010

JAMES M. BYERRUM (Producer Member), Chairman

PAT MALLOY (Producer Member), Vice Chairman

DAN ARRIGHI (Producer Member), Secretary

CHARLES E. SHAW (Producer Member), Treasurer

ROBERT W. BOWCOCK (Producer Member)

ED CHAVEZ (Public Member)

ALFONSO CONTRERAS (Public Member)

THOMAS LOVE (Public Member)

MICHAEL O. QUINN (Producer Member)

STAFF

Carol Thomas Williams, Executive Officer
Frederic A. Fudacz, Attorney
Thomas M. Stetson, Engineer

FOR CALENDAR YEAR 2011

JAMES M. BYERRUM (Producer Member), Chairman

PAT MALLOY (Producer Member), Vice Chairman

DAN ARRIGHI (Producer Member), Secretary

CHARLES E. SHAW (Producer Member), Treasurer

CHET ANDERSON (Producer Member)

ED CHAVEZ (Public Member)

THOMAS LOVE (Public Member)

MICHAEL O. QUINN (Producer Member)

CHARLES TREVINO (Public Member)

STAFF

Carol Thomas Williams, Executive Officer
Frederic A. Fudacz, Attorney
Thomas M. Stetson, Engineer*
Stephen B. Johnson, Engineer**

* Thomas M. Stetson passed away 4/14/2011
** Stephen B. Johnson replaced Mr. Stetson

FOR CALENDAR YEAR 2012

JAMES M. BYERRUM (Producer Member), Chairman

PAT MALLOY (Producer Member), Vice Chairman

DAN ARRIGHI (Producer Member), Secretary

DAVID MICHALKO (Producer Member), Treasurer

CHET ANDERSON (Producer Member)

ED CHAVEZ (Public Member)

THOMAS LOVE (Public Member)

MICHAEL O. QUINN (Producer Member)

CHARLES TREVINO (Public Member)

STAFF

Carol Thomas Williams, Executive Officer *
Anthony C. Zampiello, Executive Officer**
Frederic A. Fudacz, Attorney
Stephen B. Johnson, Engineer

* Carol Thomas Williams resigned on 5/12/12
** Anthony C. Zampiello appointed to Executive Officer 9/26/12

FOR CALENDAR YEAR 2013

JAMES M. BYERRUM (Producer Member), Chairman

DAVID MICHALKO (Producer Member), Vice Chairman

DAN ARRIGHI (Producer Member), Secretary

RICHARD RICH (Producer Member), Treasurer

CHET ANDERSON (Producer Member)

ANTHONY R. FELLOW (Public Member)

GARRY HOFER (Producer Member)

THOMAS LOVE (Public Member)

CHARLES TREVINO (Public Member)

STAFF

Anthony C. Zampiello, Executive Officer
Frederic A. Fudacz, Attorney
Stephen B. Johnson, Engineer

Appendix 2: La Habra Notice to Become a GSA and Brea/La Habra MOU

City of La Habra

"A Caring Community"

PUBLIC WORKS

621 W. Lambert Rd.
Post Office Box 337
La Habra, CA 90633-0785
Office: (562) 383-4170
Fax: (562) 383-4497

VIA EMAIL:

January 20, 2016

Mark Nordberg, GSA Project Manager
Senior Engineering Geologist
California Department of Water Resources
901 P Street, Room 213-B
P.O. Box 942836
Sacramento, CA 94236
Mark.Nordberg@water.ca.gov

Re: City of La Habra's Notice of Election to Become a Groundwater Sustainability Agency

Dear Mr. Nordberg:

Pursuant to California Water Code 10723.8 of the Sustainable Groundwater Management Act (SGMA), the City of La Habra (La Habra) provides this notice of its election to be established as the Groundwater Sustainability Agency (GSA) for portions of DWR Groundwater Basin 8-1 underlying La Habra and portions of the City of Brea currently unmanaged. The extents of the boundary proposed to be managed by the La Habra GSA are shown in Exhibit 1.

On December 21, 2015, La Habra held a public hearing in the City of La Habra, County of Orange, regarding the establishment of La Habra as a GSA overlying a portion of Basin 8-1, in accordance with Water Code Section 10723(b). Notice for the public hearing was posted in the Orange County Register in accordance with Government Code Section 6066 (Exhibit 2).

After holding this public hearing, the La Habra City Council adopted Resolution No. 5714 establishing La Habra as a GSA (Exhibit 3). At this same City Council meeting, the city adopted Resolution No. 5715 to request DWR to modify the boundaries of Basin 8-1, the Orange County Coastal Basin, as depicted in DWR Bulletin 118, so that the La Habra Basin is designated as a basin or subbasin, separate and apart from the balance of Basin 8-1. This request will be subject to a separate notice to DWR in the very near future. Concurrently, La Habra and the City of Brea are in the process of entering into a Memorandum of Agreement to designate La Habra as the GSA to sustainably manage the La Habra Basin as a distinct basin separate from Basin 8-1. Once this agreement is finalized and signed, it will be forwarded to the Department.

In addition to the two resolutions, the La Habra City Council approved the first reading of an ordinance to prohibit the extraction and exportation of groundwater underlying La Habra for use outside of the city (Exhibit 4). The second reading of the ordinance took place on January 19, 2016, and the ordinance is anticipated to take effect on February 18, 2016.

Pursuant to California Water Code Section 10723.2 of SGMA, the La Habra GSA shall consider the interests and work cooperatively with all beneficial uses and users of groundwater, as wells as those responsible for implementing groundwater sustainability plans. A list of interested parties was developed for this purpose, which includes the Orange County Water District who currently manages groundwater within the majority of DWR Groundwater Basin 8-1. The list of interested parties is provided in Exhibit 5. These interested parties were notified of the public hearing on the establishment of La Habra as a GSA. Additionally, La Habra has planned consultations with interested parties and will continue to consult and coordinate with these interested parties throughout the process to develop a Groundwater Sustainability Plan.

In summary, in accordance with Water Code Section 10723.8(a), included in this transmittal are the following exhibits:

- Exhibit 1: Graphical Information System and hard copy files of the service area boundaries
- Exhibit 2: Copy of public notice of the public hearing
- Exhibit 3: City of La Habra Resolution forming a GSA
- Exhibit 4: City of La Habra Ordinance
- Exhibit 5: List of Interested Parties

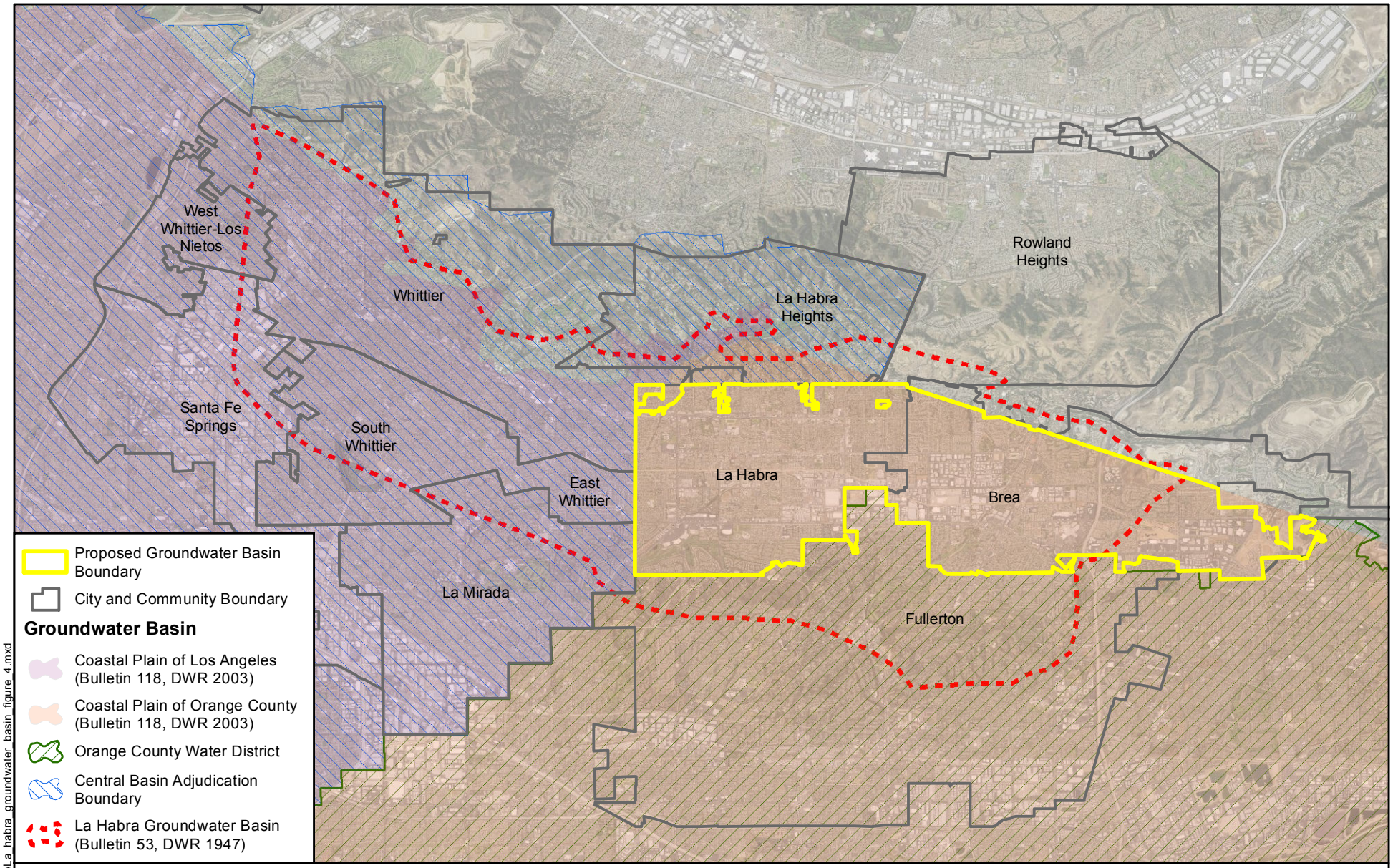
For further inquiries or comments, please contact me at esaykali@lahabraca.gov or at (562) 383-4170.

Sincerely,

Elias Saykali, P.E.
Director of ~~Public~~ Works
City of La Habra

Enclosures (5)

CC (via email):
Timothy Ross, Senior Engineering Geologist
Timothy.Ross@water.ca.gov



STETSON ENGINEERS INC.

PROPOSED GROUNDWATER BASIN BOUNDARY

FIGURE 4

Document Path: J:\lin2452\La_habra_groundwater_basin_figure_4.mxd

LEGAL NOTICE OF PUBLIC HEARING

Notice is hereby given that the City Council of the City of La Habra will hold a duly noticed public hearing on Monday, December 21, 2015, at 6:30 p.m. in the City Council Chambers, Administration Building, 201 E. La Habra Boulevard, La Habra, California to consider the following items:

a. **A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF LA HABRA DECLARING THE CITY OF LA HABRA TO BE THE GROUNDWATER SUSTAINABILITY AGENCY FOR THE LA HABRA GROUNDWATER BASIN.**

As authorized under the Sustainable Groundwater Management Act ("SGMA"), this proposed resolution would establish the City as the Groundwater Sustainability Agency ("GSA") for the La Habra Groundwater Basin ("La Habra Basin"), subject to a review for "completeness" by the California Department of Water Resources ("DWR"). The Resolution would authorize and direct the City Manager to negotiate a Memorandum of Agreement between the City of La Habra and the City of Brea establishing the respective responsibilities of the two cities relative to the La Habra Basin.

b. **A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF LA HABRA REQUESTING THE CALIFORNIA DEPARTMENT OF WATER RESOURCES TO MODIFY THE BOUNDARIES OF BULLETIN 118, BASIN 8-1 TO ESTABLISH LA HABRA BASIN AS A SEPARATE BASIN OR SUBBASIN.**

This resolution would authorize and direct the City Manager, as provided in SGMA, to prepare and submit a request and all required supporting documentation to DWR to modify the boundaries of Basin 8-1, as depicted in DWR Bulletin 118, in order to establish La Habra Basin as a separate basin or subbasin. The request would be based upon: (1) the hydrogeologic separation of the La Habra Basin from the balance of Basin 8-1; and (2) the fact that La Habra Basin is outside the jurisdiction of nearby agencies with groundwater management responsibilities.

c. **AN ORDINANCE OF THE CITY COUNCIL OF THE CITY OF LA HABRA ADDING CHAPTER 13.31 TO THE MUNICIPAL CODE TO PROHIBIT THE EXTRACTION AND EXPORTATION OF GROUNDWATER UNDERLYING THE CITY FOR USE OUTSIDE OF THE CITY.**

This proposed ordinance would enact a new chapter to the Municipal Code to prohibit extraction of groundwater underlying the City and exportation of that water for uses outside of the City. The measure is proposed to protect the health, safety and welfare the inhabitants of the City and to protect the water resources underlying the City for present and future beneficial uses.

All interested persons are invited to attend the above public hearing and be heard at the time and place specified above. Please call 562-383-4010 for information.

LA HABRA CITY COUNCIL
Tamara Mason, MMC, City Clerk

Publish: December 7 & 14, 2015
OC Register

RESOLUTION NO. 5714

A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF LA HABRA DECLARING THE CITY OF LA HABRA TO BE THE GROUNDWATER SUSTAINABILITY AGENCY FOR THE LA HABRA GROUNDWATER BASIN

WHEREAS, A portion of the so-called "Orange County Coastal Basin", (denominated Basin 8-1 in Bulletin 118 of the California Department of Water Resources ("DWR")) underlays the City of La Habra ("City") and the City of Brea ("Brea").

WHEREAS, the State of California has enacted the Sustainable Groundwater Management Act, Water Code §§10720 et seq. ("SGMA"). SGMA requires local agencies overlying the Orange County Coastal Basin to establish one or more Groundwater Sustainability Agency(s) ("GSA(s)") to adopt and implement one or more Groundwater Sustainability Plan(s) ("GSP(s)") for the Orange County Coastal Basin; and

WHEREAS, the City is authorized to become a GSA under SGMA because:

a. The City has land use responsibilities over substantially all of the lands within its exterior jurisdictional boundaries.

b. The City, through its subsidiary, the La Habra Utility Authority, is the public drinking water supplier within the City's exterior jurisdictional boundaries.

c. The portion of Orange County Coastal Basin underlying the City and Brea is known locally as the "La Habra Basin." The La Habra Basin is located within the County of Orange. The La Habra Basin is hydrogeolgically and jurisdictionally separate and distinct from the balance of the Orange County Coastal Basin.

d. The City overlays the main-water-yielding portion of the La Habra Basin. The City has invested millions of dollars in capital improvement costs and operating, maintenance, repair and replacement costs to develop and put the water resources of the La Habra Basin to reasonable and beneficial use within the City.

e. No other water wells are known within the City's jurisdictional boundaries to extract water from the La Habra Basin for public or private water uses; and

f. Sustainably managing, operating and maintaining the water resources of the La Habra Basin is a fundamental interest of the City to

provide safe and reliable water service to protect the health, safety and welfare of the citizens, inhabitants and businesses of the City; and

WHEREAS, a low yield portion of the La Habra Basin underlays Brea. Brea operates two small volume water wells to serve non-potable irrigation water uses within Brea's city limits. City manager, legal and public works representatives from the City of La Habra have consulted with their counterparts from the City of Brea and have been informed that Brea intends to enter into a Memorandum of Agreement with the City of La Habra, which will designate the City to act as the GSA and develop a GSP for the portion of the La Habra Basin underlying Brea; and

WHEREAS, the City of Fullerton ("Fullerton") geographically overlays a non-water yielding portion of the La Habra Basin, Fullerton has no wells extracting water from the La Habra Basin and Fullerton representatives have indicated intent to disclaim GSA jurisdiction over any portion of the La Habra Basin; and

WHEREAS, City representatives have met and conferred with representatives of local agencies operating municipal water systems overlying portions of the La Habra Basin, including Brea and Fullerton, and with agencies managing groundwater resources in areas adjacent to La Habra Basin, including the Orange County Water District and the Water Replenishment District of Southern California, concerning La Habra's intent to become the GSA for La Habra Basin; and

WHEREAS, notice of a public hearing to receive comments on the proposal to adopt this resolution has been provided as required by Water Code §10723(b), written notice has been provided to known parties in the categories listed in Water Code §10723.4 and proofs of service of such notices are on file with the City Clerk; and

WHEREAS, the activity provided for in this resolution is exempt from California Environmental Quality Act pursuant to 14 CCR §15061(b)(3) because it can be seen with certainty that there is no possibility that the activity in question may have a significant effect on the environment,

NOW, THEREFORE, BE IT RESOLVED that the City Council of the City of La Habra does herby find, determine and order as follows:

1) The matters set forth in the foregoing recitals are true and correct.

2) The best interests of the City and its citizens, inhabitants and businesses will be served if the City maintains autonomous regulation and sustainable management planning authority over the La Habra Basin.

3) The best interests of the City and its citizens, inhabitants and businesses will be served if the City is established according to SGMA to be a GSA for that portion of the Orange County Coastal Basin known as the La Habra Basin and is authorized to exercise the authorities set forth in SGMA, including authority to prepare a GSP, for the

La Habra Basin.

4) The City Manager is authorized and directed to negotiate and prepare a MOA between the City and Brea, providing for the City to be the GSA for the La Habra Basin, including the portion of the La Habra Basin underlying Brea. The MOA shall provide for the City to be lead agency, in consultation with Brea, to prepare a GSP for the La Habra Basin and may be subject to such other terms and conditions as shall be mutually agreeable to the MOA parties.

5) Within 30 days after adoption of this Resolution, the City Manager is authorized and directed to notify DWR of the City's decision to become the GSA for La Habra Basin and to certify the information specified in Water Code §10723.8 as follows:

(a) Information that clearly shows the GSA formation notification was submitted to DWR within 30 days after adoption of this Resolution.

(b) A map (including hard-copy and GIS shape files) and narrative showing (i) the City's service area boundaries, (ii) the boundaries of the basin or portion of the La Habra Basin, and (ii) the service area boundaries for the cities of Brea and Fullerton and of the Orange County Water District.

(c) A copy of this Resolution.

(d) A copy of the groundwater export ordinance adopted by the City Council on the same date that this Resolution was adopted.

(e) A list of the interested parties developed pursuant to Water Code Section 10723.2.

(f) A detailed explanation how the City, acting as the GSA, will consider the interests of all beneficial uses and users of groundwater from the La Habra Basin, as well as those responsible for implementing GSPs.

(h) Proofs of services of notice of the public hearing conducted by the City Council on December 21, 2015 as required by Water Code §10723 and proof of mailing written notice to interested parties listed according to Water Code §10723.2 regarding notification of the hearing

6) The City Clerk shall cause a Public Resources Code Section 21152 Notice of Exemption to be filed with the County Clerk for the County of Orange.

7) This resolution shall take effect immediately upon its adoption by the City Council, and the City Clerk shall attest to and certify the vote adopting this Resolution.

PASSED, APPROVED AND ADOPTED this 21st day of December, 2015.

James Gomez, Mayor

ATTEST:

Laurie Swindell, CMC, Deputy City Clerk

STATE OF CALIFORNIA)
COUNTY OF ORANGE) ss.
CITY OF LA HABRA)

I, Laurie Swindell, Deputy City Clerk for the City of La Habra, do hereby certify that the above and foregoing is a true and correct copy of Resolution No. 5714 introduced and adopted at a Regular Meeting of the City Council of the City of La Habra held on the 21st day of December, 2015, by the following vote:

AYES:	COUNCILMEMBERS:	SHAW ESPINOZA, BLAZEY, BEAMISH, GOMEZ
NOES:	COUNCILMEMBERS:	NONE
ABSENT:	COUNCILMEMBERS:	NONE
ABSTAIN:	COUNCILMEMBERS:	NONE

Witness my hand and the official seal of the City of La Habra this 21st day of December, 2015.

Laurie Swindell, CMC, Deputy City Clerk

ORDINANCE NO. 1767

AN ORDINANCE OF THE CITY COUNCIL OF THE CITY OF LA HABRA ADDING CHAPTER 13.31 TO THE MUNICIPAL CODE TO PROHIBIT EXTRACTION AND EXPORTATION OF GROUNDWATER UNDERLYING THE CITY FOR USE OUTSIDE OF THE CITY

The City Council of the City of La Habra does ordain as follows:

Section 1. The City Council does hereby find and determine that:

a. A portion of groundwater Basin 8-1, the Orange County Coastal Basin, as depicted in California Department of Water Resources Bulletin 118, underlays the City of La Habra and the City of Brea. The groundwater basin underlying La Habra and Brea is known locally as the "La Habra Basin." The La Habra Basin is hydrogeolgically and jurisdictionally separate and distinct from the balance of Basin 8-1.

b. The sustainable annual yield of the portion of La Habra Basin underlying the City is estimated to be 4,500 acre feet. The City produces about 4,200 acre feet of water per year from this resource and distributes that water for beneficial potable uses through its municipal water system.

c. Groundwater produced by the City from the La Habra Basin is an essential resource for present and future municipal, industrial, and domestic beneficial uses within the City. The protection of the health, welfare, and safety of the residents and economy of the City require that the groundwater resources of the City be protected for present and future municipal, industrial, and domestic beneficial uses within the City.

d. The sustainable yield of the portion of the La Habra Basin underlying the City is not sufficient to serve beneficial uses in addition to the beneficial municipal, industrial and domestic uses currently served through the City municipal water system.

e. Article X, Section 2 of the California Constitution and Water Code section 100 prohibit the waste, unreasonable use, unreasonable method of use, and unreasonable method of diversion of water. The extraction and exportation of groundwater from the portion of the La Habra Basin underlying the City is unsustainable and, therefore, is an unreasonable use of water within the meaning of the California Constitution and the California Water Code.

f. The best interest of the present and future inhabitants of the City will be served if the extraction and exportation of groundwater produced from within the City's jurisdictional boundaries is prohibited.

g. The proposed amendment to the Municipal Code is determined to be exempt from California Environmental Quality Act pursuant to 14 CCR §15061(b)(3) because it can be seen with certainty that there is no possibility that the activity in question may have a significant effect on the environment.

Section 2. The City Council does hereby amend Title 13 by adding Chapter 13.31 to the La Habra Municipal Code hereto attached as Exhibit A.

Section 3. If any section, subsection, phrase, or clause of this ordinance is for any reason held to be unconstitutional, such decision shall not affect the validity of the remaining portions of this ordinance.

Section 4. The City Clerk shall cause a Public Resources Code Section 21152 Notice of Exemption to be filed with the County Clerk for the County of Orange.

Section 5. The City Clerk shall certify to the passage and adoption of this Ordinance and shall cause the same to be published in the manner required by law. This Ordinance shall become effective thirty (30) days from and after its passage.

PASSED AND ADOPTED at a regular meeting of the City Council of the City of La Habra held on the 19th day of January, 2016.

Jim Gomez, Mayor

Tamara D. Mason, MMC, City Clerk

STATE OF CALIFORNIA)
COUNTY OF ORANGE) SS.
CITY OF LA HABRA)

I, Tamara D. Mason, City Clerk of the City of La Habra, do hereby certify that the above and foregoing is a true and correct copy of Ordinance No. 1767 introduced at a regular meeting of the City Council of the City of La Habra held on the 21st day of December, 2015, and duly adopted at a regular meeting held on the 19th day of January, 2016, by the following vote:

AYES: COUNCILMEMBERS: BEAMISH, BLAZEY, ESPINOZA, SHAW, GOMEZ
NOES: COUNCILMEMBERS: NONE
ABSENT: COUNCILMEMBERS: NONE
ABSTAIN: COUNCILMEMBERS: NONE

Said ordinance has been published or posted pursuant to law.

Witness my hand and the official seal of the City of La Habra this 19th day of January, 2016.

Tamara D. Mason, MMC, City Clerk

EXHIBIT A

ORDINANCE NO. 1767

CHAPTER 13.31 GROUNDWATER EXTRACTION AND EXPORTATION

13.31.10 Definitions

13.31.20 Prohibition

13.31.30 Implementation

13.31.40 Authority

13.31.40 Severability and Validity

13.31.10 Definitions.

The following words and phrases shall have the following meanings when used in this Chapter:

1. "Brea" means the City of Brea.

2. "City" means the City of La Habra.

3. "Extract" means to pump Groundwater from the La Habra Basin through any well within the boundaries of the City of La Habra.

4. "Export" means to convey or transmit Extracted Groundwater for use directly or indirectly on parcels which are outside of the City boundaries. Export of Extracted Groundwater includes activities by which Extracted Groundwater may, through one or more exchanges or transactions, be directly or indirectly conveyed or transferred for use out of the City.

5. "Groundwater" means water beneath the surface of the earth within the zone below the water table in which the soil is completely saturated with water, but does not include water that flows in known and definite channels.

6. "La Habra Basin" shall mean that portion of groundwater Basin 8-1, the Orange County Coastal Basin, as depicted in California Department of Water Resources Bulletin 118, which underlays the City and Brea and

which is hydrogeolgically and jurisdictionally separate and distinct from the balance of Basin 8-1.

7. "Person" means and includes natural persons, corporations, firms, partnerships, joint stock companies, associations and other organizations of persons, and public entities.

13.31.20 Prohibition.

No person may Extract and Export Groundwater from the portion of the La Habra Basin that underlies the City for use outside of the City boundaries. Violations of this section shall constitute a public nuisance.

13.31.30 Implementation.

1. No permit shall be issued to drill a water well according to Municipal Code Chapter 13.28 or Chapter 13.30 for purpose of Extraction or Exportation of Groundwater.

2. No excavation permit shall be issued according to Municipal Code Section 12.12.020 owned public right of way for purposes of conveying or transmitting Extraction or Exportation of Groundwater.

3. City code enforcement authorities are authorized to enforce compliance with Chapter according to Municipal Code Chapter 18.74.

13.31.40 Authority.

This Chapter is enacted in order to protect the health, welfare and safety of present and future residents of the City as authorized by Article XI, Section 7 of the California Constitution and to protect the water resources of the City for present and future beneficial uses within the City as authorized by Article X, Section 2 of the California Constitution.

13.31.40 Severability and Validity.

The provisions of this Chapter are hereby declared to be severable. If any section, subsection, sentence, clause, word, or phrase of this Chapter is held to be unconstitutional or otherwise invalid for any reason, such decision shall not affect the validity of the remainder of this ordinance. The City Council hereby declares that they would have passed this ordinance, and each section, subsection, sentence, clause, word or phrase thereof, irrespective of the fact that one or more sections, subsections, sentences, clauses, words, or phrases be declared invalid or unconstitutional.

LIST OF CONTACTS FOR LA HABRA GROUNDWATER BASIN NOTICE OF PUBLIC HEARING

1. Gabrieleno Band of Mission Indians-Kizh-Nation

   Attn: Andrew Salas, Chairman

   P.O. Box 393

   Covina , CA 21723

   Email: gabrieleindians@yahoo.com

2. Soboba Band of Luiseno Indians
   Attn: Joseph Ontiveros, Culture Resource Director
   PO Box 487
   San Jacinto, CA 92581

   Email: jontiveros@soboba-nsn.gov

3. Orange County
   Frank Kim, County Executive Officer
   333 West Santa Ana Blvd.
   Santa Ana , CA 701

   Email: frank.kim@ocgov.com

4. City of Brea

   Bill Gallardo, City Manager

   1 Civic Center Drive

   Brea, CA 92821

   Email: billga@cityofbrea.net

5. City of Fullerton
   Joe Felz, City Manager
   303 Commonwealth Ave
   Fullerton , CA 92832

   Email: citymanager@cityoffullerton.com

6. Central Basin Municipal Water District
   Kevin Hunt, General Manager
   6252 Telegraph Road
   Commerce , CA 90040

Email: kevinh@centralbasin.org

7. Orange County Water District
   Mike Markus, General Manager
   P.O Box 8300
   Fountain Valley, CA 92728

   Email: mmarkus@ocwd.com

8. Water Replenishment District
   Robb Whitaker, General Manager
   4040 Paramount Blvd.
   Paramount, CA 90712

   Email: rwhitaker@wrd.org

9. Metroppolitin Water District of Orange County
   Rob Hunter, General
   P.o> Box 20895
   Fountain Valley , CA 92708

   rhunter@mwdoc.com

From:	Heather Steele
To:	Nordberg, Mark@DWR
Cc:	"Elias Saykali"; "Jeff Helsley"
Subject:	La Habra GSA - Interested Parties
Date:	Monday, February 22, 2016 9:38:27 AM

Mark,

Below is the section of the Water Code that lists the categories of interested parties that should be included in the GSA process. In response to your request to Elias Saykali, Director of Public Works for the City of La Habra, the parties applicable to the La Habra Groundwater Sustainability Agency have been listed below for each category in blue text. These parties were notified of the public hearing regarding the formation of the La Habra Groundwater Sustainability Agency and included on the list of interested parties.

10723.2
The groundwater sustainability agency shall consider the interests of all beneficial uses and users of groundwater, as well as those responsible for implementing groundwater sustainability plans. These interests include, but are not limited to, all of the following:

(a) Holders of overlying groundwater rights, including:
(1) Agricultural users.
None known in proposed La Habra Groundwater Basin.

(2) Domestic well owners.
None known in proposed La Habra Groundwater Basin.

(b) Municipal well operators.
Cities of La Habra, Brea, and Fullerton (Note: Fullerton's jurisdiction is adjacent to the proposed La Habra Groundwater Basin)

(c) Public water systems.
Cities of La Habra, Brea, and Fullerton

(d) Local land use planning agencies.
Cities of La Habra, Brea, and Fullerton and the County of Orange.

(e) Environmental users of groundwater.
None known in proposed La Habra Groundwater Basin.

(f) Surface water users, if there is a hydrologic connection between surface and groundwater bodies.
None known in proposed La Habra Groundwater Basin.

(g) The federal government, including, but not limited to, the military and managers of federal lands.
There is no federal land within the proposed La Habra Groundwater Basin.

(h) California Native American tribes.
Gabrieleno Band of Mission Indians-Kizh Nation, Soboba Band of Luiseno Indians.

(i) Disadvantaged communities, including, but not limited to, those served by private domestic wells or small community water systems.
There are no disadvantaged communities within the proposed La Habra Groundwater Basin.

(j) Entities listed in Section 10927 that are monitoring and reporting groundwater elevations in all or a part of a groundwater basin managed by the groundwater sustainability agency.
Cities of La Habra, Brea, and Fullerton.

In addition to the parties listed above, the following parties were also notified of the public hearing:

- Central Basin Municipal Water District
- Orange County Water District
- Water Replenishment District of Southern California
- Metropolitan Water District of Orange County

Please let me know if you have any additional questions.

Thank you,
Heather Steele
Stetson Engineers Inc.
626-967-6202

MEMORANDUM OF AGREEMENT
DESIGNATING THE CITY OF LA HABRA AS
GROUNDWATER SUSTAINABILITY AGENCY FOR
THE GROUNDWATER UNDERLYING
THE CITY OF BREA

This Memorandum of Agreement ("MOA") is by and between the City of La Habra ("La Habra") and the City of Brea ("Brea") and is entered into this 5th day of April, 2016. La Habra and Brea are jointly referred to herein as "the Cities."

RECITALS

A. The State of California has enacted the Sustainable Groundwater Management Act, Water Code §§10720 et seq. ("SGMA"), which took effect on January 1, 2015. SGMA authorizes local agencies, as defined in SGMA, which overlay any portion of a State designated groundwater basin to establish one or more Groundwater Sustainability Agency(s) ("GSA(s)") to adopt and implement one or more Groundwater Sustainability Plan(s) ("GSP(s)").

B. The Cities overlay a groundwater basin known as the La Habra Basin. La Habra obtains over forty percent (4,200 acre feet per year) of its municipal water supply from the portion of La Habra Basin which underlays La Habra. The portion of La Habra Basin underlying Brea yields water to wells in quantities and quality unsuitable for use as part of Brea's municipal water distribution system, but Brea produces a small quantity of water from La Habra Basin (300 acre feet per year) for irrigation purposes.

C. The State of California depicts La Habra Basin to be part of the Orange County Coastal Basin, a much larger groundwater basin which has been designated by the State as a high priority basin. SGMA requires all high or medium priority groundwater basins to be managed under one or more GSAs which must adopt one or more GSPs. Failure to designate a GSA and/or adopt a GSP may result in loss of local control of the groundwater underlying a local agency; and

D. SGMA authorizes the Cities to join together through a memorandum of agreement to designate a GSA to exercise the authority afforded by and comply with the requirements of SGMA. The best interests of the Parties and its citizens, inhabitants and businesses will be served if La Habra is designated as the GSA to provide for sustainable management of La Habra Basin as a distinct basin separate from the Orange County Coastal Basin.

AGREEMENTS

NOW, THEREFORE, it is mutually understood and agreed as follows:

Section 1. La Habra as GSA; Preparation of GSP

a. The Cities agree that La Habra shall be the GSA for the La Habra Basin, including the portion of the La Habra Basin underlying Brea.

b. Subject to consultation with and reasonable supportive action from Brea, La Habra shall act as lead agency to take appropriate actions both to separate La Habra Basin from the Orange County

Coastal Basin and to prepare a single GSP to sustainably manage La Habra Basin according to the requirements of SGMA. Prior to adoption of the GSP by the La Habra City Council, the final draft of the GSP shall be presented to the Brea City Council.

b. The Cities will work jointly to meet the objectives of this MOA. The Cities each will contribute staff time, information, and facilities reasonably necessary to comply with SGMA.

Section 2: Limitations

a. La Habra is not authorized, without the express written agreement of Brea, to impose and collect fees based upon, or related to the production of water from property overlying the La Habra Basin located within the boundaries of Brea as provided in Chapter 8 (Financial Authority) of SGMA.

b. La Habra is not authorized, without the express written agreement of Brea, to exercise enforcement authority based upon, or related to the production of water from property overlying the La Habra Basin located within the boundaries of Brea as provided in Chapter 9 (GSA Enforcement Powers) of SGMA.

Section 3: Costs

Each party shall bear its own costs and expense in carrying out this MOA.

Section 4: Notices

All notices necessary to effectuate this agreement shall be provided in writing delivered to the respective City Manager of the other party via email, fax, or US mail.

Section 5: Amendments

This MOA may be amended only by a subsequent writing executed by each City after City Council authorization.

Section 6: Counterparts

This MOA may be executed in counterparts.

Section 7: Integration

This MOA constitutes the sole, entire, integrated and exclusive agreement between the Parties regarding the contents herein.

Section 8: Ambiguities

The Cities agree and acknowledge that this MOA has been developed through negotiation, and that each party has had a full and fair opportunity to consult with counsel and to revise the terms of this MOA. Consequently, the rule of construction that any ambiguities are to be resolved against the drafting party shall not apply in construing or interpreting this MOA.

CITY OF LA HABRA
A Municipal Corporation of the
State of California

By: _____
Jim Sadro
City Manager

ATTEST:

By: _____
Tamara D. Mason, MMC
City Clerk

APPROVED AS TO FORM:

By: _____
Arthur G. Kidman
Attorney
Kidman Law, LLP

Date: 5-02-2016

CITY OF BREA
A Municipal Corporation of the
State of California

By: _____
Christine Marick
Mayor

ATTEST:

By: _____
Lillian Harris-Neal, CMC
City Clerk

APPROVED AS TO FORM:

By: _____
James L. Markman
City Attorney
City of Brea

Date: 4-12-16